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

Before the State Corporation Commission of Virginia

Line #2011 230 kV Partial Rebuild Project

Application No. 323

Case No. PUR-2023-00049

Filed: March 31, 2023

Volume 2 of 2

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION

OF ELECTRIC TRANSMISSION FACILITIES

Line #2011 230 kV Partial Rebuild Project

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

1. Project Description

In order to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in the Cities of Manassas and Manassas Park, and the Counties of Prince William and Fairfax, Virginia (the "Manassas Airport Area") the following (collectively, the "Partial Rebuild Project"):

- Rebuild approximately 7.25 miles of the existing overhead 230 kV Cannon Branch-Clifton Line #2011 from existing Structure #2011/68, which is located one span outside of the Company's existing Cannon Branch Substation and is not being replaced, to the Clifton Substation.[1] Specifically, the Company proposes to replace the existing Line #2011 1590 ACSR (45/7) conductor from Structure #2011/68 to Clifton Substation with three-phase twin-bundled 768.2 ACSS/TW type conductor, designed for a maximum operating temperature ("MOT") of 250 degrees Celsius and a minimum summer transfer capacity of 1,573 MVA. In order to accommodate the higher capacity of the uprated conductor, the Company additionally proposes to replace the existing single circuit 230 kV weathering steel monopoles with single circuit 230 kV weathering steel monopoles.

- Replace all substation equipment at the Clifton Substation that is associated with Line #2011 and not currently rated for 4000 ampere ("amp" or "A") to provide a 4000A single breaker rating.

- Uprate the Company's line switches to 4000A at the Prince William Delivery Point ("DP") and Battery Heights DP, both of which are the City of Manassas's DPs tapped from Line #2011.

The proposed Partial Rebuild Project is needed to comply with mandatory NERC Reliability Standards for transmission facilities and the Company's mandatory planning criteria ("Planning Criteria"), as well as maintain reliable electric service for overall load growth projected for the Project area. The existing Line #2011 is part of the Company's 230 kV network that supports the delivery of generation to retail and wholesale customers in the Prince William County Data Center Opportunity District and the Manassas Airport Area, which are part of the larger Woodbridge load area (the "Woodbridge Load Area").

[1] Structure #2011/68, which is located one span outside of the Company's existing Cannon Branch Substation, is not being replaced. In a recent case before the Commission, the Company received approval to remove approximately 0.06 mile of the existing 230 kV Line #2011 between the Cannon Branch Substation and Structure #2011/68. *Application of Virginia Electric and Power Company For approval and certification of electric transmission facilities: Line #2011 Extension from Cannon Branch to Winters Branch,* Case No. PUR-2021-00291, Final Order (June 24, 2022). That project will be in service before the Company anticipates construction to begin on the proposed Partial Rebuild Project. Therefore, while Line #2011 is currently the Cannon Branch-Clifton Line #2011, once the project in Case No. PUR-2021-00291 is complete, Line #2011 will run from the Clifton Substation to the Winters Branch Substation and be renamed Clifton-Winters Branch Line #2011. For ease of reference in the DEQ Supplement, the Company is referring to the line segment for this Partial Rebuild Project simply as "Line #2011."

The proposed Partial Rebuild Project will reconductor the 230 kV Line #2011 using a higher capacity conductor, including terminal upgrades, which will increase the expected summer normal rating to 1,573 MVA. Accordingly, the proposed Partial Rebuild Project will increase the transmission capacity of the 230 kV Line #2011 serving the Manassas Airport Area, resolving N-1-1 criteria violations for several segments of the line that have been identified by PJM. Additionally, the Partial Rebuild Project will help maintain reliable service and support the overall growth in the area.

The length of the proposed route for the Partial Rebuild Project is approximately 7.25 miles. The majority of the proposed route will be within existing right-of-way, existing easements, and Company-owned property, which are adequate for the proposed Partial Rebuild Project.[2] Given the availability of existing right-of-way and the statutory preference given to use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes requiring new right-of-way for this Partial Rebuild Project.

2. Environmental Analysis

The Company solicited comments from all relevant state and local agencies about the proposed Partial Rebuild Project by letter dated October 20, 2022. Copies of these letters are included as Attachment 2. The DEQ responded to the Company's request for the proposed Partial Rebuild Project in an email dated October 25, 2022 (see Attachment 2.1), attaching the agency's Scoping Response Letter dated October 25, 2022 (see Attachment 2.2).

As part of Dominion Energy Virginia's environmental compliance, the Company has a comprehensive Environmental Management System Manual in place that ensures it is committed to complying with environmental laws and regulations, reducing risk, minimizing adverse environmental impacts, setting environmental goals, and achieving improvements in its environmental performance, consistent with the Company's core values.

A. Air Quality

For the Partial Rebuild Project, the Company will control fugitive dust during construction in accordance with DEQ regulations. During construction, if the weather is dry for an extended period of time, there will be airborne particles from the use of vehicles and equipment within the transmission line corridor. However, minimal earth disturbance will take place and vehicle speed, which is often a factor in airborne particulate, will be kept to a minimum. Erosion and sediment control is addressed in Section 2.H, below. Equipment and vehicles that are powered by gasoline or diesel

[2] The entire length of the proposed route is adequate for construction of the Partial Rebuild Project except at the proposed location of Structure #2011/58. The Company has entered into a purchase agreement with the landowner to purchase the required property in fee to secure sufficient land rights at this proposed structure location. See also Section II.A.4 and Section II.A.6 of the Appendix.

motors will also be used during the construction of the line. Exhaust from those motors will result in minimal air pollution.

The existing transmission line corridor for the Partial Rebuild Project is currently maintained for operation of the existing transmission line facilities. Based on existing conditions, minimal tree clearing would be required along certain segments of the route. Additionally, some trimming of tree limbs along the edge of the transmission line corridor may be conducted to support construction activities for the Partial Rebuild Project. See Sections II.A.4 and II.A.6 of the Appendix. The Company will coordinate any required temporary construction access with Bull Run Regional Park, Johnny Moore Stream Valley Park, and Blooms Park, which may have additional impacts on tree clearing.

Trees located outside of the transmission line corridor that are tall enough to potentially impact the transmission facilities, commonly referred to as "danger trees," may also need to be cut. Danger trees will be cut to be no more than three inches above ground level, limbed, and will remain where felled. Debris that is adjacent to homes will be disposed of by chipping or removal. In other areas, debris may be mulched or chipped as practicable. The Company does not expect to burn cleared material but, if necessary, the Company will coordinate with the responsible locality to ensure all local ordinances and DEQ requirements are met. The Company's tree clearing methods are described in Section 2.L.

B. Water Source (No water source is required for transmission lines so this discussion will focus on potential waterbodies to be crossed by the proposed Partial Rebuild Project.)

The proposed Partial Rebuild Project is located within the Middle Potomac-Anacostia-Occoquan watershed, Hydrologic Unit Code 02070010. According to the U.S. Geological Survey ("USGS") Nokesville, Independent Hill, and Manassas topographic quadrangles, the existing transmission line corridor crosses Russia Branch at four separate locations, Bull Run at one location. The Virginia Department of Conservation and Recreation's ("DCR") Natural Heritage Data Explorer provides information on streams using the National Hydrography Dataset. According to the Natural Heritage Data Explorer mapping service, the existing Partial Rebuild Project also crosses unnamed tributaries to Russia Branch, Bull Run, and Popes Head Creek. Any clearing required in the vicinity of streams will be performed by hand within 100 feet of both sides, and vegetation less than three inches in diameter will be left undisturbed.

The Virginia Marine Resources Commission ("VMRC") has jurisdiction over streams with drainage areas of greater than five square miles and will require a permit for encroachment over state-owned bottom associated with aerial stream crossings of the transmission line. The Partial Rebuild Project will have an aerial stream crossing over Bull Run at approximately 38.777087°, -77.422111°, which has a drainage area of 165 square miles and will require authorization from VMRC under a subaqueous encroachment permit. A Joint Permit Application will be submitted for review by the

VMRC, DEQ, and the U.S. Army Corps of Engineers (the "Corps") to authorize the crossing over Bull Run and any project-related impacts to jurisdictional wetlands or other Waters of the U.S. ("WOUS"). See Section 2.D below.

The Company solicited comments from the VMRC regarding the proposed Partial Rebuild Project in October 2022 (see Attachment 2). VMRC provided a letter in response to the Company's request for the proposed Partial Rebuild Project on November 28, 2022. A copy of this letter is included as Attachment 2.B.1.

C. Discharge of Cooling Waters

No discharge of cooling waters is associated with the Partial Rebuild Project.

D. Tidal and Non-tidal Wetlands

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

Wetlands Impact Consultation

Within the 7.25-mile Line #2011 transmission line corridor proposed for rebuild, the Company delineated wetlands and other WOUS using the *Routine Determination Method* as outlined in the *1987 Corps of Engineers Wetland Delineation Manual* and methods described in the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0). Approximately, 1.23 acres of palustrine emergent ("PEM") wetlands, 0.36 acre of palustrine forested ("PFO") wetlands, 0.09 acre of palustrine scrub shrub ("PSS") wetlands, 0.59 acre of palustrine open water ("POW") wetlands, and 2,790 linear feet of stream channel were identified within the transmission line corridor. The Company submitted the results of this delineation to the Corps on March 30, 2023 for confirmation. See Attachment 2.D.1.

Total jurisdictional resources within the Partial Rebuild Project proposed transmission line corridor are provided in Table 1 and detailed in Attachment 2.D.1.

Table 1. Summary of Delineated Jurisdictional Resources Within the Partial Rebuild Project Area

Resource	Area (±)
Palustrine Forested Wetland	0.36 acre
Palustrine Emergent Wetland	1.23 acres
Palustrine Scrub Shrub	0.09 acre
Open Waters (Palustrine Open Water)	0.59 acre
Perennial Stream	0.59 acre (1,865 linear feet)
Intermittent Stream	0.06 acre (805 linear feet)
Ephemeral Stream	0.001 acre (120 linear feet)

In October 2022, the Company solicited comments from the DEQ Office of Wetlands and Stream Protection and the Corps. The Company has sited structures to avoid wetlands and streams to the extent practicable. Temporary impacts will be restored to pre-existing conditions and permanent impacts will be compensated for in accordance with all applicable state regulations and laws. A Joint Permit Application will be submitted for further evaluation and final permit need by DEQ. Prior to construction, the Company will obtain any necessary permits to impact jurisdictional resources.

E. Floodplains

As depicted on the Federal Emergency Management Agency's online Flood Insurance Rate Maps #51153C0157D (eff. January 5, 1995), #51153C0176D (eff. January 5, 1995), #51153C0114D (eff. January 5, 1995), #51153C0118D (eff. January 5, 1995), and #51059C0245E (eff. September 17, 2010) portions of the Partial Rebuild Project area lie within Zone X (areas of minimal flood zone hazard with a 0.2% annual chance of flood hazard), Zone AE (areas within the 100-year floodplain with an established base flood elevation and a regulatory floodway), and Zone A (areas within the 100-year floodplain with no established base flood elevation). While temporary grading and timbermats may be used within the 100-year floodplain, no permanent fill will be placed within the 100-year floodplain. Existing Structure #2011/20 is currently located within a Zone A flood hazard area directly east of Russia Branch and will be rebuilt outside of Zone A, and Structure #2011/15 will be rebuilt within a Zone X minimal flood zone hazard area. None of the structures associated with the Partial Rebuild Project are located within a regulatory floodway. The Company will coordinate with the local floodplain coordinators as required.

F. Solid and Hazardous Waste

On behalf of the Company, Resource Environmental Solutions, LLC ("RES") conducted database searches for solid and hazardous wastes, and petroleum release sites within a 0.5-mile radius (the "search radius") of the proposed Partial Rebuild Project that may impact the Partial Rebuild Project. The results are summarized in a report included as Attachment 2.F.1.

RES obtained publicly available data from the Environmental Protection Agency ("EPA") Facility Registry System ("FRS"), which provides information about facilities, sites, or places subject to environmental regulation or of environmental interest. Although this data set includes all sites subject to environmental regulation by the EPA or other state authority, such as sites that fall under air emissions or wastewater programs, the results reported here only include those sites which fall under the EPA's hazardous waste, solid waste, remediation, and underground storage tank programs. These sites include Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA")/Superfund; Resource Conservation and Recovery Act ("RCRA"); and brownfield sites.

Per this review, no registered Brownfield Sites or CERCLA/SEMS sites were identified within the search radius.

According to the EPA FRS database, 62 RCRA sites are located within a 0.5-mile radius of the transmission line corridor. Of the 62 RCRA sites identified within the search radius, 56 are located over 500 feet from the Partial Rebuild Project. These 56 sites are located outside of the transmission line corridor for the Partial Rebuild Project and due to distance, do not appear to warrant further concern relating to the Partial Rebuild Project. Of the remaining six RCRA sites, five are located within 500 feet of the Partial Rebuild Project and one is directly crossed by the existing transmission line facilities. These six sites are discussed in further detail below.

The existing transmission line facilities directly cross the northern portion of the parcel containing the Virginia Tech Occoquan Watershed Monitoring Lab (EPA Registry ID: 110006454773), and Structure #2011/56, which is currently located in the northeastern corner of the parcel, will be rebuilt slightly west of its current location. The Virginia Tech Occoquan Watershed Monitoring Lab provides services for monitoring the water quality of rivers, streams, reservoirs, and other waterbodies and environmental sampling. The facility is classified as an active very small quantity generator with no records of RCRA violations in the FRS Enforcement and Compliance Database. Given the nature and regulatory status of this facility (no violations found), it does not appear to warrant further concern relating to the Partial Rebuild Project.

The transmission line corridor is located within approximately 469 feet of the Payne Publishers (EPA Registry ID: 110006456539) facility, 396 feet of the Manassas Quality Auto Body Inc. (EPA Registry ID: 110030749377) facility, 324 feet of the Fiberglass Unlimited Collision (EPA Registry ID: 110006458449) facility, and 473 feet of the Classic Automotive Inc. (EPA Registry ID: 110008194916) facility, which are all classified as active very small quantity generators. These facilities have no records of RCRA violations in the FRS Enforcement and Compliance Database. Due to the distance and regulatory status of these facilities (no violations found), they do not appear to warrant further concern relating to the Partial Rebuild Project.

The transmission line corridor is located within approximately 150 feet of the Glen Gery Corporation Capitol Plant (EPA Registry ID: 110001887815), which is located directly east of the intersection of Godwin Drive and the Norfolk Southern Railroad in the City of Manassas. According to the site-specific *FRS Facility Detail Report*, the plant is classified as an active very small quantity generator under the RCRA and is also registered under the Toxic Release Inventory ("TRI") and Integrated Compliance System for Air for operation under a Clean Air Act ("CAA") Synthetic Minor Emissions permit. The facility has no records of RCRA or CAA violations in the FRS Enforcement and Compliance Database, and the TRI report for the facility shows that no toxic releases have occurred since 2004. Previous toxic releases consisted solely of air emissions of hydrogen fluoride that occurred between 1997 and 2004. No surface water discharges, releases to land, or injection to groundwater have been reported at the facility. Due to the regulatory status of the facility (no

violations or recent toxic releases found) and the nature of the previous releases (air emissions), the facility is not anticipated to present an environmental concern for the Partial Rebuild Project.

RES also reviewed data from the DEQ Environmental Data Mapper ("EDM") for the presence of Voluntary Remediation Program ("VRP") sites, Permitted Solid Waste Facilities, and petroleum release sites.

The EDM returned one VRP site within a 0.5-mile radius of the Partial Rebuild Project. The transmission line corridor is located within approximately 379 feet of the Manassas Ice and Fuel Co. (VRP00030) facility, which is classified as pre-VRP (predating the establishment of the VRP program on July 1, 1997). This facility is associated with three petroleum releases identified within the search radius, which are discussed in further detail below.

The EDM returned two Permitted Solid Waste Facilities within the search radius. These two Permitted Solid Waste Facilities are located within 500 feet of the Partial Rebuild Project area and are discussed in further detail below.

One active solid waste management facility (Manassas Transfer Station; Solid Waste Facility ID #900000006389) was identified within the transmission line corridor between Structures #2011/32-33. The Manassas Transfer Station is owned and privately operated by Waste Management Inc. under Permit-by-Rule #091. Permits-by-Rule or "PBRs" are an alternative to a full solid waste permit, available for solid waste management facilities that treat or temporarily store solid waste. The transfer station is located at 8305 Quarry Road in the City of Manassas. The City partners with Waste Management Inc., which owns and operates the Manassas Transfer Station, to receive the City's refuse (including construction and demolition debris, municipal solid waste, and yard waste) and provide residential drop-off events for household hazardous waste (including pesticides, batteries, paint, cleaning products, motor oil and gasoline), electronics, and shredding collection. Refuse is taken to the Manassas Transfer Station and put in trailers for transport to King George landfill in Fredericksburg, Virginia. Due to the nature of the facility as an actively permitted, controlled temporary storage and transfer station for refuse and limited household hazardous wastes, it is not anticipated this facility will present an environmental concern for the Partial Rebuild Project.

The Partial Rebuild Project is located within approximately 411 feet of an active Permitted Solid Waste Facility associated with the Dominion Transfer Station (Solid Waste Facility ID #900000006389). The Dominion Transfer Station is owned and operated by Patriot Disposal Inc. under PBR #693. The transfer station is located at 9115 Industry Drive in the City of Manassas Park. The City of Manassas Park partners with Patriot Disposal Inc. to receive the City's refuse. The transfer station does not accept tires, liquid or hazardous materials (including paints, fuels, poisons, etc.), electronic devices, batteries (all types), fluorescent lights, or mercury containing devices. Due to the nature of the facility as an actively permitted, controlled temporary storage and transfer station, the nature of the accepted solid

waste, and location of the facility (west of the Norfolk Southern Railroad and outside of the Partial Rebuild Project area), it is not anticipated this facility will present an environmental concern for the Partial Rebuild Project.

The EDM returned 94 petroleum releases within the search radius. Ninety-two of the 94 petroleum releases have been closed. Of the 94 petroleum releases identified within the study area, 75 are located over 500 feet from the transmission line corridor. These 75 sites are located outside of the transmission line corridor for the Partial Rebuild Project and due to distance and release site status (closed), do not appear to warrant further concern relating to the proposed Partial Rebuild Project. The remaining 19 petroleum release sites are located within 500 feet of the Project area, with two located less than 50 feet from the transmission line corridor. These petroleum release sites are discussed in further detail in Attachment 2.F.1. See Table 2 below for a listing of petroleum release site record information for the 19 sites identified within 500 feet of the Partial Rebuild Project.

Table 2: Petroleum Release Sites identified by DEQ as occurring within 500 feet of the Partial Rebuild Project

PC Number	Site Name	City/ County	Latitude	Longitude	Status	Reported Date	Closure Date	Proximity to Project Area (Feet)
20043150	Dean Water Pump Station	Manassas City	38.748099	-77.491762	Closed	12/19/2003	6/3/2004	437
20153152	New Baldwin Elementary School	Prince William County	38.748845	-77.46858	Closed	12/16/2014	12/13/2017	449
20033007	Manassas Frozen Food Property	Prince William County	38.749956	-77.47172	Closed	7/12/2002	8/30/2007	45
20003223	Kinchloe Property	Prince William County	38.750189	-77.4696	Closed	1/6/2000	10/2/2006	43
20053075	Morais Properties Property	Manassas City	38.75036	-77.475683	Closed	9/20/2004	9/27/2004	189
19810300	Mobil	Prince William County	38.750665	-77.475125	Closed	11/14/1980	8/5/1994	293
20163124	George A Roy Estate Property	Manassas City	38.75065	-77.47261	Closed	12/16/2015	1/19/2016	332
20123208	Prosperos Book Store	Manassas City	38.750666	-77.47314	Closed	5/14/2012	11/1/2016	361
19860801	MIFCO - Manassas Ice and Fuel Company	Manassas City	38.750907	-77.469028	Open	6/6/1986	N/A	224
20173413	Safelite	Manassas City	38.750963	-77.475357	Closed	5/4/2017	6/28/2017	396
19993216	Manassas City Hall	Manassas City	38.750941	-77.470635	Closed	1/4/1999	5/21/1999	368
20043184	MIFCO Facility	Manassas City	38.750955	-77.468809	Open	1/29/2004	N/A	192
19850564	MIFCO - Manassas Ice and Fuel Company	Manassas City	38.751219	-77.468885	Closed	5/14/1985	5/14/1985	268
20033137	Church Street Peaking Plant	Manassas City	38.752651	-77.46282	Closed	1/16/2003	11/4/2003	289
19993210	Church Street Power Generation Facility	Manassas City	38.752741	-77.462899	Closed	12/23/1998	4/21/1999	327
19993238	Arlington Iron Works	Manassas City	38.756417	-77.455915	Closed	1/21/1999	6/30/1999	290
19973021	H S Eley Construction Company Incorporated	Manassas City	38.756814	-77.452785	Closed	3/11/1996	12/11/1996	141
20063193	Waste Management - Quarry Road Site	Manassas City	38.757327	-77.451278	Closed	1/30/2006	5/23/2006	258
20113153	UOSA - Russia Branch Pump Station	Manassas Park City	38.764266	-77.441158	Closed	1/7/2011	6/16/2011	135

As shown in the table above, 17 of the 19 petroleum release sites within 500 feet of the Partial Rebuild Project are closed. The DEQ deems a petroleum release site closed once no further risk to the general public has been identified, although petroleum residue might remain. The DEQ's risk assessment does not always consider the risk to subsurface utility work, nor does it address additional costs associated with managing contaminated soil or groundwater. However, the Company has assessed this risk for these petroleum release sites and determined that the sites should not impact the Partial Rebuild Project. See Attachment 2.F.1.

Two of the 19 petroleum release sites identified within 500 feet of the Partial Rebuild Project are classified as open. These two sites (PC No. 19860801 and PC No. 20043184) are associated with the Manassas Ice and Fuel Company facility, which is located approximately 200 feet north of the Partial Rebuild Project. Given that the Manassas Ice and Fuel Company is located north of the Norfolk Southern Railroad and cross gradient to the Partial Rebuild Project, it is highly unlikely that any material would migrate from the facility to the transmission line corridor, which is located south of the Norfolk Southern Railroad. Based on the location of the Manassas Ice and Fuel Company, these vicinity releases do not appear to warrant further concern relating to the Partial Rebuild Project.

The Company has a procedure in place to handle petroleum contaminated soil, if encountered; however, given that the two open release sites are located outside (north of the Norfolk Southern Railroad) and cross gradient of the Partial Rebuild Project and the remaining 17 release sites within 500 of the Partial Rebuild Project are classified as closed (or indicate a lack of significant soil and/or groundwater contamination), none of the petroleum release sites are expected to have an impact on the proposed Partial Rebuild Project.

In summary, a total of 94 petroleum release sites, one VRP site, two Permitted Solid Waste Facilities, and 62 RCRA sites are located within a 0.5-mile radius of the Partial Rebuild Project area. No EPA registered brownfield sites or CERCLA/superfund sites are located within 0.5 mile of the Partial Rebuild Project area.

Tables listing the identified RCRA and petroleum release sites are included in Attachment 2.F.1.

G. Natural Heritage, Threatened and Endangered Species

On behalf of the Company, RES conducted online database searches for threatened and endangered species in the vicinity of the Partial Rebuild Project, including the U.S. Fish and Wildlife ("USFWS") Information, Planning, and Conservation ("IPaC") system, the USFWS Critical Habitat for Threatened and Endangered Species Mapper, the USFWS Bald Eagle Concentration Area Map, the USFWS Rusty Patched Bumble Bee Map, the Virginia Department of Wildlife Resources ("DWR") Virginia Fish and Wildlife Information Service ("VAFWIS"), the DWR Northern long-eared bat ("NLEB") Winter Habitat and Roost Trees Map, DCR Natural Heritage Data Explorer ("NHDE"), and the Center for Conservation Biology

("CCB") Bald Eagle Nest Locator. The results are summarized in a report, included as Attachment 2.G.1, and are presented in Table 3 below.

Table 3. Threatened and endangered species within the Partial Rebuild Project vicinity

Species	Status	Database	Result
Northern long-eared bat (*Myotis septentrionalis*)	FE ST	USFWS-IPaC, DWR-VAFWIS, DWR-NLEB Winter Habitat and Roost Tree Application	Identified as potentially occurring within or near the Partial Rebuild Project. The Partial Rebuild Project area contains potential habitat for the NLEB because it is located within the species' range and contains forested land. According to the DWR NLEB Winter Habitat and Roost Tree Application, the Partial Rebuild Project is not located in the vicinity of known maternity roosts or hibernaculum. Minimal tree clearing along the existing transmission line corridor and tree clearing for construction access ingress and egress will be required. The Company intends to complete NLEB absence/presence surveys within the Partial Rebuild Project vicinity. If NLEB are identified, tree clearing activities will adhere to the applicable time of year restrictions.
Monarch butterfly (*Danaus plexippus*)	FC	USFWS-IPaC	Identified as potentially occurring within or near the Partial Rebuild Project. This species is a nectivorous insect preferring a variety of habitats including rangelands, meadows, riparian areas, farms, and open forests. Suitable habitat may be present in the transmission line corridor. Vegetation may be temporarily disturbed due to construction activity; however, no long-term or adverse effects are expected. No agency coordination for federal candidate species is required; therefore, no further action is required for this species.
Brook floater (*Alasmidonta varicosa*)	SE	DWR-VAFWIS, DCR-NHDE	Confirmed as occurring approximately 1.90 miles west of the Partial Rebuild Project in Broad Run and identified as potentially occurring within the Partial Rebuild Project area. This species typically inhabits freshwater rivers and streams with areas of riffles and coarse-sandy or cobble substrates. Not found in stagnant waters such as lakes and ponds. No in-stream work will be required for the Partial Rebuild Project and erosion and sediment controls will be utilized to prevent runoff. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the Brook floater.

Species	Status	Database	Result
Yellow lance (*Elliptio lanceolata*)	FT ST	DWR-VAFWIS	Confirmed as occurring approximately 1.90 miles west of the Partial Rebuild Project in Broad Run and identified as potentially occurring within the Partial Rebuild Project area. This species prefers clean, coarse to medium sized sands as substrate. On occasion, specimens are also found in gravel substrates. This species is found in the main channels of drainages down to streams as small as a meter across. No in-stream work will be required for the Partial Rebuild Project and erosion and sediment controls will be utilized to prevent runoff. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the Yellow lance.
Wood turtle (*Glyptemys insculpta*)	ST	DWR-VAFWIS	Identified as potentially occurring within or near the Partial Rebuild Project. The typical habitat for this semiaquatic species is a forested stream with clear, moderately flowing water; a gravel bottom; and deep pools with sufficient amounts of leaf litter for overwintering. The ideal surrounding forested floodplain would be one with a mix of mature and young forest as well as some interspersed open, wet meadows. According to DWR's *Time of Year Restrictions and Other Guidance*, published July 1, 2021, in-stream work within Wood turtle inhabited streams is prohibited from October 1 through March 31 and work within 900 feet of Wood turtle inhabited streams is prohibited from April 1 through September 30. An undisturbed naturally vegetated buffer of at least 300 feet (preferably larger) must be maintained along Wood turtle inhabited streams. Extra precautionary measures may need to be taken if working near streams to protect individual turtles (i.e., posting signs or providing information to contractors on how to identify Wood turtles and procedures that must be followed if one is identified within the Partial Rebuild Project area). Any anticipated impacts and requirements associated with this Partial Rebuild Project will be identified through the permitting and regulatory process.

Species	Status	Database	Result
Torrey's mountain mint (*Pycnanthemum torreyi)*	ST	DCR NHDE	Identified as potentially occurring in the portion of the Partial Rebuild Project located within the Rocky Branch – Broad Run subwatershed (HUC 020700100504), from Structure #2011/43 to Structure #2011/68. In Virginia, habitat for this species consists of dry, rocky, deciduous woods, along roadsides, and in thickets near streams. This species is apparently declining throughout its range. Historic occurrences out-number extant occurrences in almost all of the states having available information within the range of the species. There are approximately 35 confirmed extant occurrences throughout its range. From Structure #2011/68 to Structure #2011/43, the Partial Rebuild Project is primarily located in existing transmission line easements that are currently maintained for operation of the existing transmission line facilities and crosses through mixed commercial, residential, and industrial uses in heavily developed areas adjacent to the Norfolk Southern Railroad. As such, suitable habitat for Torrey's mountain mint is not anticipated to be present within the portion of the Partial Rebuild Project located within the Rocky Branch – Broad Run subwatershed. Given the lack of suitable habitat and documented occurrences within the Partial Rebuild Project area, the Partial Rebuild Project is not anticipated to adversely affect the Torrey's mountain mint.

Species	Status	Database	Result
Rusty patched bumble bee (*Bombus affinis*)	FE	DCR-NHDE, USFWS Rusty Patched Bumble Bee Map	Identified as potentially occurring within or near the Partial Rebuild Project. This species is a generalist forager that gather pollen and nectar from a wide variety of flowering plant species. As such, they have been observed and collected in a variety of habitats, including prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. Additionally, as maintained rights-of-ways are often cleared of shrubs and trees, flowering herbaceous plants often dominate and can make for good habitat for bee species. Habitat analysis using the USFWS Rusty Patch Bumble Bee Map was completed to determine if the Partial Rebuild Project is located within High Potential Zones where the species is likely to be present. This Partial Rebuild Project does not intersect with the zones of High Potential or Low Potential based on the map data. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the Rusty patched bumble bee.
Bald eagle (*Halieaeetus leucocephalus*)	Bald and Golden Eagle Protection Act	CCB, USFWS Bald Eagle Concentration Area Map	No Bald eagle nests are located within 660 feet of the Partial Rebuild Project. The USFWS Virginia Bald Eagle Concentration Area Map confirms that the proposed Partial Rebuild Project area does not intersect any designated Bald eagle concentration areas. The Bald eagle prefers open bodies of water surrounded by tall trees but can also be found in forested areas away from waterbodies. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the Bald eagle.
Critical Habitat for Threatened and Endangered Species	Critical Habitat	USFWS – Critical Habitat for Threatened and Endangered Species	No critical habitat present.

Note: FE denotes species is federally endangered; FT denotes species is federally threatened; FC denotes federal candidate species; SE denotes species is state endangered; ST denotes species is state threatened.

The following conclusions are based upon the proposed scope of work, as described by the Company. The proposed scope of work assumes construction access will avoid stream crossings where practical or use crane mats to span stream crossings, and erosion and sediment controls will be used as appropriate throughout the Partial

Rebuild Project to protect wetlands and water resources. The scope of work assumes most of the work will occur within the existing, cleared and maintained transmission line corridor and areas previously cleared for the development of the Cannon Branch and Clifton Substations and industrial and commercial facilities. However, some trimming of tree limbs along the edge of the corridor and within new easements may be conducted to support construction activities for the Partial Rebuild Project. Additionally, tree clearing is anticipated to be required for temporary construction access to Structures #2011/6-20.

NLEB

The USFWS IPaC database identified the NLEB as potentially occurring within or near the Partial Rebuild Project area; however, the DWR NLEB Winter Habitat and Roost Tree Application map shows no known hibernacula or maternity roost trees are within the Partial Rebuild Project vicinity. NLEBs spend the winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, NLEBs roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. NLEBs seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. The NLEB has also been found rarely roosting in structures, like barns and sheds (https://www.fws.gov/Midwest/endangered/mammals/nleb/nlebFactSheet.html).

Minimal tree clearing along the existing transmission line corridor and tree clearing for construction access ingress and egress to Structures #2011/6-20 will be required. According to the DWR NLEB Winter Habitat and Roost Tree Application, the Partial Rebuild Project is not located in the vicinity of known maternity roosts or hibernaculum. The Company intends to complete NLEB absence/presence surveys within the Partial Rebuild Project vicinity. If NLEB are identified, tree clearing activities will adhere to the applicable time of year restriction period from April 1 to November 14.

Monarch Butterfly

The USFWS IPaC database identified the Monarch butterfly as potentially occurring within or near the Partial Rebuild Project. This species is a nectivorous insect preferring a variety of habitats including rangelands, meadows, riparian areas, farms, and open forests. Vegetation may be temporarily disturbed due to construction activity; however, no long term or adverse effects are expected. No agency coordination for federal candidate species is required; therefore, no further action is required for this species.

Yellow Lance and Brook Floater

According to the DWR VAFWIS, the Yellow lance and Brook floater were identified as potentially occurring within the vicinity of the Partial Rebuild Project, and both species have been observed within Broad Run, which is located approximately 1.90 miles west of the Partial Rebuild Project area. Based on the anticipated scope of the Partial Rebuild Project, there are no anticipated impacts to the Brook floater and Yellow lance. No in-stream work is proposed, as all streams and other WOUS that may be crossed for construction access will use non-impacting temporary structures such as timber mats or timber mat bridges. If the Partial Rebuild Project scope changes to include in-stream work, additional coordination may be required.

Torrey's Mountain Mint

According to the DCR NHDE, Torrey's mountain mint was identified as potentially occurring in the portion of the Partial Rebuild Project located within the Rocky Branch – Broad Run subwatershed (HUC 020700100504), from Structure #2011/43 to Structure #2011/68. Torrey's mountain mint is an aromatic herb that produces clusters of small, white flowers from late June to October. In Virginia, habitat for this species consists of dry, rocky, deciduous woods, along roadsides, and in thickets near streams. This species is apparently declining throughout its range. Historic occurrences out-number extant occurrences in almost all of the states having available information within the range of the species. There are approximately 35 confirmed extant occurrences throughout its range. From Structure #2011/68 to Structure #2011/43, the Partial Rebuild Project is primarily located in existing transmission line easements that are currently maintained for operation of the existing transmission line facilities and crosses through mixed commercial, residential, and industrial uses in heavily developed areas adjacent to the Norfolk Southern Railroad. As such, suitable habitat for Torrey's mountain mint is not anticipated to be present within the portion of the Partial Rebuild Project located within the Rocky Branch – Broad Run sub watershed. Given the lack of suitable habitat and documented occurrences within the Partial Rebuild Project area, the Partial Rebuild Project is not anticipated to adversely affect the Torrey's mountain mint.

Wood Turtle

Additionally, the DWR VAFWIS identified the Wood turtle (*Glyptemys insculpta*) as the only semiaquatic/terrestiral species of concern "likely to occur" within a 2.0-mile radius of the Partial Rebuild Project site. The typical habitat for these semiaquatic turtles is a forested stream with clear, moderately flowing water; a gravel bottom; and deep pools with sufficient amounts of leaf litter for overwintering. The ideal surrounding forested floodplain would be one with a mix of mature and young forest as well as some interspersed open, wet meadows. Based on observations made during WOUS delineation and DWR's predicted habitat map provided for the Wood turtle, potential habitat for this species appears to be present within and along Bull Run and the unnamed tributaries to Bull Run that traverse the project site, as well as within the

forested areas surrounding these streams. According to DWR's *Time of Year Restrictions and Other Guidance*, published July 1, 2021, in-stream work within Wood turtle inhabited streams is prohibited from October 1 through March 31 and work within 900 feet of Wood turtle inhabited streams is prohibited from April 1 through September 30. An undisturbed naturally vegetated buffer of at least 300 feet (preferably larger) must be maintained along Wood turtle inhabited streams. Extra precautionary measures will be taken if working near streams to protect individual turtles (i.e., posting signs or providing information to contractors about how to identify Wood turtles and procedures that need to be taken if one is identified within the Partial Rebuild Project area). Any anticipated impacts and requirements associated with this Partial Rebuild Project will be identified through the permitting and regulatory process.

Rusty Patched Bumble Bee

The DWR VaFWIS also identified the Rusty patched bumble bee (*Bombus affinis*) as potentially occurring within or near the Partial Rebuild Project. This species is a generalist forager that gather pollen and nectar from a wide variety of flowering plant species. As such, they have been observed and collected in a variety of habitats, including prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. Additionally, as maintained rights-of-ways are often cleared of shrubs and trees, flowering herbaceous plants often dominate and can make for good habitat for bee species. Habitat analysis using the USFWS Rusty Patch Bumble Bee Map was completed to determine if the Partial Rebuild Project is located within High Potential Zones where the species is likely to be present. The Partial Rebuild Project does not intersect with the zones of High Potential or Low Potential based on the map data. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the Rusty patched bumble bee.

Bald Eagle

The CCB Bald Eagle Nest Locator identified no bald eagle nests within 660 feet of the Partial Rebuild Project area. The closest identified nest (Nest PW1403) to the Partial Rebuild Project is located approximately 4,735 feet from the Partial Rebuild Project area. The USFWS Virginia Bald Eagle Concentration Area Map confirms that the proposed Partial Rebuild Project area does not intersect any designated Bald eagle concentration areas.

Critical Habitat

According to the USFWS Critical Habitat for Threatened and Endangered Species Mapper, there are no designated critical habitats within the Partial Rebuild Project area. Therefore, the Partial Rebuild Project is not anticipated to adversely affect critical habitat.

In October 2022, the Company requested comments from USFWS, DWR, and DCR regarding the proposed Partial Rebuild Project. The Company had previously requested a natural heritage environmental review from DCR and received a response on October 27, 2022, included as Attachment 2.G.2.

In summary, construction and maintenance of the transmission line facilities could have some minor effects on wildlife; however, impacts on most species will be short-term in nature, and limited to the period of construction. As Dominion Energy Virginia will obtain all necessary permits prior to construction, such as authorization from the VMRC, DEQ, and the Corps, coordination with the DWR, DCR, and USFWS will take place through the respective permit processes to avoid and minimize impacts to listed species, to the extent there are any.

Natural Heritage Resources

A Project Review Request was submitted to DCR Division of Natural Heritage ("DNH") in October 2022. As noted above, DCR-DNH completed this request on October 27, 2022. The results of DCR-DNH's official review are provided in Attachment 2.G.2.

According to the official review, DCR-DNH concluded that the Partial Rebuild Project will not affect any documented state-listed plants or insects and does not cross any State Natural Area Preserves under DCR's jurisdiction. However, according to a DCR biologist, several rare plants, which are typically associated with prairie vegetation and inhabit semi-open diabase glades in Virginia, may occur in the Partial Rebuild Project area if suitable habitat is present. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flat rock, a hard, dark-colored volcanic rock, is found primarily in Northern Virginia Counties and is located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought tolerant plants occurs. Diabase flat rocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction.

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

For context, diabase refers to unique plant communities that form in certain circumstances in the presence of underlying igneous diabase rock. Diabase associated plant species, whose occurrence in Virginia is often associated with diabase derived soils, are not formally listed as endangered or threatened. These plants and associated habitat, while considered rare by DCR-DNH, are not protected by any regulations.

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

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

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

Due to the low likelihood of diabase plants in the Partial Rebuild Project area, and the lack of any legal status via federal or state law, the Company concludes that DCR-DNH's recommendation for an inventory for rare plants associated with diabase glades in the Partial Rebuild Project area is not required. In lieu of conducting an inventory of these resources prior to construction, Dominion Energy Virginia suggests that it provide the Company's construction team with information about the rare diabase plant species and coordinate with DCR-DNH if a species of concern is observed.[3]

New and updated information is continually added to DCR's Biotics database. The Company shall re-submit project information and a map for an update on this natural heritage information if the scope of the Partial Rebuild Project changes and/or six months have passed before this information is utilized.[4]

[3] This is approach is consistent with the Commission's directive in prior proceedings. See, e.g., *Application of Virginia Electric and Power Company For approval and certification of electric transmission facilities: DTC 230 kV Line Loop and DTC Substation*, Case No. PUR-2021-00280, Final Order at 15 ("Based on the record developed herein, the Commission agrees with Dominion [Energy Virginia] that customers should not bear the costs of the recommended survey. The Commission therefore declines to adopt DCR's recommendation but directs the Company to educate its construction personnel regarding the plant species prior to the commencement of construction activities and to coordinate with DCR if the species is found within the Project area") (internal citations omitted).

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

H. Erosion and Sediment Control

The DEQ approved the Company's *Standards & Specification for Erosion & Sediment Control and Stormwater Management for Construction and Maintenance of Linear Electric Transmission Facilities (TE VEP 8000).* These specifications are given to the Company's contractors and require erosion and sediment control measures to be in place before construction of the line begins and specifies the requirements for rehabilitation of the right-of-way. A copy of the current DEQ approval letter dated August 13, 2019, is provided as Attachment 2.H.1. According to the approval letter, coverage was effective through August 12, 2020. The Company submitted the renewal application on August 3, 2020 and is awaiting approval.

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

The Company solicited comments from the Virginia Department of Historic Resources ("VDHR") in March 2023.

Dutton + Associates ("Dutton") was retained by the Company to conduct a Stage I Pre-Application Analysis for the proposed Partial Rebuild Project. This analysis was completed in October 2022 and submitted to VDHR on March 6, 2023. The report is included as Attachment 2.I.1. The effort serves as a follow-up to the previously coordinated *Pre-Application Analysis (analysis) of cultural resources for the Line #2011 Extension from Cannon Branch to Winters Branch Project* (Dutton 2021/ VDHR File No. 2021-4980); therefore, this effort includes the portion of the project extending from Cannon Branch to Clifton. The analysis was performed for Dominion Energy Virginia in support of its Application to the Commission. The analysis was conducted in accordance with VDHR guidance titled *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (January 2008) and Commonwealth of Virginia State Corporation Commission Division of Public Utility Regulation *Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia* (August 2017).

The background research conducted as part of this analysis was consistent with VDHR guidance and designed to identify all previously recorded National Historic Landmarks ("NHL") located within 1.5-miles of the proposed Partial Rebuild Project or closer, all National Register of Historic Places ("NRHP")-listed properties, battlefields, and historic landscapes located within 1.0-mile of the proposed Partial Rebuild Project or closer, all historic properties considered eligible for listing in the NRHP located within 0.5-mile of the proposed Partial Rebuild Project, and all archaeological sites located directly within the proposed Partial Rebuild Project area. Historic properties include architectural and archaeological (terrestrial and underwater) resources, historic and cultural landscapes, battlefields, and historic districts. For each historic property within the defined tiers, a review of existing documentation and a field reconnaissance was undertaken to assess each property's significant character-defining features, as well as the character of its current setting. Following identification of historic properties, Dutton assessed the potential for

impacts to any identified properties as a result of the proposed Partial Rebuild Project. Specific attention was given to determining whether or not construction related to the Partial Rebuild Project could introduce new visual elements into the property's viewshed or directly impact the property through construction, which would either directly or indirectly alter those qualities or characteristics that qualify the historic property for listing in the NRHP.

Review of the VDHR VCRIS inventory records revealed a total of 578 previously recorded architectural resources are located within 1.5 miles of the Partial Rebuild Project area. Of these, there are no NHLs located within 1.5 miles of the proposed Partial Rebuild Project, 14 properties listed in the NRHP located within 1.0 mile of the Partial Rebuild Project, four battlefields located within 1.0 mile of the Partial Rebuild Project, no historic landscapes within 1.0 mile of the Partial Rebuild Project, and four properties that have been determined eligible or potentially eligible for listing in the NRHP within 0.5 mile of the Partial Rebuild Project. Of these resources, one of the NRHP-listed properties, three battlefields, and one NRHP-eligible property are directly crossed by the project alignment. VCRIS also revealed that portions, but not all, of the Partial Rebuild Project area have been subject to previous Phase I survey and 11 previously recorded archaeological sites are located directly within or adjacent to the Partial Rebuild Project transmission line corridor (within 100 feet of the centerline). One of these sites has been determined not eligible for listing in the NRHP and the rest have not been formally evaluated for listing in the NRHP by the VDHR.

Inspection of and from these resources found that most are located within the vicinity of the City of Manassas and the associated urban and suburban areas. As such, the setting of most resources already includes a wide variety of nonhistoric features including dense development and modern infrastructure. The existing transmission line and multiple structures are currently visible from many of the resources, particularly those in close proximity to or crossed by the Partial Rebuild Project. Meanwhile, the transmission line and structures tend to be partially to completely screened from resources set further away due to the development and vegetation patterns in the area. Because the transmission line is to be rebuilt with replacement structures generally in the same locations and the same or only minimal increases in height, there will not be a substantial, or in most cases perceptible change in visibility as a result of the Partial Rebuild Project. It is therefore Dutton's opinion that based upon the definition of impacts above, the proposed Partial Rebuild Project will have no more than a minimal impact on any architectural resources that are designated an NHL, listed in the NRHP, or determined eligible or potentially eligible for listing.

Table 4. Previously Recorded Architectural Resources Considered under the Stage I Pre-Application Guidelines

VDHR #	Resource Name	VDHR/NRHP Status	Distance to Centerline (Miles)	Impact
029-0410	Union Hills Historic District	NRHP-Eligible	Directly	Minimal
029-5006	Battery Hill Redoubt, Fort "A"	NRHP-Listed	~0.53	No Impact
029-5117	Blackburn's Ford Battlefield	NRHP-Eligible	~0.57	No Impact
076-0016	Signal Hill	NRHP-Listed	~0.74	Minimal
076-0061	Bennett School	NRHP-Eligible	~0.17	Minimal
076-0238	Orange and Alexandria Railroad Bridge Piers	NRHP-Listed	Directly Crossed	Minimal
076-5036	Bristoe Station Battlefield	Potentially NRHP-Eligible	Directly Crossed	Minimal
076-5080	Prince William County Courthouse	NRHP-Listed	~0.16	Minimal
076-5190	Second Battle of Manassas	Potentially NRHP-Eligible	Directly Crossed	Minimal
076-5335	First Battle of Manassas	Potentially NRHP-Eligible	Directly Crossed	Minimal
152-0001	Conner House	NRHP-Listed	~0.17	Minimal
152-5001	Louisiana Brigade Winter Camp	NRHP-Listed	~0.75	No Impact
155-0001	Liberia	NRHP-Listed	~0.74	No Impact
155-0010	Jennie Dean Memorial Site	NRHP-Listed	~0.06	Minimal
155-0021	Annaburg	NRHP-Listed	~0.28	Minimal
155-0107	Pickeral House	NRHP-Eligible	~0.13	No Impact
155-0141	Old Manassas Water Tower	NRHP-Listed	~0.16	Minimal
155-0161	Manassas Historic District	NRHP-Listed	Directly Crossed	Minimal
155-0162	Manassas Cemetery and Confederate Cemetery in Manassas	Potentially NRHP-Eligible	~0.03	Minimal
155-5002	Mayfield Fortification	NRHP-Listed	~0.17	Minimal

VDHR #	Resource Name	VDHR/NRHP Status	Distance to Centerline (Miles)	Impact
155-5020	Cannon Branch Fort	NRHP-Listed	~0.9	No Impact
194-0003	Clifton Historic District	NRHP-Listed	~0.47	No Impact

With regards to archaeology, discrete portions of the Partial Rebuild Project transmission line corridor have been subject to survey, although other portions have not been previously surveyed. As a result of previous survey, a total of 11 previously recorded sites are located directly within or adjacent to the transmission line corridor (within 100 feet of the centerline). Of these, one has been determined not eligible and the rest have not been formally evaluated. No archaeological field work was conducted as part of this effort and the previously recorded site within or adjacent to the transmission line corridor was not visited or assessed at this time. It is therefore Dutton's opinion that unsurveyed portions of the transmission line corridor be surveyed and identified sites be assessed for impacts.

Table 5. Previously Recorded Archeological Resources Considered under the Stage I Pre-Application Guidelines

VDHR #/ Description	VDHR/NRHP Status	Proximity to ROW	Impact
44FX0407/ prehistoric unknown	Not Evaluated	Directly Crossed	TBD
44FX0953/ early-woodland camp, 19th century earthworks	Not Evaluated	Directly Crossed	TBD
44FX1737/ middle-archaic camp	Not Evaluated	Directly Crossed	TBD
44FX1852/ prehistoric unknown, 19th century road trace	Not Evaluated	Adjacent	TBD
44FX1885/ 19th century gold mine and road	Not Evaluated	Directly Crossed	TBD
44FX1886/ historic unknown	Not Evaluated	Adjacent	TBD
44FX1888/ 19th century bridge	Not Evaluated	Adjacent	TBD
44FX1892/ historic unknown	Not Evaluated	Directly Crossed	TBD
44FX2324/ 19th century other	Not Evaluated	Directly Crossed	TBD
44PW0512/ Civil War earthworks and 20th century school	Not Evaluated	Adjacent	TBD
44PW1087/ temporary camp	VDHR Staff: Not Eligible	Directly Crossed	TBD

J. Chesapeake Bay Preservation Areas

The portion of the Partial Rebuild Project located within Prince William County is subject to the Chesapeake Bay Preservation Act. However, construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt

from the Chesapeake Bay Preservation Act as stated in the exemption for public utilities, railroads, public roads, and facilities in 9 VAC 25-830-150. The Company will meet those conditions.

The Company sent a letter to DEQ in October 2022 soliciting comments regarding the proposed Partial Rebuild Project (see Attachment 2). The Company received a response from DEQ dated October 26, 2022, which provided comments regarding consistency with the provisions of the Chesapeake Bay Preservation Area Designation and Management Regulations. See Attachment 2.J.1.

K. Wildlife Resources

Relevant agency databases were reviewed and requests for comments from the USFWS, DWR, and DCR were submitted to determine if the proposed Partial Rebuild Project has the potential to affect any threatened or endangered species, as described in Section 2.G and included as Attachment 2.G.1. As discussed in Section 2.G and identified in Attachment 2.G.1, certain federal and state listed species were identified as potentially occurring in the Partial Rebuild Project area. The Company will coordinate with the USFWS, DWR, and DCR as appropriate to determine whether additional surveys are necessary and to minimize impacts on wildlife resources. Since the majority of the proposed route for the Partial Rebuild Project will be within existing right-of-way, existing easements, and Company-owned property, no loss of wildlife habitat is anticipated.

Consistent with existing regulations, Dominion Energy Virginia would further minimize potential effects by avoiding trees favorable for bat maternity roosting locations and cutting trees and vegetation during the time-of-year restriction from March 15-August 15 to avoid nesting birds and bat maternity roosting locations, to the extent practicable. However, the Company notes the USFWS has "up-listed" the NLEBs from threatened to endangered with the final rule being extended to March 31, 2023. As of April 1, 2023, the ESA 4(d) Rule will no longer be applicable to use on projects and it is anticipated that the interim guidance will be utilized until April 1, 2024.

L. Recreation, Agricultural and Forest Resources

The Partial Rebuild Project is expected to have minimal impacts on recreational, agricultural, and forest resources, as the majority of the proposed route will be within existing right-of-way, existing easements, and Company-owned property. While clearing for temporary construction access ingress and egress may be required, access routes will be restored to pre-existing conditions and allowed to revegetate. No permanent impacts to recreation, agricultural, or forest resources are expected to occur as a result of the Partial Rebuild Project.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Land that does

not meet the criteria for prime farmland can be considered "farmland of statewide importance". The criteria for defining and delineating farmland of statewide importance are determined by the Virginia Department of Agriculture and Consumer Services. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Other areas that are not identified as having national or statewide importance can be considered to be "farmland of local importance". This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance. A total of 8.32 acres of prime farmland and 13.85 acres of farmland of statewide importance occurs within the transmission line corridor encompassing the Partial Rebuild Project area. A total of 29.31 acres of the transmission line corridor are designated as not prime farmland. Soils appropriate for prime farmland exist within the Partial Rebuild Project area; however, none of these areas are zoned for agricultural purposes or available for agricultural use. A large majority of the Partial Rebuild Project area has been previously developed, and the remainder crosses through regional and local parks. Therefore, the Partial Rebuild Project is not expected to impact agricultural land.

The Fairfax County and Prince William County Comprehensive Plans identify agricultural and forestal districts, which are authorized by Va. Code § 15.2-4312. Fairfax County has established 43 Agricultural and Forestal Districts, and Prince William County has one Agricultural and Forestal District. The existing transmission line corridor does not traverse any parcels associated with Fairfax or Prince William County Agricultural and Forestal Districts. The closest parcel associated with the Prince William County Agricultural and Forestal District, AFD91-1, is located approximately 4.4 miles southwest from the western end of the Partial Rebuild Project, and the closest parcel associated with a Fairfax County Agricultural and Forestal District is located approximately 0.81 mile southeast of the Clifton Substation.

The Partial Rebuild Project does not cross any federal or state, game preserves, Wildlife Management Areas, or Virginia Outdoors Foundation ("VOF") conservation easements.

From Structure #2011/25 to Structure #2011/68 Line #2011 passes through mixed commercial, residential, and industrial use. From Structure #2011/25 to Structure #2011/15, the existing transmission line corridor crosses through Blooms Park, a local park owned and operated by the City of Manassas Park. From Structure #2011/15 to Structure #2011/5, the existing transmission line corridor passes through Northern Virginia Regional Park Authority land, including 0.44 mile of Bull Run Regional Park, and Fairfax County Park Authority land, including 0.69 mile of Johnny Moore Stream Valley Park. The existing transmission line corridor also intersects a small portion of Hemlock Overlook Regional Park, managed by the Northern Virginia Regional Park Authority, between Structures #2011/14 and #2011/15, and runs parallel to the northern border of the Hemlock Overlook Regional Park for

approximately 1.44 miles. No recreational facilities such as trails, picnic areas, or camping areas are located within the existing transmission line corridor that crosses these properties.

With an average structure height increase of five feet, it is anticipated that visibility of the proposed transmission line infrastructure will remain similar to the existing conditions, and the transmission line infrastructure will be rebuilt entirely within the existing transmission line corridor that crosses through these resources. However, due to topographical conditions within the existing transmission line corridor, temporary construction access routes through Bull Run Regional Park, Johnny Moore Stream Valley Park, and Blooms Park outside of the existing transmission line corridor will be required to access Structures #2011/6-20.

The Company held meetings with Mr. Mike DePue from the Fairfax County Park Authority and representatives from the City of Manassas Park on January 5, 2023, and with representatives from the Northern Virginia Regional Park Authority on January 24, 2023, to discuss the proposed Partial Rebuild Project, and, more specifically, conduct an in-field review of the transmission line corridor and potential construction access routes within Bull Run Regional Park, Johnny Moore Stream Valley Park, and Blooms Park. The Company will continue to work with Manassas Park, the Fairfax County Park Authority, and the Northern Virginia Regional Park Authority to obtain the necessary approvals to construct temporary access routes through these properties.

Additionally, two park facilities managed by the Manassas Park Department Parks and Recreation Department, including Signal Hill Park and the Blooms Hill Community Center, one park facility managed by the Manassas Department of Parks and Recreation, including the Bennett School Local Park, and one park facility managed by the Fairfax County Parks Authority, including Clifton Park, are located within one mile of the Partial Rebuild Project transmission line corridor. Due to distance from the Partial Rebuild Project transmission line corridor and the existing conditions adjacent to the project corridor, no permanent impacts to these parks or their viewshed are anticipated to occur.

The Virginia Scenic Rivers Act seeks to identify, designate, and protect rivers and streams that possess outstanding scenic, recreational, historic, and natural characteristics of statewide significance for future generations. The Partial Rebuild Project crosses over Bull Run, a state scenic river, near the western border of Bull Run Regional Park, between Structures #2011/14 and #2011/15. With an average structure height increase of five feet it is anticipated that visibility of the proposed transmission line infrastructure will remain similar to the existing conditions, and the transmission line infrastructure will be rebuilt entirely within the existing transmission line corridor that crosses Bull Run. As such, the proposed Partial Rebuild Project will pose no more than minimal visual impacts to this resource.

The Partial Rebuild Project does not overlap with or come into close proximity with any scenic byways.

Under the Virginia Open-Space Land Act, any public body can acquire title or rights to real property to provide means of preservation of open-space land. Such conservation easements must be held for no less than five years in duration and can be held in perpetuity. No conservation easements are located within or directly adjacent (within 100 feet) of the Partial Rebuild Project transmission line corridor; however, five VDHR conservation easements, one conservation easement managed by the Northern Virginia Conservation Trust, and one non-profit fee simple holding easement managed by the Audubon Naturalist Society are located within one mile of the Partial Rebuild Project. Due to the distance from the existing transmission line corridor, the Partial Rebuild Project is not anticipated to have any direct impacts to these conservation easements. With an average structure height increase of five feet, it is anticipated that visibility of the proposed transmission line infrastructure will remain similar to the existing conditions, and the majority of the Partial Rebuild Project will be rebuilt within existing right-of-way, existing easements, and Company-owned property, which are located within the vicinity of these conservation easements. As such, the Partial Rebuild Project is anticipated to pose no more than minimal visual impacts to these easements. The table below lists all easements within one mile of the centerline of the Partial Rebuild Project.

Table 6. Conservation easements crossed by and within 1.0-mile of the Partial Rebuild Project transmission line corridor

Unit Name	Owner/Manager	Distance to Centerline (miles)
Cannon Branch Fort Site (VDHR Easement ID #155-5020)	Department of Historic Resources	~0.77
Old Prince William County Courthouse (VDHR Easement ID #076-5080)	Department of Historic Resources and Prince William County Board of Supervisors	~0.16
Hopkins Candy Factory (VDHR Easement ID #155-0006)	Department of Historic Resources	~0.05
Mayfield Site (VDHR ID #155-5002)	Department of Historic Resources and City of Manassas Museum System	~0.08
Liberia (VDHR ID #155-0001)	Department of Historic Resources	~0.74
NVCT Conservation Easement (Popes Head Creek)	Northern Virginia Conservation Trust	~0.55
Webb Nature Sanctuary	Audubon Naturalist Society	~0.16

The existing transmission line corridor is currently maintained for operation of the existing transmission facilities. The scope of work assumes most of the work will occur within existing, cleared and maintained transmission line corridor and areas

previously cleared for the development of the Clifton and Cannon Branch Substations, and nearby industrial and commercial developments. Based on existing conditions, minimal tree clearing would be required from Structures #2011/25-68 as these structures are positioned within a highly developed area along the Norfolk Southern Railroad. From Structures #2011/5-25, the Partial Rebuild Project will be rebuilt entirely within existing transmission line corridor that directly parallels the Norfolk Southern Railroad and is surrounded by forest land. No new right-of-way will be acquired within forest areas. However, due to topographical conditions within the existing transmission line corridor, temporary construction access routes through Bull Run Regional Park, Johnny Moore Stream Valley Park, and Blooms Park outside of the existing transmission line corridor will be required to access Structures #2011/6-20. Tree clearing may be required to support construction of the temporary access routes.

Trees and brush located within 100 feet of streams will be cleared by hand in accordance with the Company approved Erosion and Sediment Control specifications. Any tree along the transmission line corridor that is tall enough to endanger the conductors if it were to break at the stump or uproot and fall directly towards the conductors and exhibits signs or symptoms of disease or structural defect that make it an elevated risk for falling will be designated as a "danger tree" and may be removed. The Company's arborist will contact the property owner if possible before any danger trees are cut, except in emergency situations. The Company's Forestry Coordinator will field inspect the transmission line corridor and designate any danger trees present. Qualified contractors working in accordance with the Company's Electric Transmission specifications will perform all danger tree cutting.

The proposed Partial Rebuild Project is expected to have minimal temporary impacts on forest resources from construction of temporary access routes to Structures #2011/6-20, as the proposed Partial Rebuild Project is primarily located along the Norfolk Southern Railroad and on properties that have been previously cleared and maintained for existing facility operation and industrial, commercial, and residential developments.

In October 2022, the Company solicited DCR, VOF, the Fairfax County Park Authority, and the Northern Virginia Regional Park Authority for comments on the proposed Partial Rebuild Project (see Attachment 2). In an email dated October 31, 2022, the Company received a response from VOF regarding the Partial Rebuild Project, in which the VOF noted that there are not any existing or proposed VOF open space easements within the vicinity of the Partial Rebuild Project. A copy of this response is included as Attachment 2.L.1.

M. Use of Pesticides and Herbicides

Of the techniques available, selective foliar is the preferred method of herbicide application. The Company typically maintains transmission line right-of-way by means of selective, low volume applications of EPA approved, non-restricted use herbicides. The goal of this method is to exclude tall growing brush species from the

right-of-way by establishing early successional plant communities of native grasses, forbs, and low growing woody vegetation. "Selective" application means the Company sprays only the undesirable plant species (as opposed to broadcast applications). "Low volume" application means the Company uses only the volume of herbicide necessary to remove the selected plant species. The mixture of herbicides used varies from one cycle to the next to avoid the development of resistance by the targeted plants. There are four means of dispersal available to the Company, including by-hand application, backpack, fixed nozzle-radiarc, and aerial. Very little right-of-way maintenance incorporates aerial equipment. The Company uses licensed contractors to perform this work that are either certified applicators or registered technicians in the Commonwealth of Virginia.

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

Additionally, based on a discussion between Company and DCR-DNH representatives in August 2022 and again in February 2023, the Company is continuing to review its Integrated Vegetation Management Plan ("IVMP") for application to both woody and herbaceous species, based on the species list available on the DCR website. The Company continues to work to provide DCR an addendum to the IVMP, which further explains how the Company's operations and maintenance Forestry program addresses invasive species. The Company is actively compiling an addendum draft to provide to DCR for review and continued discussions. Once all discussions are complete and the addendum is final, the Company will report on the results of its communications with DCR in future transmission certificate of public convenience and necessity filings.[5]

N. Geology and Mineral Resources

The Partial Rebuild Project is located in the Piedmont physiographic province of Virginia, whose geology consists of a series of igneous and metamorphic rocks. According to the Virginia Energy Interactive Geologic Map, the proposed Partial Rebuild Project consists primarily of sandstone, siltstone, schist, meta-argillite, and melange. According to the USGS topographic maps and aerial imagery, there are no active mines or stone quarries within the limits of the proposed Partial Rebuild Project. A search of the Virginia Energy online map confirms there are no active

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5

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

mines within the Partial Rebuild Project transmission line corridor. There is one inactive mine (the Manassas #1 Mine) located directly southwest of Structure #2011/68, which was previously operating under Mineral Mining Permit No. 05677AA prior to release of the permit. The coordinates of this mine are provided in the table below.

The Manassas #1 Mine and associated facilities were located on property to the south and east of the proposed Partial Rebuild Project. The property on which the mine was previously located has been reclaimed and developed for the construction/operation of the Winters Branch Substation and industrial and commercial facilities. Construction of these facilities is ongoing.

The Partial Rebuild Project is located within a cleared and maintained transmission line corridor, and no active mines are located within or adjacent to the transmission line corridor. As such, the Partial Rebuild Project will not negatively affect the geology, any mineral resources, or the identified mines.

Table 7. Summary of active and inactive mines within a 1.0-mile radius of the Partial Rebuild Project

Mine Name	Permit Number	Status	Latitude	Longitude
Manassas #1	05677AA	Inactive	38.736621	-77.507644

O. Transportation Infrastructure

The proposed route for the Partial Rebuild Project is located within an approximately 7.25-mile existing transmission line corridor, which includes the 230 kV Line #2011. The existing transmission line corridor for the proposed route of the Partial Rebuild Project originates at Structure #2011/68, one span south of the Cannon Branch Substation, which is located directly south of Foster Drive in Manassas, continues east-northeast for approximately 5.17 miles through the Cities of Manassas and Manassas Park paralleling the Norfolk Southern Railroad to the Prince William County and Fairfax County line. From this point, the Partial Rebuild Project continues easterly along the Norfolk Southern Railroad for approximately 1.76 miles to Structure #2011/3 in Fairfax County before turning north and terminating at the Clifton Substation, which is located at the end of Clifton Creek Drive in Fairfax County.

The Partial Rebuild Project crosses three major roads in Manassas, including Wellington Road, Grant Avenue, and Liberia Avenue, one minor road in Manassas: Fairview Avenue, and one major road in Manassas Park: Manassas Drive, and parallels Prince William Street, a minor road in Manassas, from Structure #2011/46A to #2011/51 for approximately 0.34 mile. The Company plans to apply for land use permits from the Virginia Department of Transportation ("VDOT") and use of right-of-way permits from the Cities of Manassas and Manassas Park for the aerial crossings of VDOT and municipality-maintained roads and any construction entrances from rights-of-way. All permits will be obtained prior to construction. In

October 2022, the Company solicited comments from the VDOT Northern Virginia District ("NVA"), the City of Manassas, and Manassas Park on the proposed Partial Rebuild Project. VDOT NVA followed up with the Company regarding the Partial Rebuild Project in two emails dated October 21, 2022, and October 26, 2022. See Attachment 2.O.1 and Attachment 2.O.2.

The Partial Rebuild Project directly parallels the Norfolk Southern Railroad for approximately 6.46 miles, primarily along the southern side of the railroad before crossing north over the railroad between Structure #2011/14 and #2011/15. In October 2022, the Company solicited comments from the Norfolk Southern Railroad regarding the proposed Partial Rebuild Project (see Attachment 2).

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

The FAA's website[6] was reviewed to identify airports within 10.0 nautical miles of the proposed Partial Rebuild Project. Based on this review, the following airports were identified:

- Manassas Regional Airport, approximately 1.6 miles west-southwest of Line #2011;
- Valley View Airport, approximately 4.4 miles southwest of Line #2011;
- Skyview Airport, approximately 7.3 miles west of Line #2011;
- Aden Field Airport, approximately 6.7 miles south of Line #2011;
- Breeden Airport, approximately 9.9 miles south-southwest of Line #2011;
- Maples Field Airport, approximately 10.0 miles south-southwest of Line #2011;
- Centreville Airport, approximately 7.5 miles north of Line #2011; and
- Washington Dulles International Airport, approximately 10.0 miles north of Line #2011.

Additionally, there are several heliports in the vicinity of the Partial Rebuild Project, including the following:

- IBM Building 110 Heliport, approximately 0.6 mile north of Line #2011;
- IBM Building 250 Heliport, approximately 1.1 miles north of Line #2011;
- Prince William Hospital Heliport, approximately 1.2 miles north of Line #2011;
- Fairfax County Police Heliport, approximately 5.2 miles north of Line #2011; and

[6] *See* https://oeaaa.faa.gov/oeaaa/external/portal.jsp.

- Inova Fair Oaks Hospital Heliport, approximately 7.2 miles north of Line #2011.

Based on a preliminary review, impacts to air navigation are not anticipated but FAA filings are required for construction cranes. The Company will submit a request for obstruction evaluation determinations for these structures. No structures exceed obstruction standards, but all require submission of Form 7460-2 Part 2 within five days of construction reaching its greatest height.

In an email dated October 20, 2022, the Company solicited comments from the FAA and the Virginia Department of Aviation ("DOAv") regarding the proposed Partial Rebuild Project. In an email dated October 21, 2022, the FAA stated that if the Partial Rebuild Project requires structures to be moved or raised, *and* it meets notice requirements in 14 CFR Part 77.9, notice will be required through the FAA's obstruction evaluation website (https://oeaaa.faa.gov). Also, any construction equipment that exceeds the height of the structure may need to be filed. The FAA's email response is included as Attachment 2.O.3 to the DEQ Supplement. In an email dated October 21, 2022, the DOAv responded that the Partial Rebuild Project's footprint is within 20,000 linear feet of the Manassas Regional Airport and therefore, a Form 7460 must be submitted to the FAA to determine if the proposed Partial Rebuild Project will constitute a hazard to air navigation. The DOAv email response is included as Attachment 2.O.4. The Company will file Form 7460 with the FAA as requested. The Company will work with the private entities as appropriate.

The Company will coordinate with the Cities of Manassas and Manassas Park, VDOT, DOAv, and the FAA as necessary to obtain all appropriate approvals. Anticipated transportation permits are presented in Table 8 below.

Table 8. Anticipated Transportation Permits

Activity	Permit	Agency
Work within VDOT right-of-way	Land Use Permit	Virginia Department of Transportation
Work within City of Manassas right-of-way	Use of Right-Of-Way Permit	City of Manassas Department of Planning and Development
Work within City of Manassas Park right-of-way	Use of Right-Of-Way Permit	City of Manassas Park Public Works Division
Work within Norfolk Southern Railroad right-of-way	Railroad Permit	Norfolk Southern Railroad
Construction within 5,000 feet of helipads associated buildings and Construction within 20,000 feet of an airport with a runway greater	Notice of Proposed Construction or Alteration	Federal Aviation Administration

Activity	Permit	Agency
than 3,200 feet in length		

P. Drinking Water Wells

As a general matter, water wells within 1,000 feet of the route of the Partial Rebuild Project may be outside of the transmission line corridor and located on private property. The Company does not have the ability or right to field mark the wells on private property. In August 2021, the Company contacted the Virginia Department of Health ("VDH"), Office of Drinking Water ("ODW") to propose a method of well protection, including plotting and calling out the wells on the Partial Rebuild Project's Erosion and Sediment Control Plan, to which VDH-ODW indicated that the Company's proposed method is reasonable. A copy of that correspondence is included as Attachment 2.P.1. The Company intends to follow this same approach in this proceeding, as it has in other cases, and will coordinate with VDH-ODW, as needed.

Attachments

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

October 20, 2022

BY EMAIL

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

To Whom it may Concern,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

The Partial Rebuild Project is needed to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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

Enclosed is a preliminary Project Overview Map depicting the proposed route and Partial Rebuild Project location. All final materials, including maps, will be available in the application filing to the Commission. If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact James P. Young at (804) 426-6648 or james.p.young@dominionenergy.com.

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

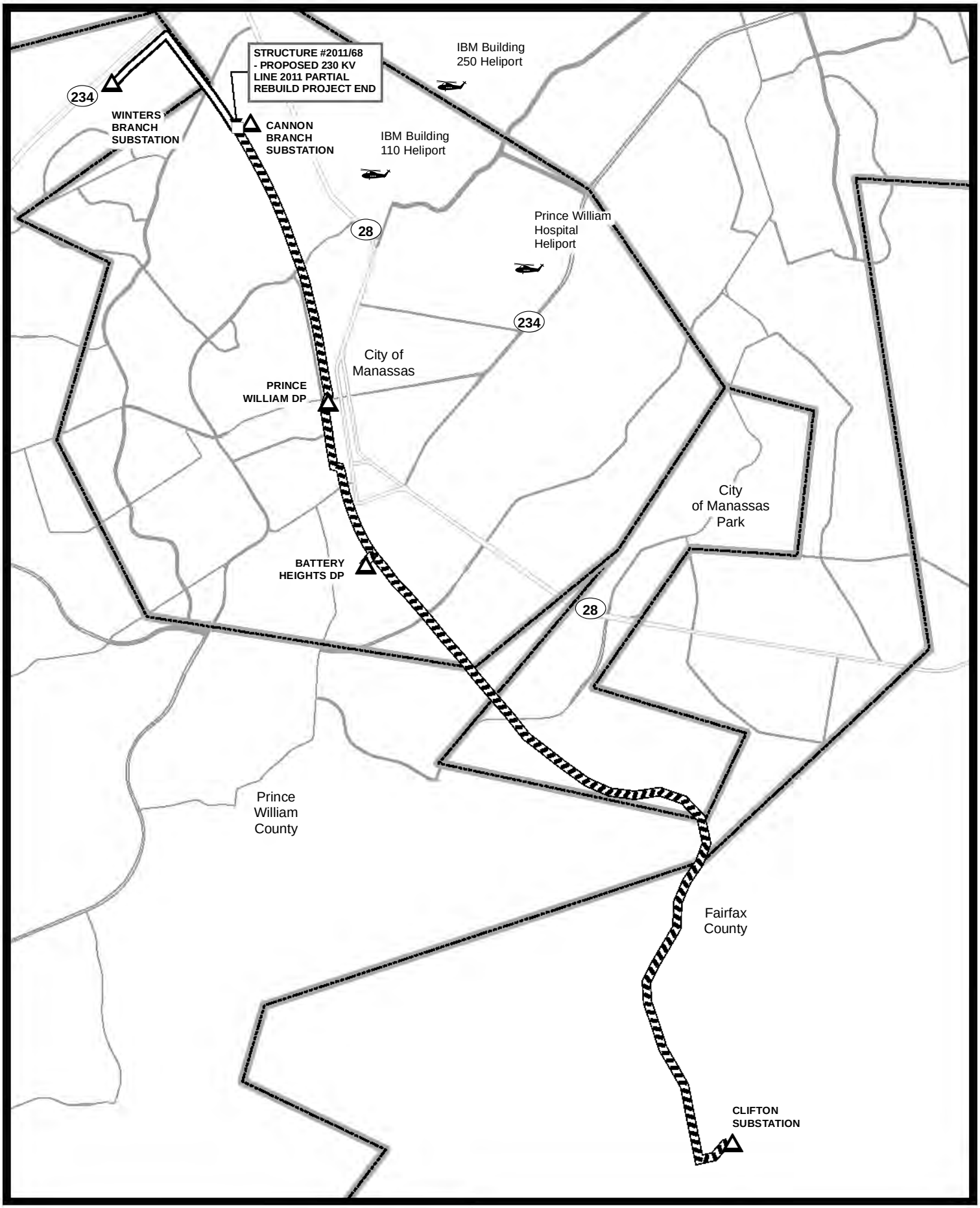
Sincerely,

Dominion Energy Virginia

Elizabeth L. Hester
Authorized Representative
Manager, Environmental Services

Attachment: Project Overview Map

PROJECT OVERVIEW MAP



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Dominion Energy

LEGEND

- EXISTING SUBSTATION/DP
- HELIPORT
- COUNTY/CITY LINES
- PROPOSED 230 KV LINE 2011 PARTIAL REBUILD
- APPROVED 230 KV LINE 2011 EXTENSION (CASE NO. PUR-2021-00291)

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

October 20, 2022

BY EMAIL

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

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Ms. Henicheck,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this segment of Line #2011.

The Partial Rebuild Project is needed to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation Reliability Standards.

The Company is preparing an application for a Certificate of Public Convenience and Necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). Pursuant to the July 2003 Memorandum Wetlands Impact Consultation between the Company and the Department of Environmental Quality (the "DEQ"), Dominion Energy Virginia is sending this letter to initiate consultation with the DEQ prior to filing an application for a CPCN from the Commission.

Resource Environmental Solutions (RES) conducted a wetland delineation of the study area to identify wetlands within the project area. The table below summarizes the wetlands and waterbodies identified within the proposed Partial Rebuild Project right-of-way.

Table 1: Summary of Wetland and Waterbody Occurrence along Partial Rebuild Project Route[a, b]

Total right-of-way Acres	Wetland and Waterbody type (acres)				
	PEM Emergent	PFO Forested	PSS Scrub-shrub	POW Open Water	Riverine Stream
51.5	1.23	0.26	0.09	0.60	0.66 (2,786 linear feet)

a *The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.*
b *Substation wetlands and waterbodies are included within each route rather than individually.*

The full Wetland Study will be submitted once finalized. Subsequently, a wetland delineation will be conducted and the limits of wetlands of other waters of the United States will be submitted to the U.S.

Army Corps of Engineers for confirmation.

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

Enclosed is a preliminary Project Overview Map depicting the proposed route and Partial Rebuild Project location. All final materials, including maps, will be available in the application filing to the Commission. If you would like to receive a GIS shapefile of the route to assist in your project review or if you have any questions, please do not hesitate to contact James P. Young at (804) 426-6648 or James.P.Young@dominionenergy.com.

The Company appreciates your assistance with this project review and looks forward to any additional information you may have to offer.

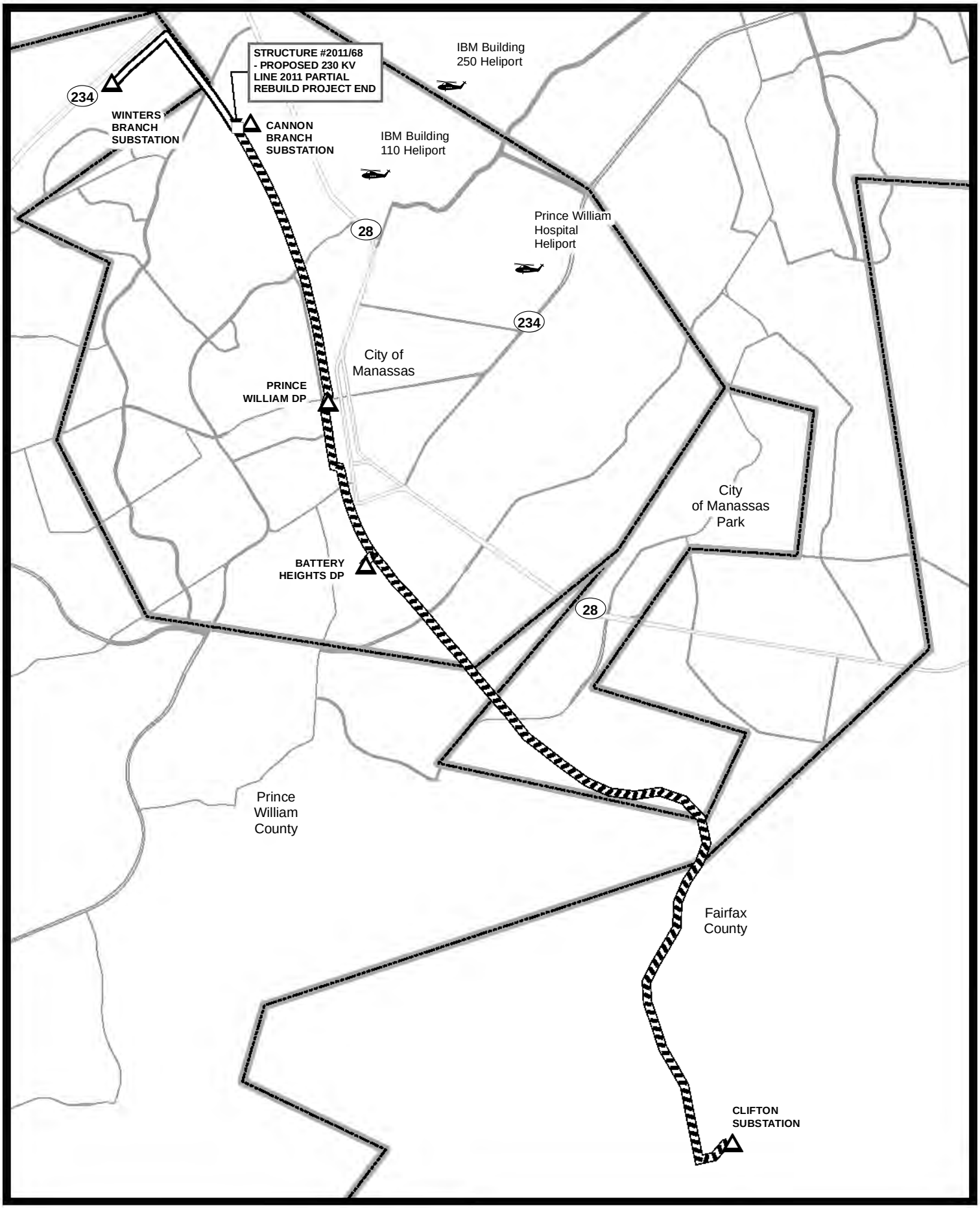
Sincerely,

Dominion Energy Virginia

Elizabeth L. Hester
Authorized Representative
Manager, Environmental

Attachment: Project Overview Map

PROJECT OVERVIEW MAP



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Dominion Energy

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- PROPOSED 230 KV LINE 2011 PARTIAL REBUILD
- APPROVED 230 KV LINE 2011 EXTENSION (CASE NO. PUR-2021-00291)

Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Ms. Jai Cole, Executive Director
Fairfax County Park Authority
12055 Government Center Parkway
Fairfax, Virginia 22035

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Ms. Cole,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

The Partial Rebuild Project is needed to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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

Enclosed is a preliminary Project Overview Map depicting the proposed route and Partial Rebuild Project location. All final materials, including maps, will be available in the application filing to the Commission. If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Craig R. Hurd at (804) 771-6489 or craig.r.hurd@dominionenergy.com.

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

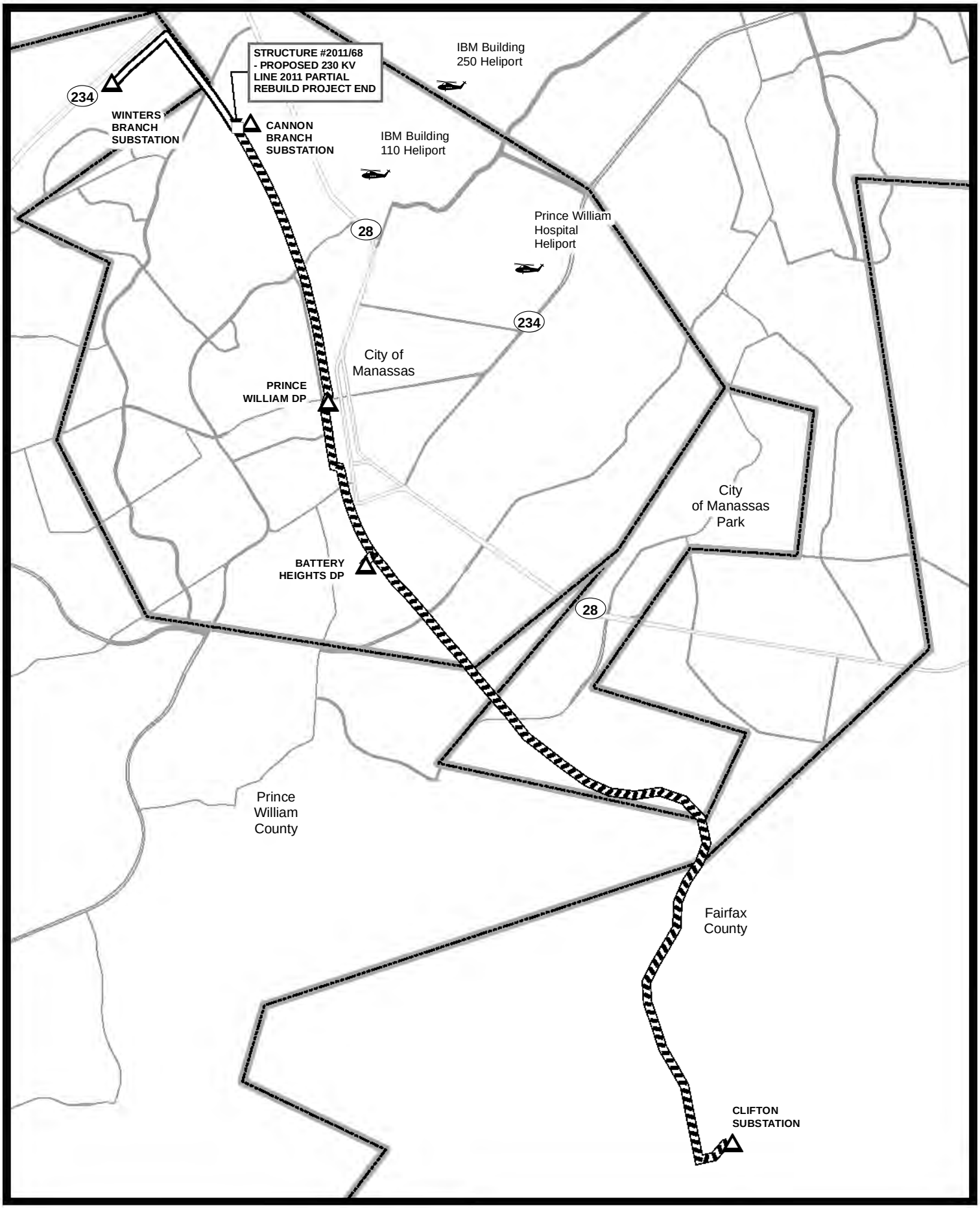
Sincerely,

Dominion Energy Virginia

Craig R. Hurd
Siting and Permitting

Attachment: Project Overview Map

PROJECT OVERVIEW MAP



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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Mr. Scott Denny
Virginia Department of Aviation
Airport Services Division
5702 Gulfstream Road
Richmond, VA 23250-2422

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Mr. Denny,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

The Partial Rebuild Project is needed to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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

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

Sincerely,

Dominion Energy Virginia

Craig R. Hurd
Siting and Permitting

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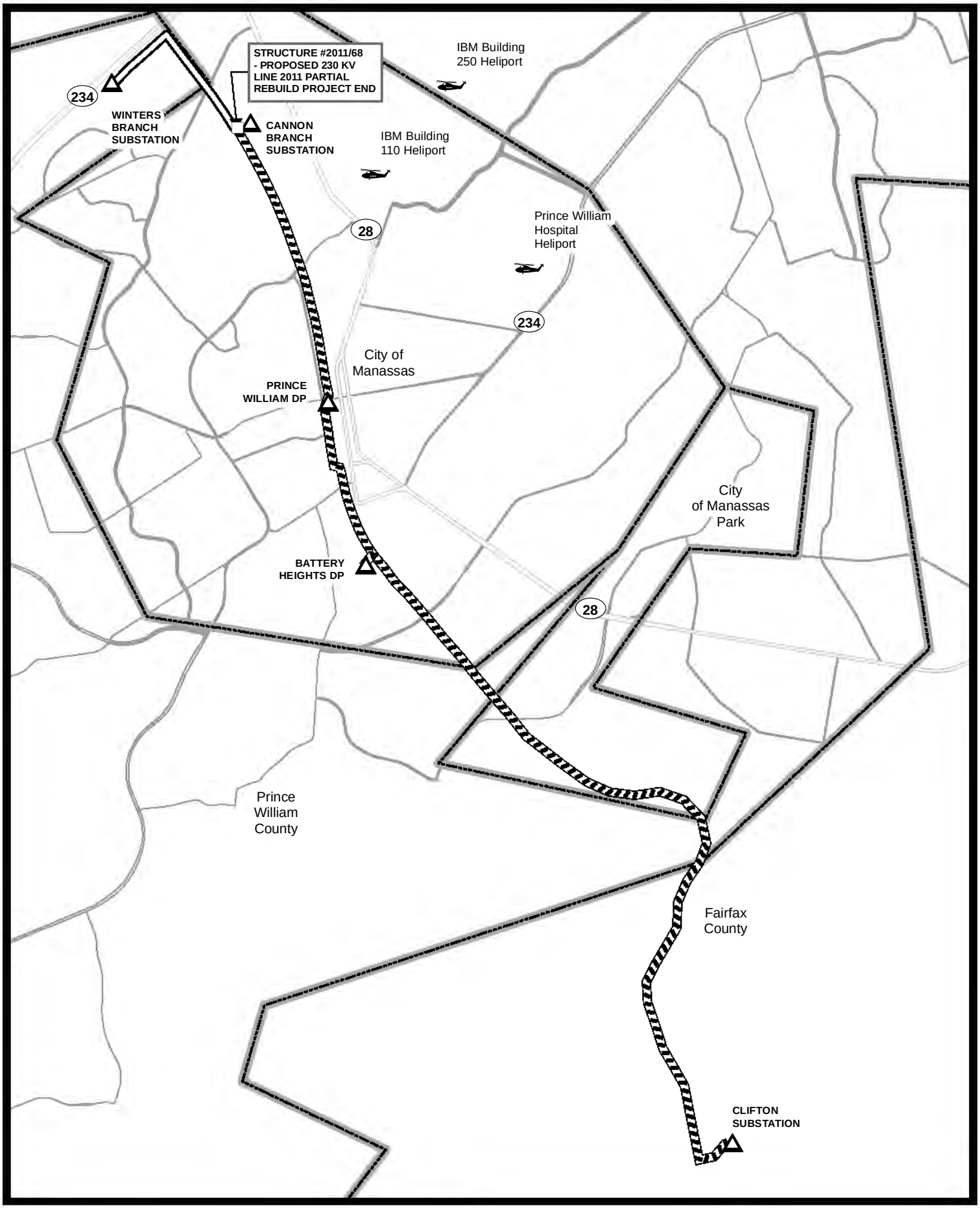

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Mr. Mike DePue, Land Manager
Northern Virginia Regional Park Authority
5400 Ox Road
Fairfax Station, VA 22039-7000

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Mr. DePue,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

The Partial Rebuild Project is needed to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation Reliability Standards.

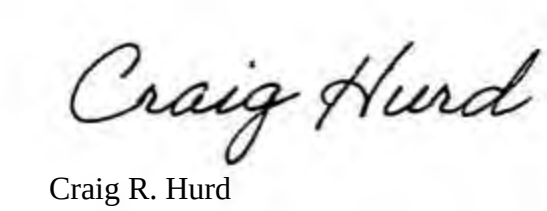
The Company is in the process of preparing an application for a certificate of public convenience and necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). At this time, in advance of filing an application for a CPCN from the Commission, the Company respectfully requests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

Enclosed is a preliminary Project Overview Map depicting the proposed route and Partial Rebuild Project location. All final materials, including maps, will be available in the application filing to the Commission. If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Craig R. Hurd at (804) 771-6489 or craig.r.hurd@dominionenergy.com.

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

Sincerely,

Dominion Energy Virginia



Craig R. Hurd
Siting and Permitting

Attachment: Project Overview Map

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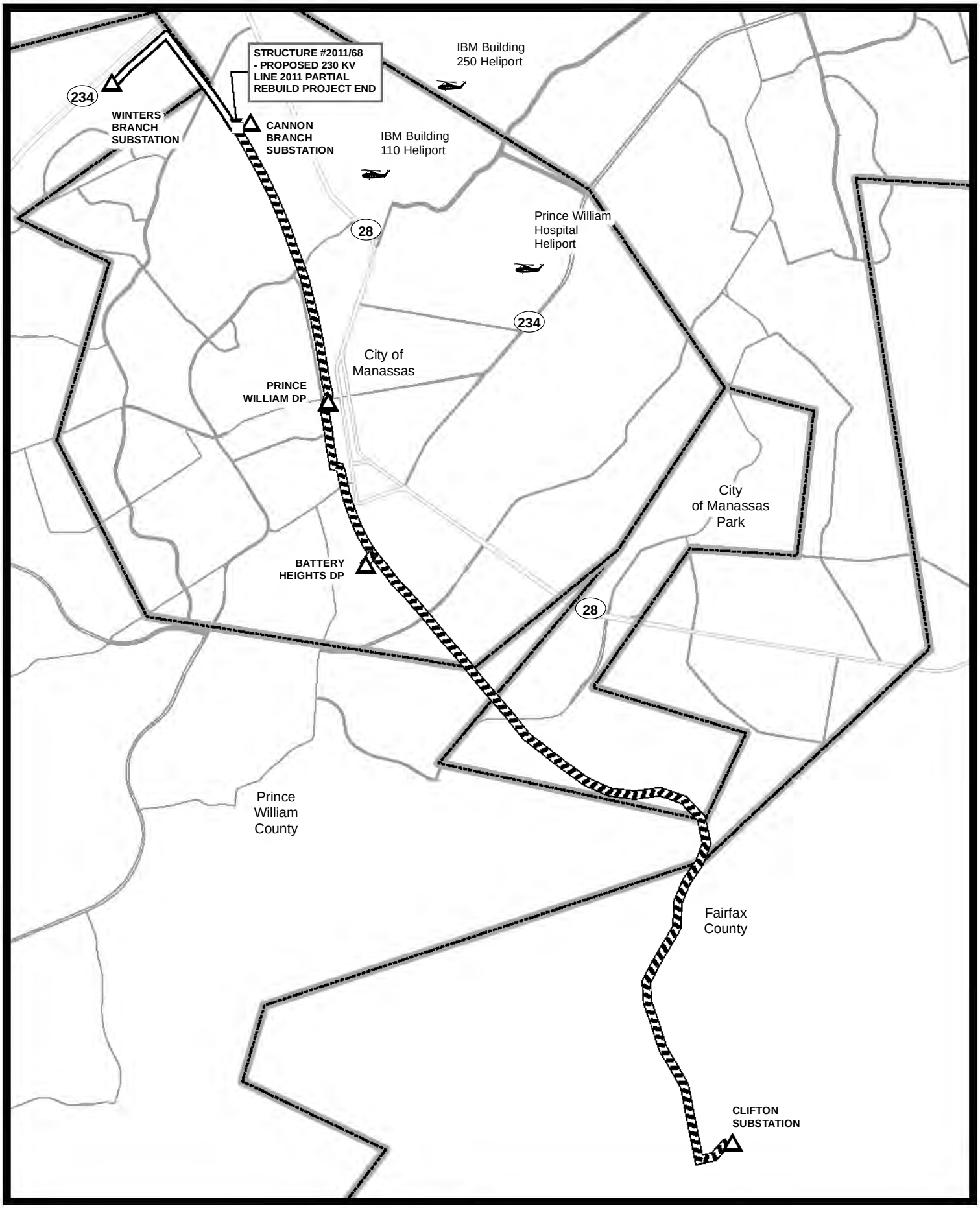

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Dominion Energy

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Mr. Mike Helvey, Manager
Federal Aviation Administration
FAA Eastern Regional Office, Obstruction Evaluation Group
800 Independence Ave, SW
Room 400 East
Washington, D.C. 20591

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Mr. Helvey,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

The Partial Rebuild Project is needed to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation Reliability Standards.

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

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

Sincerely,

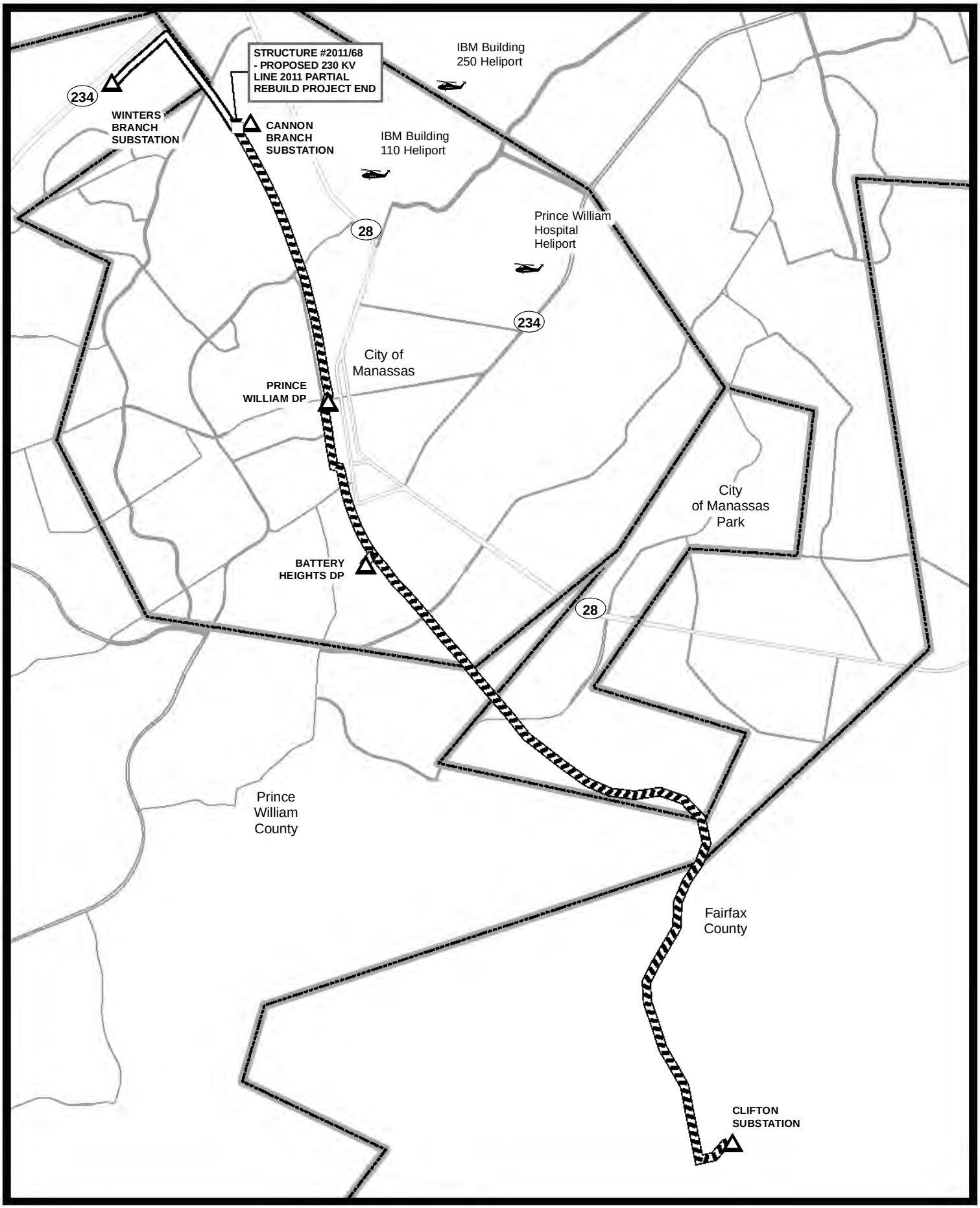
Dominion Energy Virginia

Craig Hurd

Craig R. Hurd
Siting and Permitting

Attachment: Project Overview Map

PROJECT OVERVIEW MAP



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Dominion Energy

LEGEND

- EXISTING SUBSTATION/DP
- HELIPORT
- COUNTY/CITY LINES
- PROPOSED 230 KV LINE 2011 PARTIAL REBUILD
- APPROVED 230 KV LINE 2011 EXTENSION (CASE NO. PUR-2021-00291)

Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Ms. Rebecca Horner, Acting Director of Planning
Prince William County Planning Office
5 County Complex Court, Suite 210
Prince William, Virginia 22192

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Ms. Horner,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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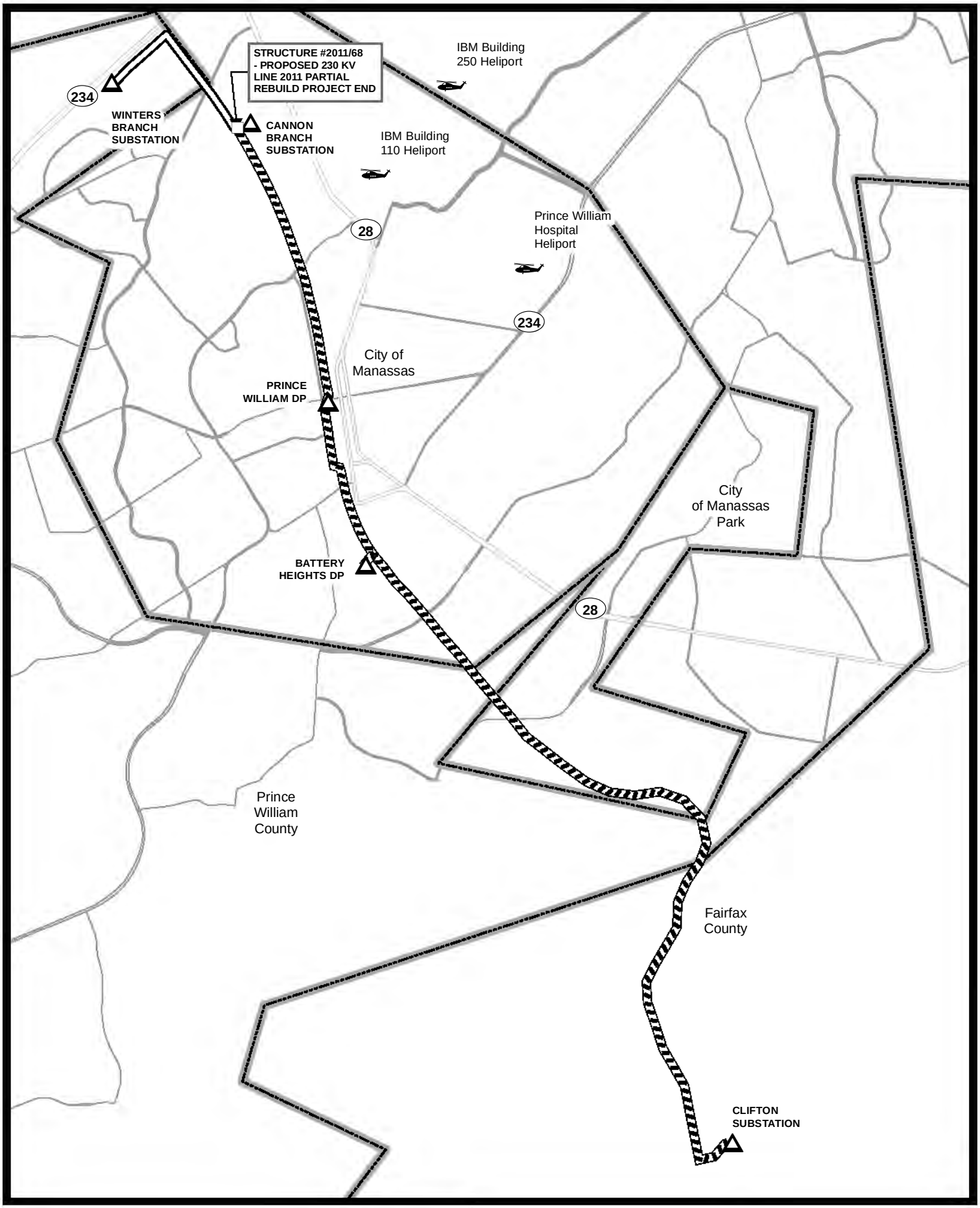

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Dominion Energy

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

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

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Ms. Little,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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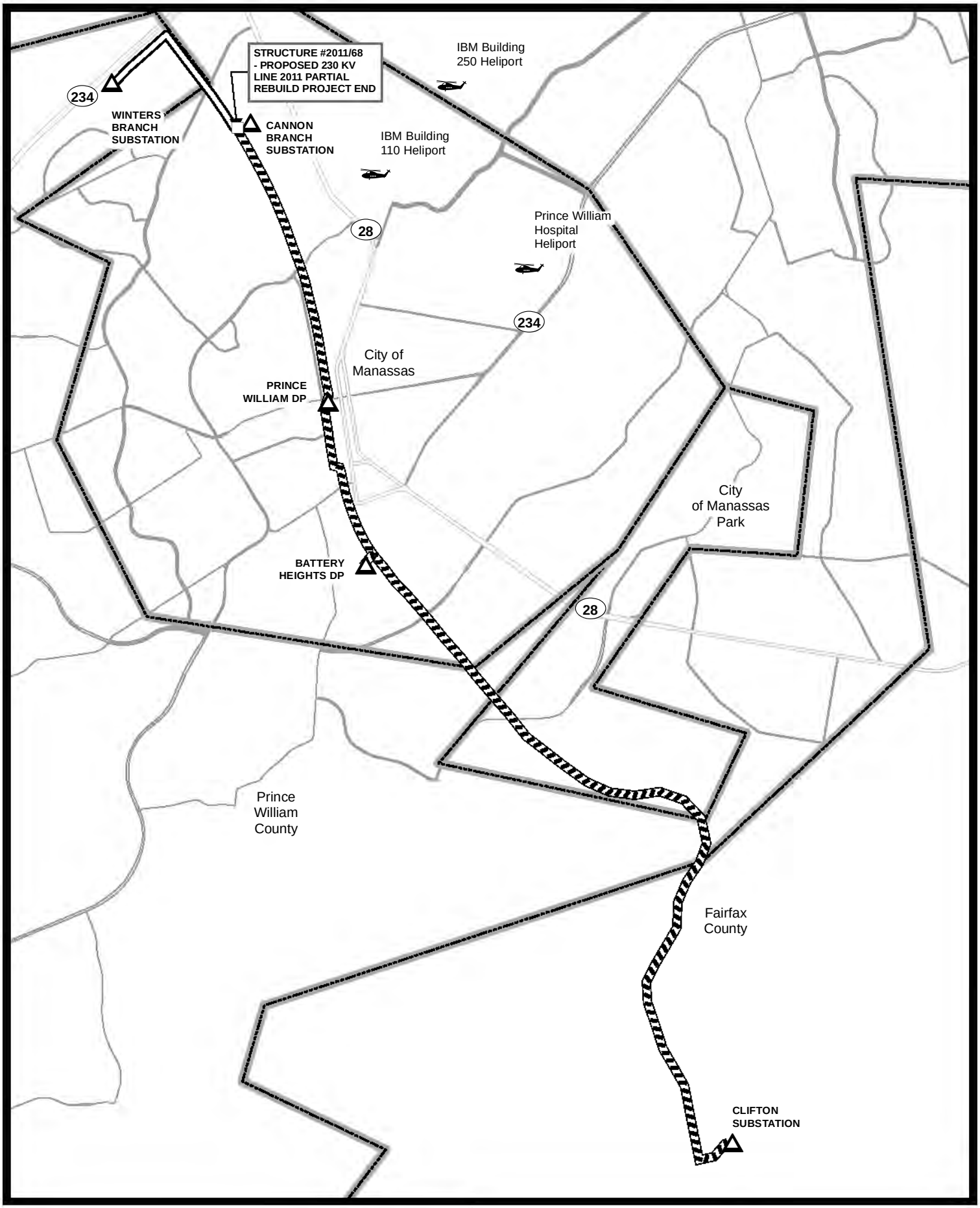

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

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

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Mr. Lynch,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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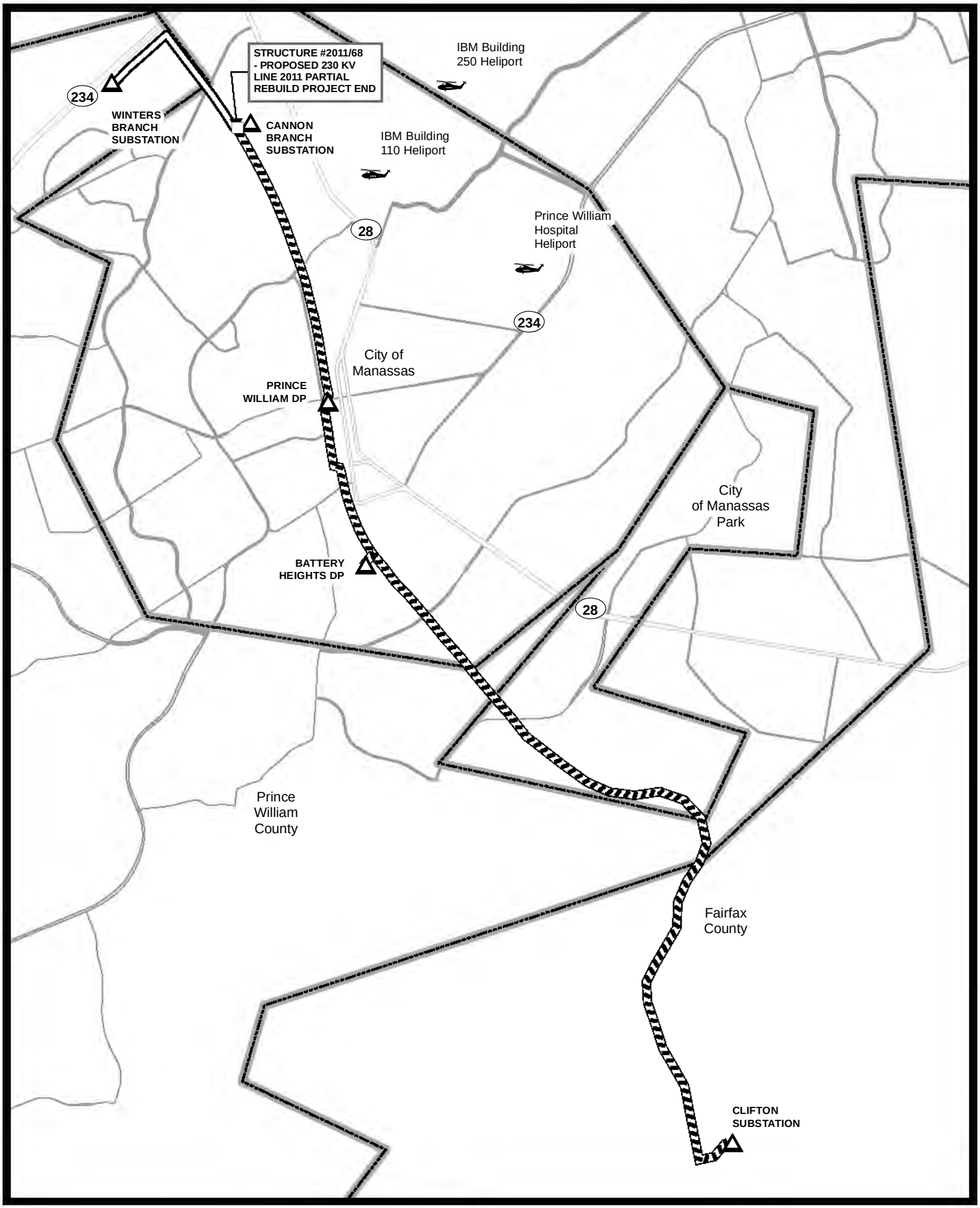

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

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

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Mr. Nolan,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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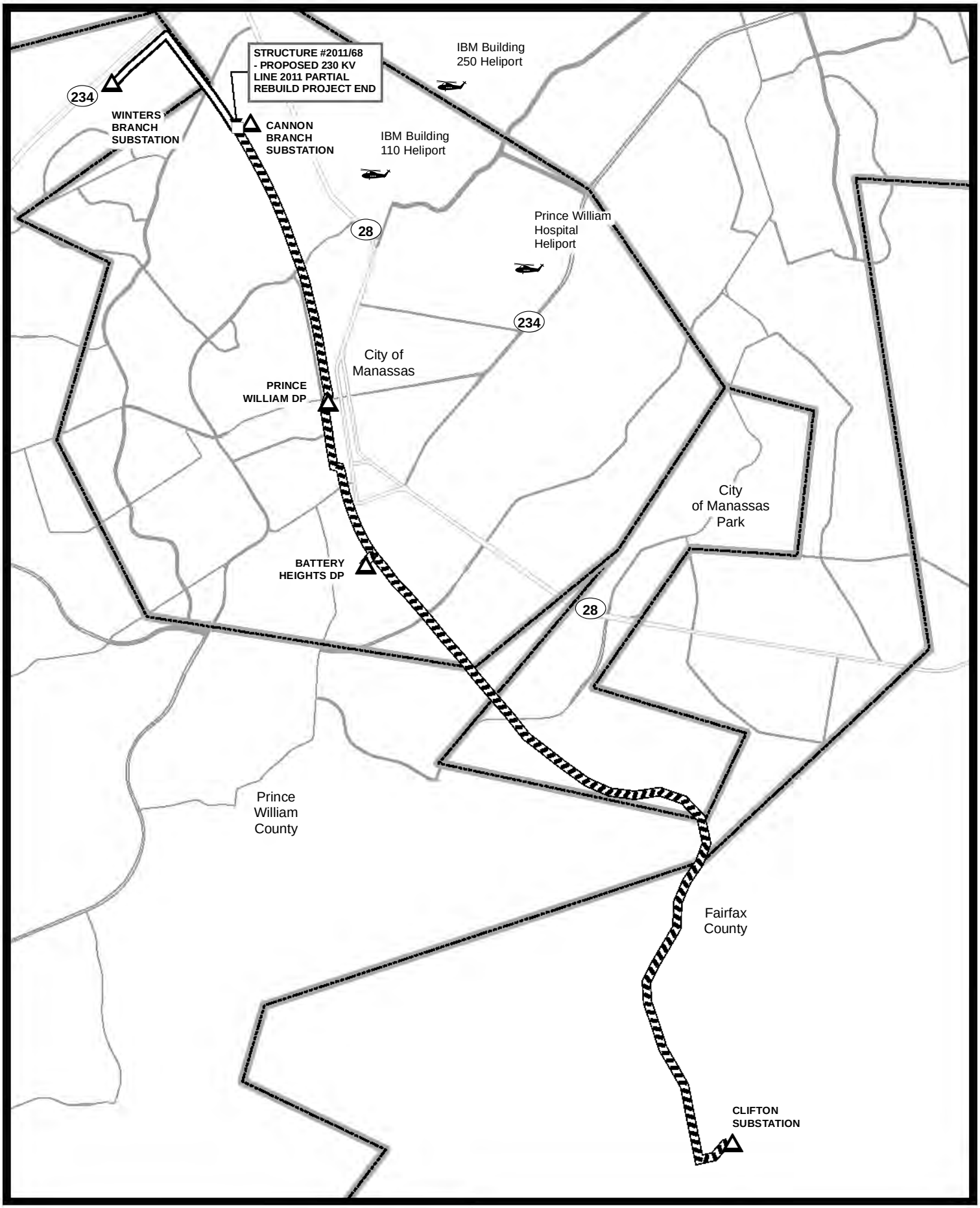

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Mr. Jason Shepard, Property Manager
Norfolk Southern Railroad
Roanoke Region
209 Shenandoah Ave. NE
Roanoke, Virginia 24016

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Mr. Shepard,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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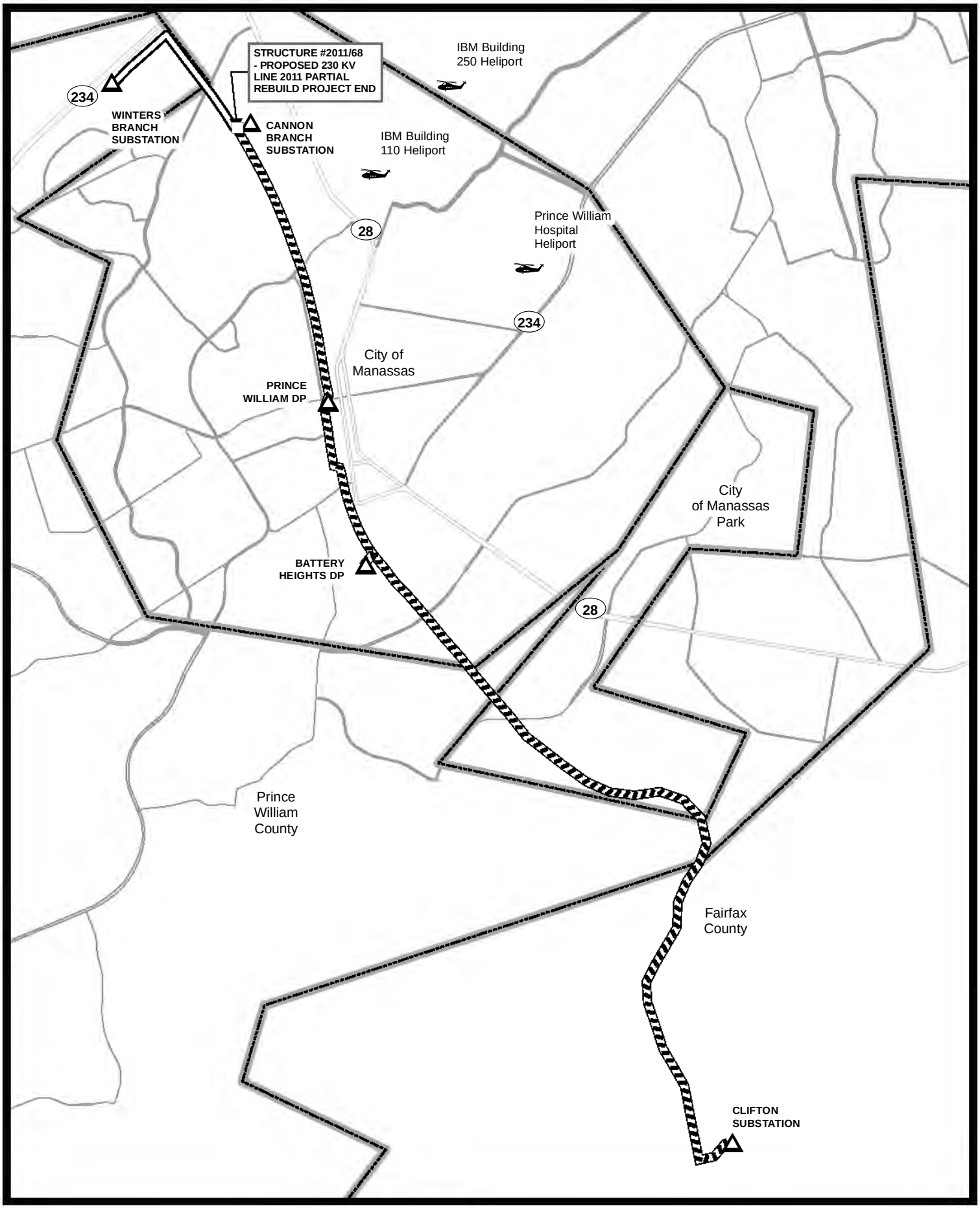

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

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

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Mr. Suliman,

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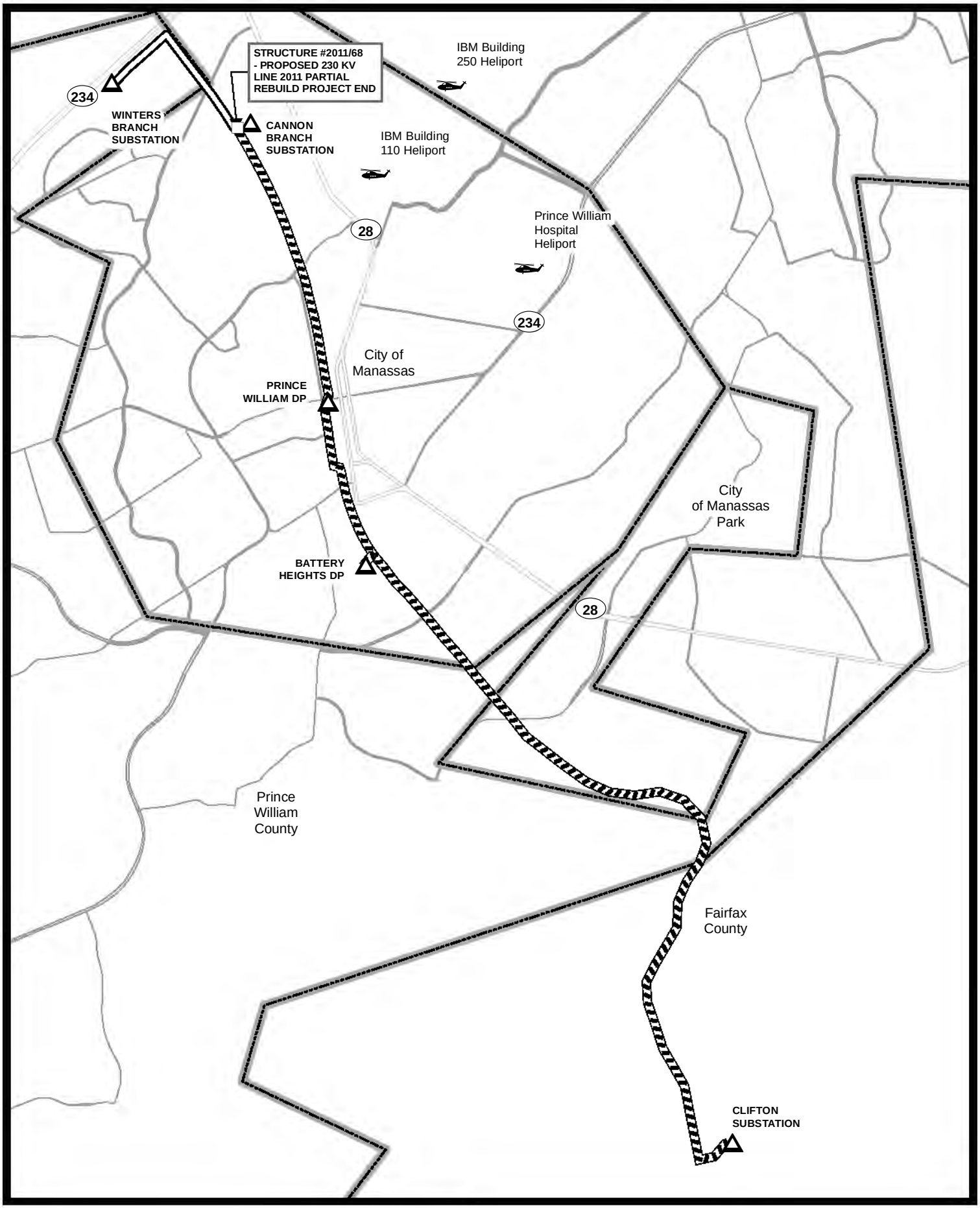

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Mr. Matt Arcieri, Director
City of Manassas Planning and Development
9027 Center Street
Manassas, Virginia 20110

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project Notice Pursuant to Va. Code § 15.2-2202

Dear Mr. Arcieri,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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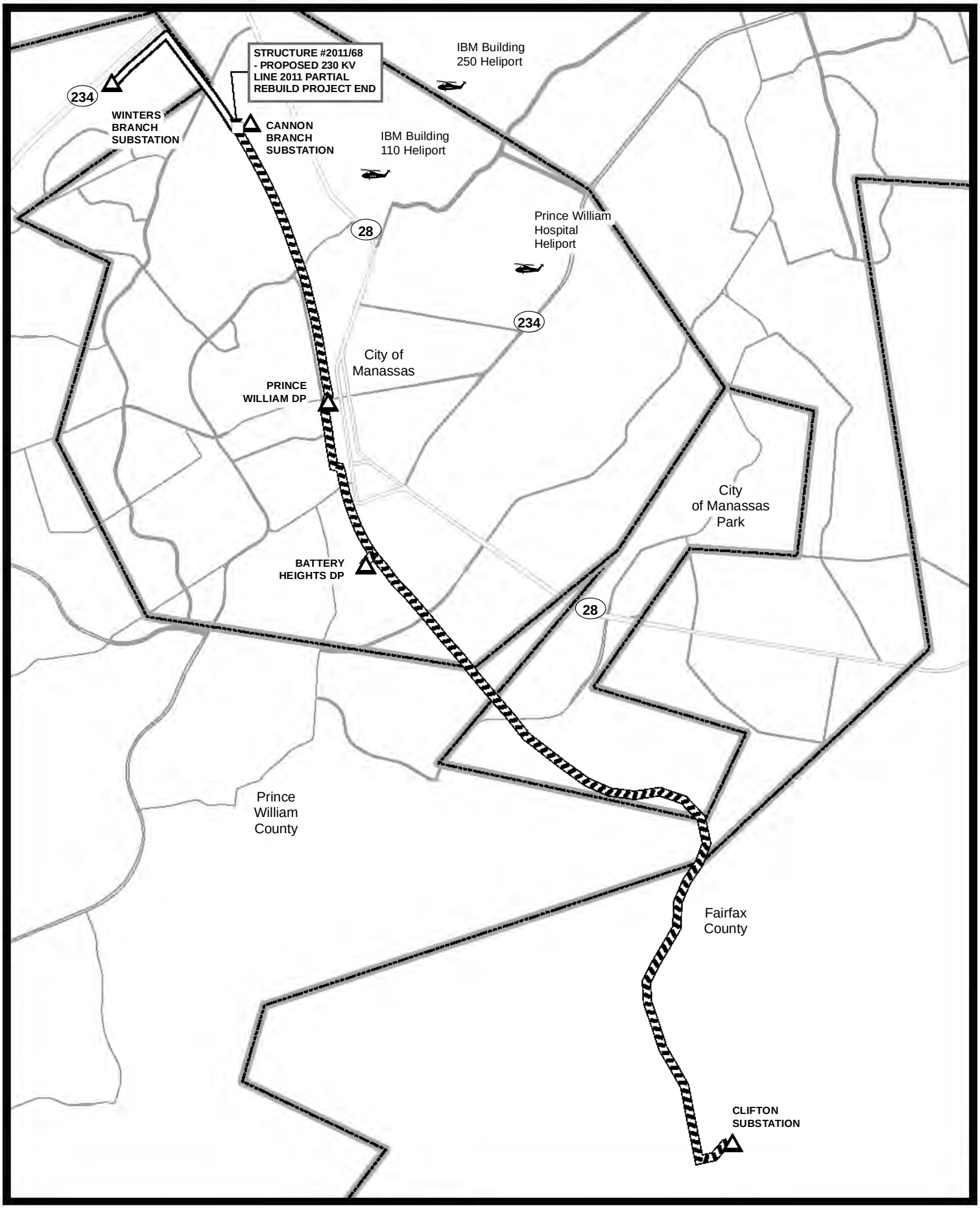

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Ms. Michelle Barry, Planning and Zoning Administrator
City of Manassas Park
Office of Planning and Development Services Division & City Assessors
9701 Manassas Drive
Manassas Park, Virginia 20111

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project
Notice Pursuant to Va. Code § 15.2-2202

Dear Ms. Barry,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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Sincerely,

Dominion Energy Virginia

Craig Hurd

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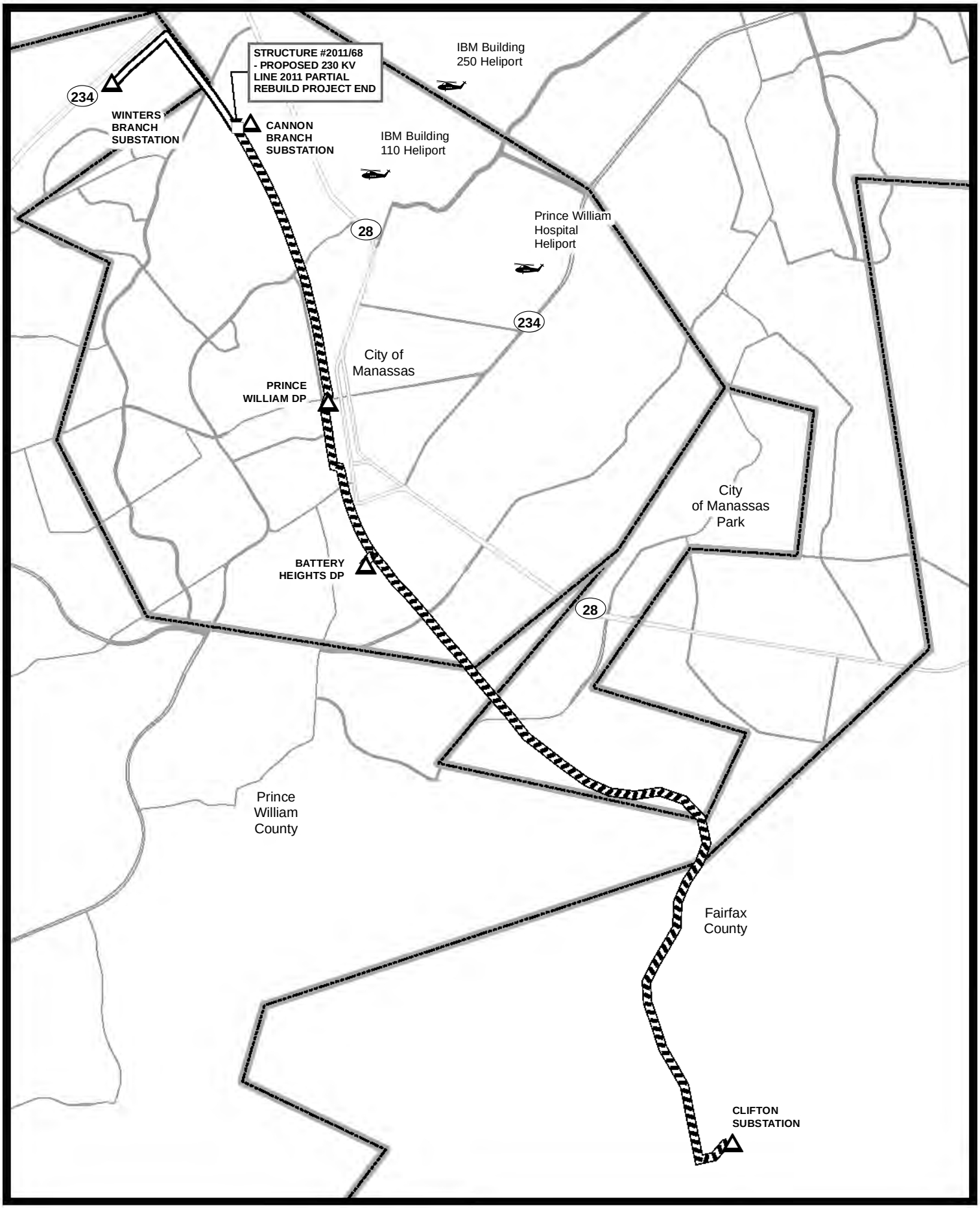

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Mr. Patrick Herrity, Springfield District Supervisor
Fairfax County Board of Supervisors
West Springfield Government Center
6140 Rolling Road
Springfield, VA 22152

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project Notice Pursuant to Va. Code § 15.2-2202

Dear Mr. Herrity,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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Dominion Energy Virginia

Craig Hurd

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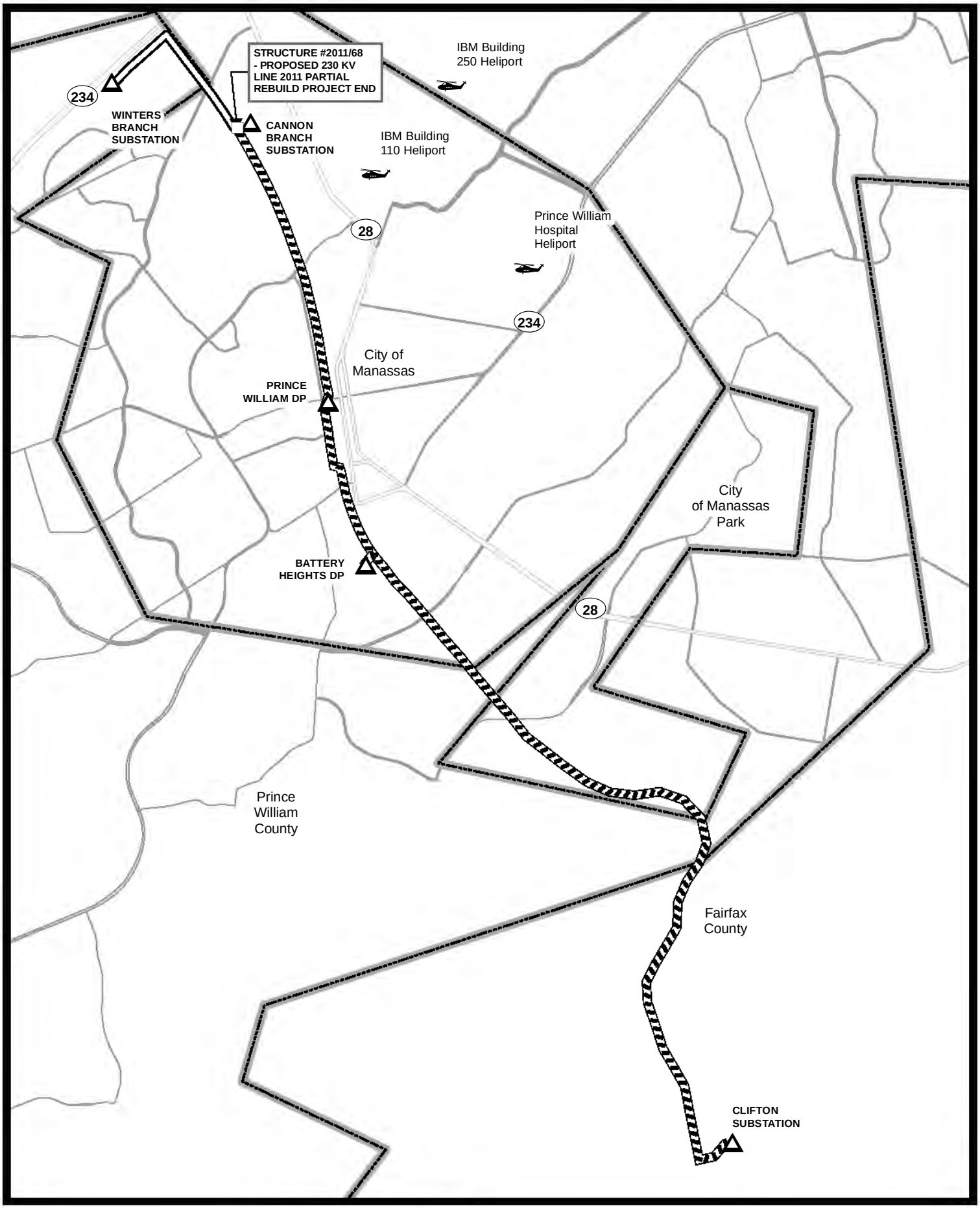

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Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Mr. Laszlo Palko, City Manager
City of Manassas Park
Office of the City Manager
100 Park Center Plaza
Manassas Park, VA 20111

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project Notice Pursuant to Va. Code § 15.2-2202

Dear Mr. Palko,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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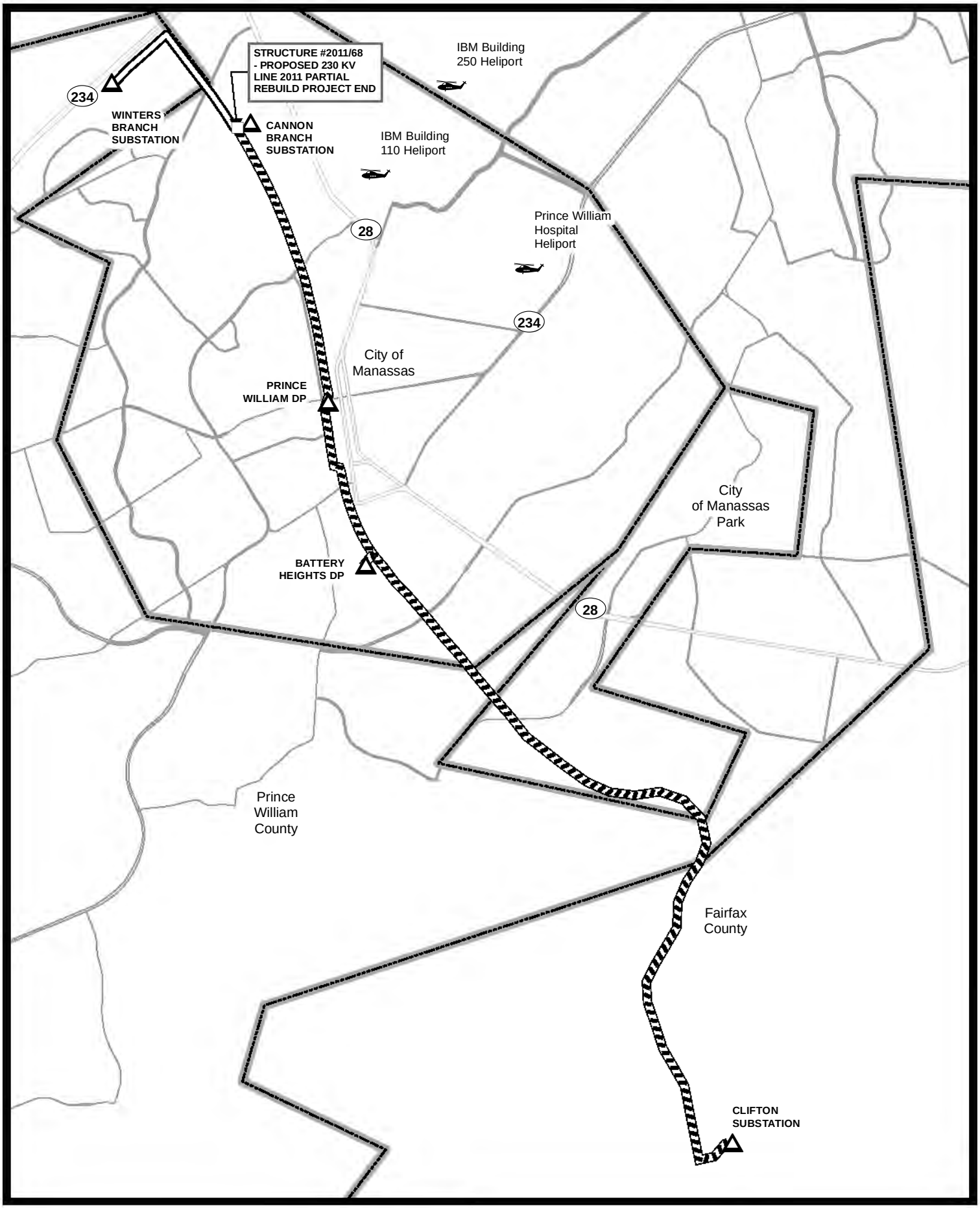
Dominion Energy Virginia

Craig R. Hurd
Siting and Permitting

Attachment: Project Overview Map

PROJECT OVERVIEW MAP



1 INCH = 3,600 FEET

0 3,600 7,200 FEET

Dominion Energy

LEGEND

- EXISTING SUBSTATION/DP
- HELIPORT
- COUNTY/CITY LINES
- PROPOSED 230 KV LINE 2011 PARTIAL REBUILD
- APPROVED 230 KV LINE 2011 EXTENSION (CASE NO. PUR-2021-00291)

Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Mr. William Patrick Pate, Manassas City Manager
City of Manassas Manager's Office
9027 Center Street
Manassas, Virginia 20110

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project Notice Pursuant to Va. Code § 15.2-2202

Dear Mr. Pate,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

The Partial Rebuild Project is needed to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation Reliability Standards.

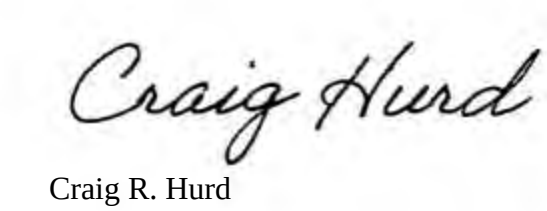
The Company is in the process of preparing an application for a certificate of public convenience and necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). At this time, in advance of filing an application for a CPCN from the Commission, the Company respectfully requests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

Enclosed is a preliminary Project Overview Map depicting the proposed route and Partial Rebuild Project location. All final materials, including maps, will be available in the application filing to the Commission. If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Craig R. Hurd at (804) 771-6489 or craig.r.hurd@dominionenergy.com.

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

Sincerely,

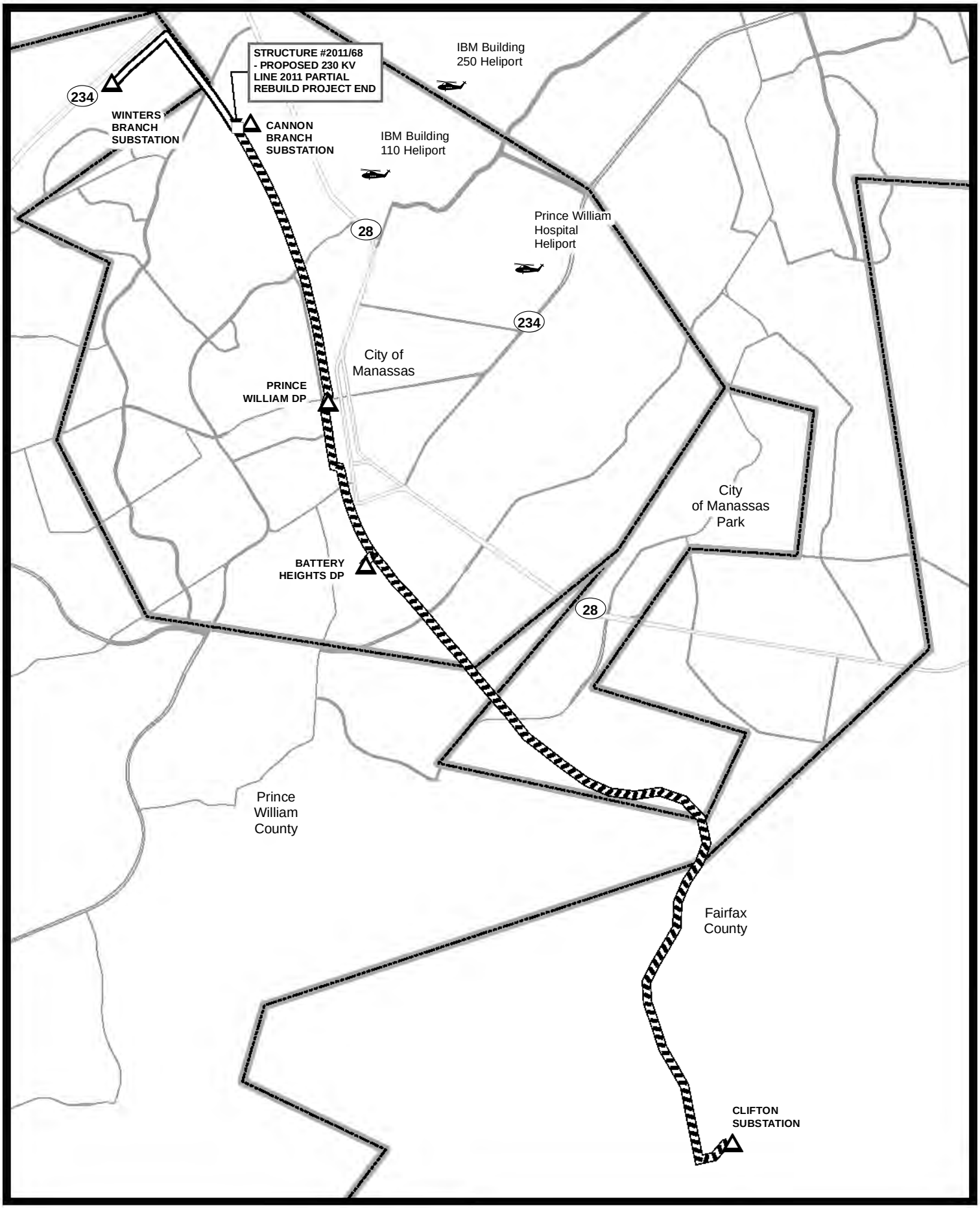
Dominion Energy Virginia



Craig R. Hurd
Siting and Permitting

Attachment: Project Overview Map

PROJECT OVERVIEW MAP



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Dominion Energy

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- PROPOSED 230 KV LINE 2011 PARTIAL REBUILD
- APPROVED 230 KV LINE 2011 EXTENSION (CASE NO. PUR-2021-00291)

Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Ms. Tracy Strunk, Director
Department of Development and Planning
12055 Government Center Parkway
Fairfax, Virginia 22035

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project Notice Pursuant to Va. Code § 15.2-2202

Dear Ms. Strunk,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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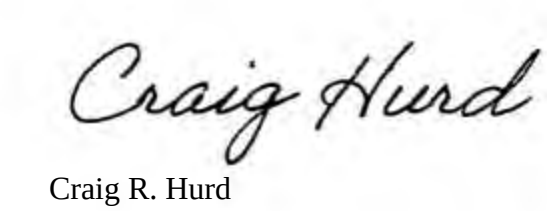
Dominion Energy Virginia



Craig R. Hurd
Siting and Permitting

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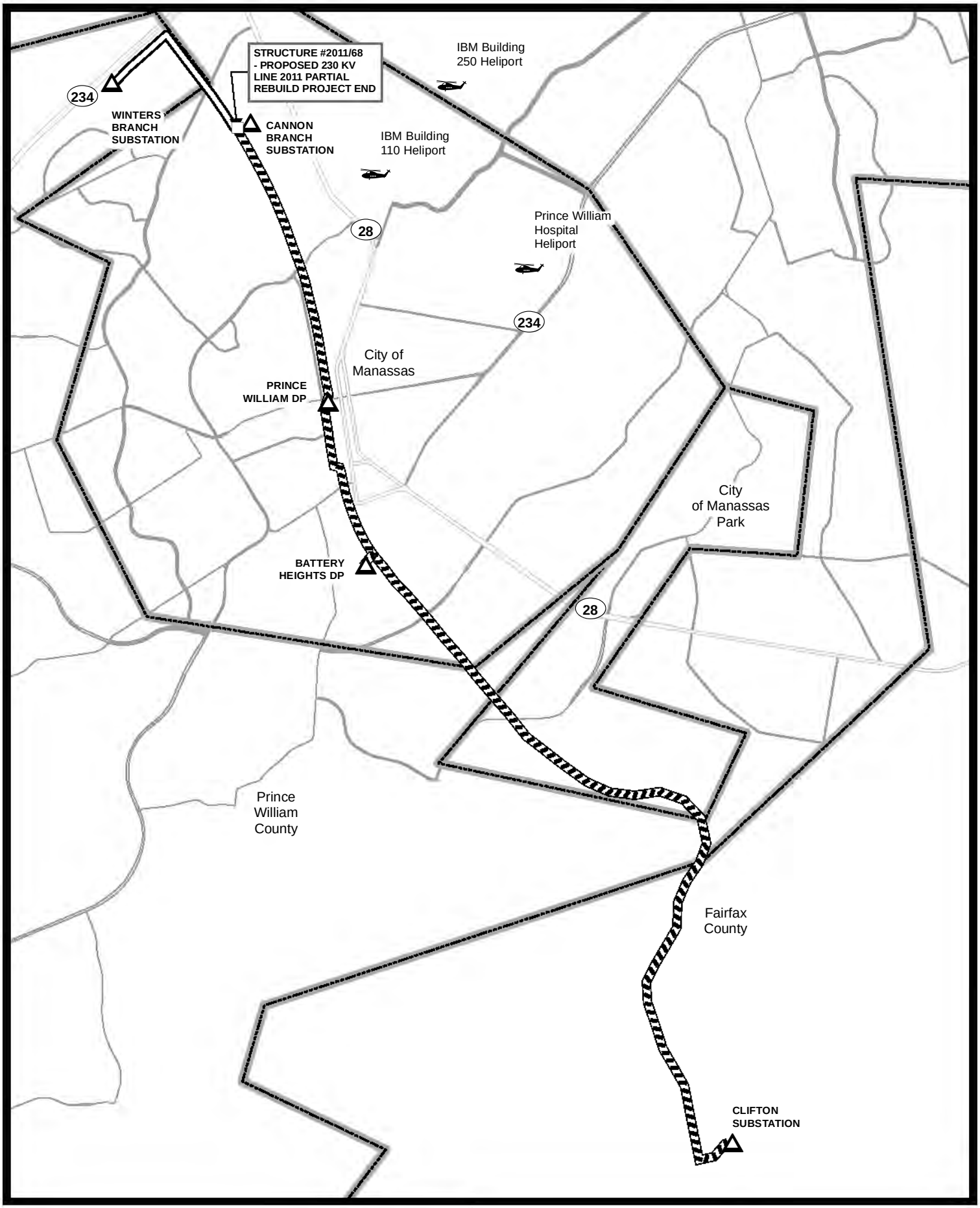

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Dominion Energy

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- APPROVED 230 KV LINE 2011 EXTENSION (CASE NO. PUR-2021-00291)

Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060
DominionEnergy.com

October 20, 2022

BY EMAIL

Ms. Yesli Vega, Coles District Supervisor
Prince William County Board of Supervisors
9400 Innovation Drive, Suite 130
Manassas, Virginia 20110

RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project Notice Pursuant to Va. Code § 15.2-2202

Dear Ms. Vega,

Dominion Energy Virginia (the "Company") is proposing to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 (the "Partial Rebuild Project") in the City of Manassas, Prince William County and Fairfax County, Virginia. Specifically, as part of the Partial Rebuild Project, the Company proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and Company-owned property. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

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

Sincerely,

Dominion Energy Virginia

Craig R. Hurd
Siting and Permitting

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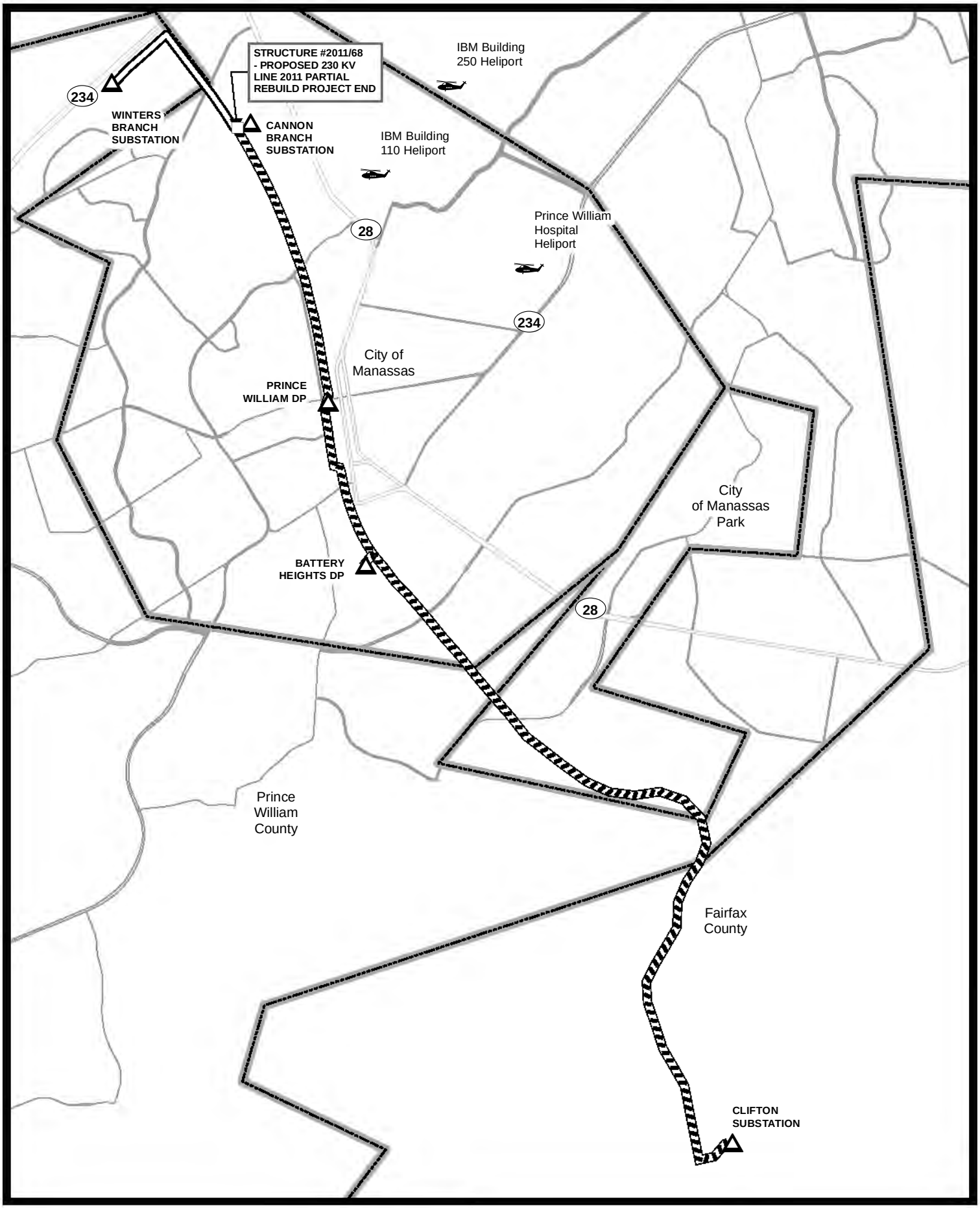

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Dominion Energy

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- PROPOSED 230 KV LINE 2011 PARTIAL REBUILD
- APPROVED 230 KV LINE 2011 EXTENSION (CASE NO. PUR-2021-00291)

James P Young (Services - 6)

From: Fulcher, Valerie <valerie.fulcher@deq.virginia.gov>
Sent: Tuesday, October 25, 2022 2:04 PM
To: rr dgif-ESS Projects; Keith Tignor; rr DCR-PRR Environmental Review; odwreview (VDH); Carlos Martinez; Kotur Narasimhan; Lawrence Gavan; Daniel Moore; Mark Miller; Roger Kirchen; Bob Lazaro; Karl Didier; Terrance Lasher; rr EIR Coordination; ImpactReview; Michelle Henicheck; Scott Kudlas; jspatton@pwcgov.org; Atkinson, Kelly; citymanager@ci.manassas.va.us; David Spears
Cc: James P Young (Services - 6)
Subject: [EXTERNAL] NEW SCOPING Line 2011 Cannon Branch-Clifton Line
Attachments: Cannon Branch - Clifton - Scoping Response.pdf; Line 2011 Partial Rebuild_Project Overview Map (Agency Letters)_10.19.2022.pdf; Cannon Branch - Clifton - Agency Letter - Standard.pdf

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

Dominion Energy Virginia's Proposed Cannon Branch-Clifton Line #2011 230kV Partial Rebuild Project, City of Manassas, Prince William County and Fairfax County, Virginia

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

DEQ-OEIR's scoping response is also attached.

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

Valerie

--

Valerie A. Fulcher, CAP, OM, Admin/Data Coordinator Senior

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

NEW PHONE NUMBER: 804-659-1550

Email: Valerie.Fulcher@deq.virginia.gov

https://www.deq.virginia.gov/permits-regulations/environmental-impact-review

OUR ENFORCEABLE POLICIES HAVE BEEN UPDATED FOR 2021: https://www.deq.virginia.gov/permits-regulations/environmental-impact-review/federal-consistency

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

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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

Travis A. Voyles
Acting Secretary of Natural and Historic Resources

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

October 25, 2022

Elizabeth Hester
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

RE: Dominion Energy Virginia's Proposed Cannon Branch-CliftonLine #2011 230kV Partial Rebuild Project, Prince William County and Fairfax County, Virginia

Dear Ms. Hester:

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

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

DOCUMENT SUBMISSIONS

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

ENVIRONMENTAL REVIEW UNDER VIRGINIA CODE 56-46.1

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

Department of Environmental Quality:

- DEQ Regional Office

- Air Division
- Office of Wetlands and Stream Protection
- Office of Local Government Programs
- Division of Land Protection and Revitalization
- Office of Stormwater Management

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

DATA BASE ASSISTANCE

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

- DEQ Online Database: Virginia Environmental Geographic Information Systems

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

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

  Virginia's coastal resource data and maps; coastal laws and policies; facts on coastal resource values; and direct links to collaborating agencies responsible for current data:
  - http://128.172.160.131/gems2/

- MARCO Mid-Atlantic Ocean Data Portal

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

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

- DHR Data Sharing System.

  Survey records in the DHR inventory:

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

- DCR Natural Heritage Search

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

- DWR Fish and Wildlife Information Service

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

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

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

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

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

- EPA RCRAInfo Search

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

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

- EPA Envirofacts Database

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

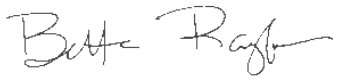
- EPA NEPAssist Database

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

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

I hope this information is helpful to you.

Sincerely,



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

COMMONWEALTH of VIRGINIA

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

Travis A. Voyles
Acting Secretary of Natural and Historic Resources

Jamie L. Green
Commissioner

November 28, 2022

Dominion Energy Services, Inc.
Attn: James Young
120 Tredegar Street
Richmond, VA 23219

Re: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Dear Mr. Young,

This will respond to the request for comments regarding the Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project, prepared by Dominion Energy. Specifically, Dominion Energy has proposed to partially rebuild the existing overhead 230 kV Cannon Branch-Clifton Line #2011 in the City of Manassas, Prince William County, and Fairfax County, Virginia

We reviewed the provided project documents and found the proposed project is within the jurisdictional areas of the Virginia Marine Resources Commission (VMRC) and may require a permit from this agency.

Please be advised that the VMRC, pursuant to §28.2-1200 et seq of the Code of Virginia, has jurisdiction over encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks which are the property of the Commonwealth. Accordingly, if any portion of the subject project involves any encroachments channelward of ordinary high water along non-tidal, natural rivers and streams with a drainage area greater than 5-square miles, a permit may be required from our agency. Any jurisdictional impacts will be reviewed by the VMRC during the JPA process.

Please contact me at (757) 247-8028 or by email at mark.eversole@mrc.virginia.gov if you have questions. Thank you for the opportunity to comment.

Sincerely,

Mark Eversole
Environmental Engineer, Habitat Management

ME/cg
HM

Wetland Delineation Report Site Information Summary
Line #2011 230 kV Partial Rebuild,
Easement start: (38.778390, -77.397395), end: (38.758534, -77.451305)
(54.22 Acres),
Manassas, Manassas Park, Prince William County, and Fairfax County, Virginia

Date
March 7, 2023

Applicant/Easement Owner
Virginia Electric and Power Company d/b/a Dominion Energy
10900 Nuckols Road, 4th Floor
Glen Allen, VA 23060
(804) 771-3769
ET.environmental@dominionenergy.com

Report Prepared by:
RES LLC (c/o Graham Shell)
1408 B Roseneath Rd
Richmond, VA 23230
gshell@res.us

Latitude/ Longitude in Decimal Degrees using coordinate plane (NAD 1983)
Utility Easement starting at 38.778390, -77.397395, and ending at 38.758534, -77.451305

Has a previous delineation or JD been performed? If so please provide USACE Project Number: Unknown

Hydrologic Unit Code (HUC)
8-Digit HUC - 02070010
10-Digit HUC - 0207001007
12-Digit HUC – 020700100504 and 020700100705

USGS Topographic Sheet
Manassas Quadrangle

Nearest Waterbody
Bull Run and Russia Branch, nontidal tributaries to the Occoquan River, run directly through the project limits.

Delineation Methods
U.S. Army Corps of Engineers 1987 Wetland Delineation Manual in conjunction with Eastern Mountains and Piedmont Regional supplement (Version 2.0) - Environmental Laboratory U.S. Army Corps of Engineers dated April 2012.

On-Site Investigation Date
Wetland boundary delineation and site data collection conducted between 10/4/2022 and 11/3/2022.

Wetland Delineation Plan
The proposed wetland boundaries and Data Sampling Point locations are depicted on the plan entitled "WATERS OF THE U.S. DELINEATION MAP" prepared by Laura Carson on 11/4/2022.

Wetland Investigation Results (Examples given, this is a summary of totals, please also provide a table with each individual water, Cowardin classification, and area shown. See table at end of questionnaire.)

Wetlands: A total of approximately 2.93 acres of non-tidal wetlands were identified within the parcel during this investigation. Of the total proposed wetland area, approximately 0.36 acres are palustrine forested (PFO) wetlands,1.23 aces are palustrine emergent (PEM), 0.59 acres are palustrine open water (POW) wetlands, and 0.09 acres are palustrine scrub shrub (PSS) wetlands. These wetlands are described by the representative data provided in (Appendix C).

Stream Channels: Approximately 2,790 linear feet of the project area were classified as stream channels with a bed and bank and the presence of an ordinary high water mark. Of these streams, 120 linear feet are classified as Ephemeral (R6), 805 linear feet are classified as Intermittent (R4), and 1865 linear feet are classified as Perennial (R3).

Other Waters: N/A

Water bodies onsite identified as Section 10: The proposed project will have an aerial stream crossing over Bull Run at approximately 38.777087, -77.422111, which has a drainage area of 165 square miles and will require authorization from the Virginia Marine Resource Commission.

100-Year Floodplains
As depicted on the Federal Emergency Management Agency's online Flood Insurance Rate Maps #51153C0157D (eff. January 5, 2995), #51153C0176D (eff. January 5, 1995), #51153C0114D (eff. January 5, 1995), #51153C0118D (eff. January 5, 1995), and #51059C0245E (eff. September 17, 2010) the Partial Rebuild Project area lies within Zone X (minimal flood zone hazard), Zone AE (areas within the 100-year floodplain with an established base flood elevation and a regulatory floodway), and Zone A (areas within the 100-year floodplain with no established base flood elevation).

National Wetlands Inventory
The on-line National Wetland Inventory (Appendix A) identifies numerous palustrine wetland features including open water (PUBHh), scrub shrub (PSS1Eh), and forested (PFO1A) within the project area.

USDA Soil Survey
The on-line USDA Natural Resource Conservation Service Soil Survey identifies the predominantly hydric soil series 3A - Albano silt loam, several partially hydric soil series including 27A - Hatboro-Codorus complex and 30A - Codorus and Hatboro soils, numerous predominantly non-hydric soil series including 103A - Wheaton-Codorus complex, 17A – Dulles silt loam, 29A - Codorus silt loam and 35B - Manassas silt loam, as well as a variety of non-hydric soils including 105B - Wheaton-Glenelg complex, 23E - Gaila sandy loam, and 24C - Glenelg-Buckhall complex. For a more comprehensive overview of soil series occupying the subject area refer to the mapping in (Appendix A).

Notes:
The project site encompasses an existing transmission line corridor primarily located along the Norfolk Southern Railroad. In Manassas and Manassas Park, the project site is surrounded by mixed development, including residential, commercial, and industrial uses. The project also crosses through Northern Virginia Regional Park Authority land, including 0.44 mile of Bull Run Regional Park, and Fairfax County Park Authority land, including 0.69 mile of Johnny Moore Stream Valley Park. The existing corridor also intersects a small portion of Hemlock Overlook Regional Park, managed by the Northern Virginia Regional Park Authority, and runs parallel to the northern border of the Hemlock Overlook Regional Park for approximately 1.44 miles.

Waters Table:

Wetland/ Water	Latitude	Longitude	Cowardin Class	Area (Acres or Linear Feet)	Class of aquatic resource (Tidal/Non-tidal, Section 10/404)
S1	38.779802	-77.397887	Intermittent Stream (R4)	35.99 Linear Feet	Non-tidal, Section 404
S2	38.778557	-77.397315	Intermittent Stream (R4)	21.54 Linear Feet	Non-tidal, Section 404
S3	38.778329	-77.397698	Intermittent Stream (R4)	101.43 Linear Feet	Non-tidal, Section 404
S4	38.778422	-77.397669	Perennial Stream (R3)	17.01 Linear Feet	Non-tidal, Section 404

Wetland/ Water	Latitude	Longitude	Cowardin Class	Area (Acres or Linear Feet)	Class of aquatic resource (Tidal/Non-tidal, Section 10/404)
S5	38.778023	-77.400281	Perennial Stream (R3)	61.89 Linear Feet	Non-tidal, Section 404
S6	38.777253	-77.405385	Perennial Stream (R3)	4.11 Linear Feet	Non-tidal, Section 404
S7	38.776202	-77.407534	Intermittent Stream (R4)	83.34 Linear Feet	Non-tidal, Section 404
S8	38.775169	-77.410933	Ephemeral Stream (R6)	28.57 Linear Feet	Non-tidal, Section 404
S9	38.774711	-77.413023	Perennial Stream (R3)	17.86 Linear Feet	Non-tidal, Section 404
S10	38.774653	-77.415969	Ephemeral Stream (R6)	71.19 Linear Feet	Non-tidal, Section 404
S11	38.774982	-77.416867	Intermittent Stream (R4)	70.53 Linear Feet	Non-tidal, Section 404
S12	38.777016	-77.42187	Perennial Stream (R3)	54.69 Linear Feet	Non-tidal, Section 404
S13	38.778913	-77.432629	Intermittent Stream (R4)	221.66 Linear Feet	Non-tidal, Section 404
S14	38.778419	-77.433039	Perennial Stream (R3)	303.29 Linear Feet	Non-tidal, Section 404
S15	38.777803	-77.433519	Perennial Stream (R3)	12.68 Linear Feet	Non-tidal, Section 404
S16	38.777696	-77.434024	Perennial Stream (R3)	412.31 Linear Feet	Non-tidal, Section 404
S17	38.77785	-77.433954	Intermittent Stream (R4)	57.29 Linear Feet	Non-tidal, Section 404
S18	38.777355	-77.434144	Intermittent Stream (R4)	28.98 Linear Feet	Non-tidal, Section 404

Wetland/ Water	Latitude	Longitude	Cowardin Class	Area (Acres or Linear Feet)	Class of aquatic resource (Tidal/Non-tidal, Section 10/404)
S19	38.776685	-77.434423	Perennial Stream (R3)	278.81 Linear Feet	Non-tidal, Section 404
S20	38.772799	-77.434616	Perennial Stream (R3)	62.56 Linear Feet	Non-tidal, Section 404
S21	38.769709	-77.436059	Intermittent Stream (R4)	73.33 Linear Feet	Non-tidal, Section 404
S22	38.769048	-77.436606	Perennial Stream (R3)	199.28 Linear Feet	Non-tidal, Section 404
S23	38.768779	-77.436964	Perennial Stream (R3)	96.09 Linear Feet	Non-tidal, Section 404
S24	38.763397	-77.443417	Perennial Stream (R3)	53.12 Linear Feet	Non-tidal, Section 404
S25	38.762643	-77.444749	Perennial Stream (R3)	28.18 Linear Feet	Non-tidal, Section 404
S26	38.758409	-77.451171	Intermittent Stream (R4)	34.23 Linear Feet	Non-tidal, Section 404
S27	38.75605	-77.454767	Intermittent Stream (R4)	34.77 Linear Feet	Non-tidal, Section 404
S28	38.752803	-77.458557	Perennial Stream (R3)	73.45 Linear Feet	Non-tidal, Section 404
S29	38.752323	-77.460876	Perennial Stream (R3)	51.42 Linear Feet	Non-tidal, Section 404
S30	38.752018	-77.461824	Perennial Stream (R3)	138.24 Linear Feet	Non-tidal, Section 404
S31	38.742663	-77.502492	Intermittent Stream (R4)	41.97 Linear Feet	Non-tidal, Section 404
S32	38.742587	-77.502546	Ephemeral Stream (R6)	20.29 Linear Feet	Non-tidal, Section 404

Wetland/ Water	Latitude	Longitude	Cowardin Class	Area (Acres or Linear Feet)	Class of aquatic resource (Tidal/Non-tidal, Section 10/404)
W1	38.778355	-77.397608	PFO	0.09 Acres	Non-tidal, Section 404
W2	38.7783	-77.39838	PFO	0.04 Acres	Non-tidal, Section 404
W3	38.778251	-77.398695	PFO	0.05 Acres	Non-tidal, Section 404
W4	38.778162	-77.399353	PFO	0.05 Acres	Non-tidal, Section 404
W5	38.778032	-77.400342	PFO	0.03 Acres	Non-tidal, Section 404
W6	38.777638	-77.402855	PEM	0.2 Acres	Non-tidal, Section 404
W7	38.777512	-77.403921	POW	0.54 Acres	Non-tidal, Section 404
W8	38.77724	-77.4054	PFO	0.003 Acres	Non-tidal, Section 404
W9	38.777115	-77.405326	PEM	0.005 Acres	Non-tidal, Section 404
W10	38.775556	-77.409645	PEM	0.015 Acres	Non-tidal, Section 404
W11	38.775265	-77.410788	POW	0.06 Acres	Non-tidal, Section 404
W12	38.774549	-77.413574	PEM	0.43 Acres	Non-tidal, Section 404
W13	38.77506	-77.416825	PEM	0.001 Acres	Non-tidal, Section 404
W14	38.775623	-77.418278	PEM	0.03 Acres	Non-tidal, Section 404

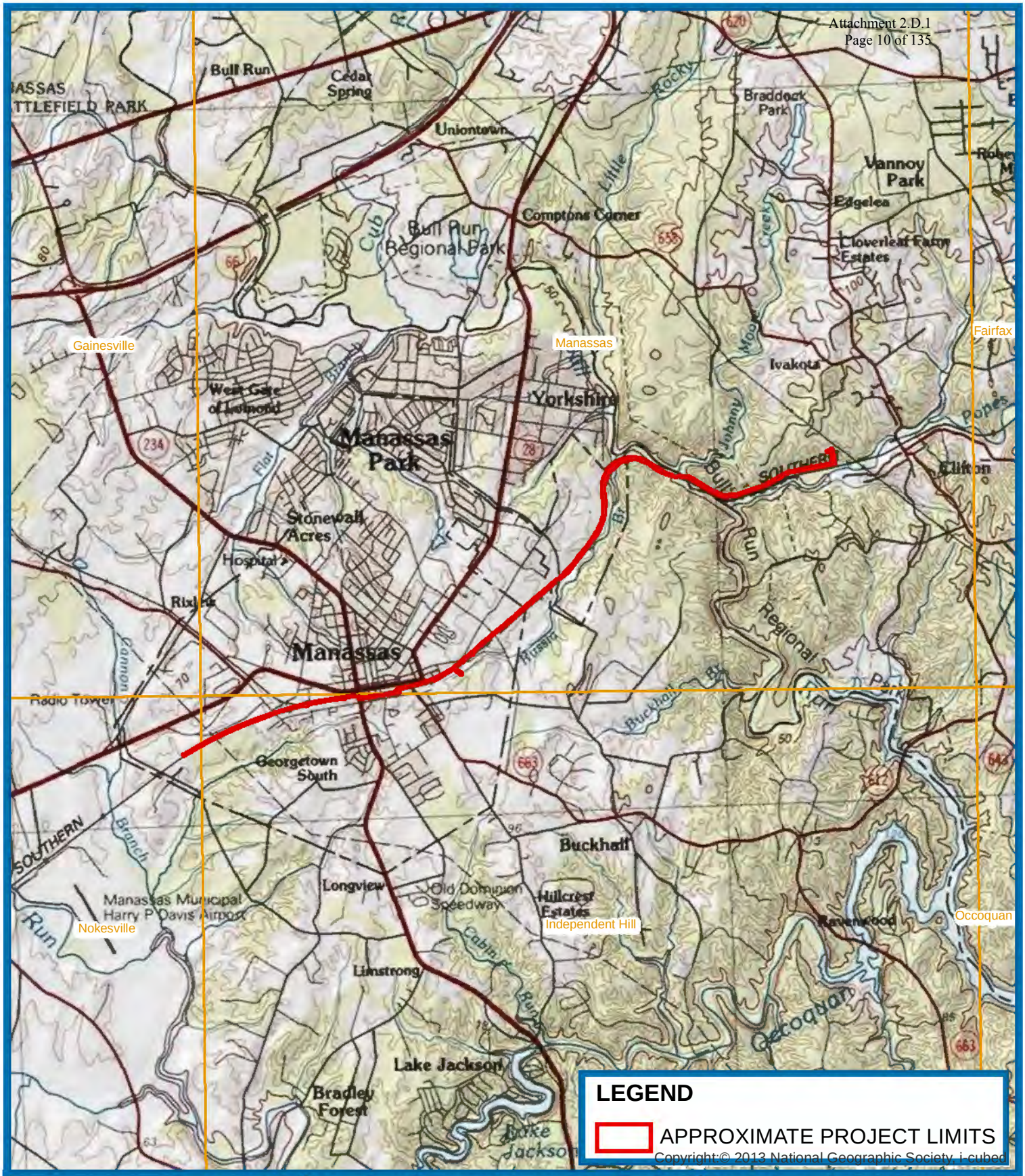
Wetland/ Water	Latitude	Longitude	Cowardin Class	Area (Acres or Linear Feet)	Class of aquatic resource (Tidal/Non-tidal, Section 10/404)
W15	38.776982	-77.423351	PEM	0.0004 Acres	Non-tidal, Section 404
W16	38.77867	-77.427219	PEM	0.08 Acres	Non-tidal, Section 404
W17	38.779429	-77.430207	PFO	0.10 Acres	Non-tidal, Section 404
W18	38.779209	-77.43119	PEM	0.04 Acres	Non-tidal, Section 404
W19	38.779022	-77.432158	PEM	0.10 Acres	Non-tidal, Section 404
W20	38.778218	-77.433013	PEM	0.03 Acres	Non-tidal, Section 404
W21	38.777758	-77.43363	PEM	0.013 Acres	Non-tidal, Section 404
W22	38.777421	-77.434114	PEM	0.006 Acres	Non-tidal, Section 404
W23	38.763442	-77.443287	PEM	0.003 Acres	Non-tidal, Section 404
W24	38.763425	-77.443511	PEM	0.02 Acres	Non-tidal, Section 404
W25	38.758428	-77.45116	PEM	0.008 Acres	Non-tidal, Section 404
W26	38.752948	-77.458962	PEM	0.13 Acres	Non-tidal, Section 404
W27	38.752703	-77.458605	PEM	0.03 Acres	Non-tidal, Section 404
W28	38.752809	-77.458526	PEM	0.004 Acres	Non-tidal, Section 404

Wetland/ Water	Latitude	Longitude	Cowardin Class	Area (Acres or Linear Feet)	Class of aquatic resource (Tidal/Non-tidal, Section 10/404)
W29	38.751925	-77.461752	PSS	0.04 Acres	Non-tidal, Section 404
W30	38.749023	-77.481525	PSS	0.02 Acres	Non-tidal, Section 404
W31	38.748642	-77.484029	PSS	0.03 Acres	Non-tidal, Section 404
W32	38.748602	-77.484318	PSS	0.002 Acres	Non-tidal, Section 404
W33	38.748194	-77.486314	PEM	0.01 Acres	Non-tidal, Section 404
W34	38.748068	-77.486946	PEM	0.007 Acres	Non-tidal, Section 404
W35	38.747837	-77.488066	PEM	0.0006 Acres	Non-tidal, Section 404
W36	38.74722	-77.489905	PEM	0.05 Acres	Non-tidal, Section 404
W37	38.747173	-77.490422	PEM	0.0002 Acres	Non-tidal, Section 404
W38	38.742795	-77.502158	PEM	0.02	Non-tidal, Section 404

APPENDIX A

FIGURES

VICINITY MAP, PROJECT LOCATION MAP,
NATIONAL WETLAND INVENTORY MAP, AERIAL IMAGERY, SOILS MAP



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PROJECT LOCATION MAP

LINE #2011 230 KV
PARTIAL REBUILD PROJECT

PRINCE WILLIAM COUNTY, FAIRFAX COUNTY,
CITY OF MANASSAS PARK, AND
CITY OF MANASSAS, VIRGINIA

USGS Topo Quads: Independent Hill, Manassas, & Nokesville
Latitude: 38.746327
Longitude: -77.493103
Approx. Project Area: 54.22 acres
Elevation: 132 - 348 feet
Scale: 1 inch = 6,000 feet
Source: http://resources.arcgis.com/ USA Topo Maps

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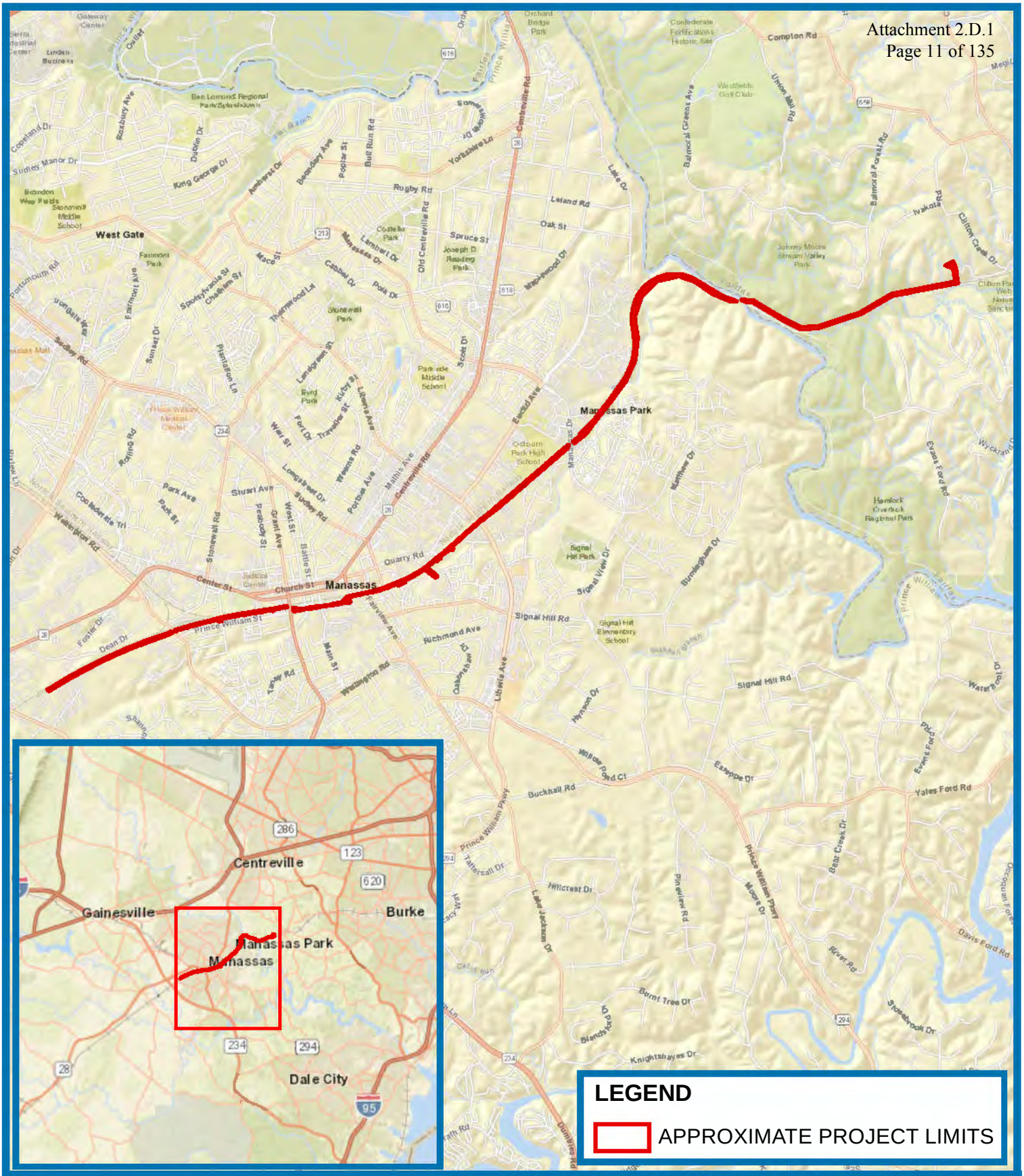

LEGEND

APPROXIMATE PROJECT LIMITS

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VICINITY MAP

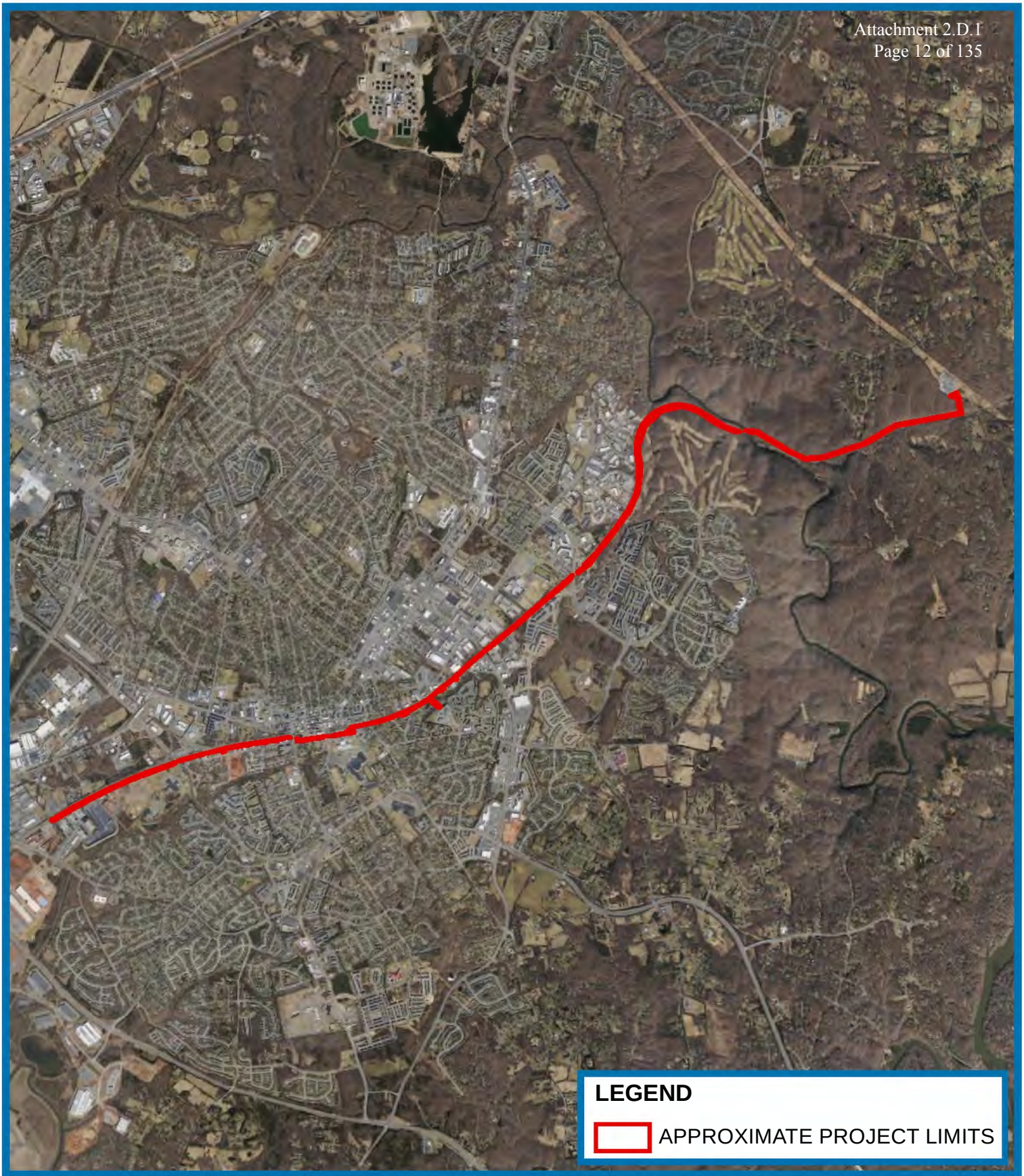
LINE #2011 230 KV
PARTIAL REBUILD PROJECT

PRINCE WILLIAM COUNTY, FAIRFAX COUNTY,
CITY OF MANASSAS PARK, AND
CITY OF MANASSAS, VIRGINIA

Street Map Source:
World Street Map
ESRI ArcGIS Online

N

1 inch = 4,300 feet



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AERIAL IMAGERY

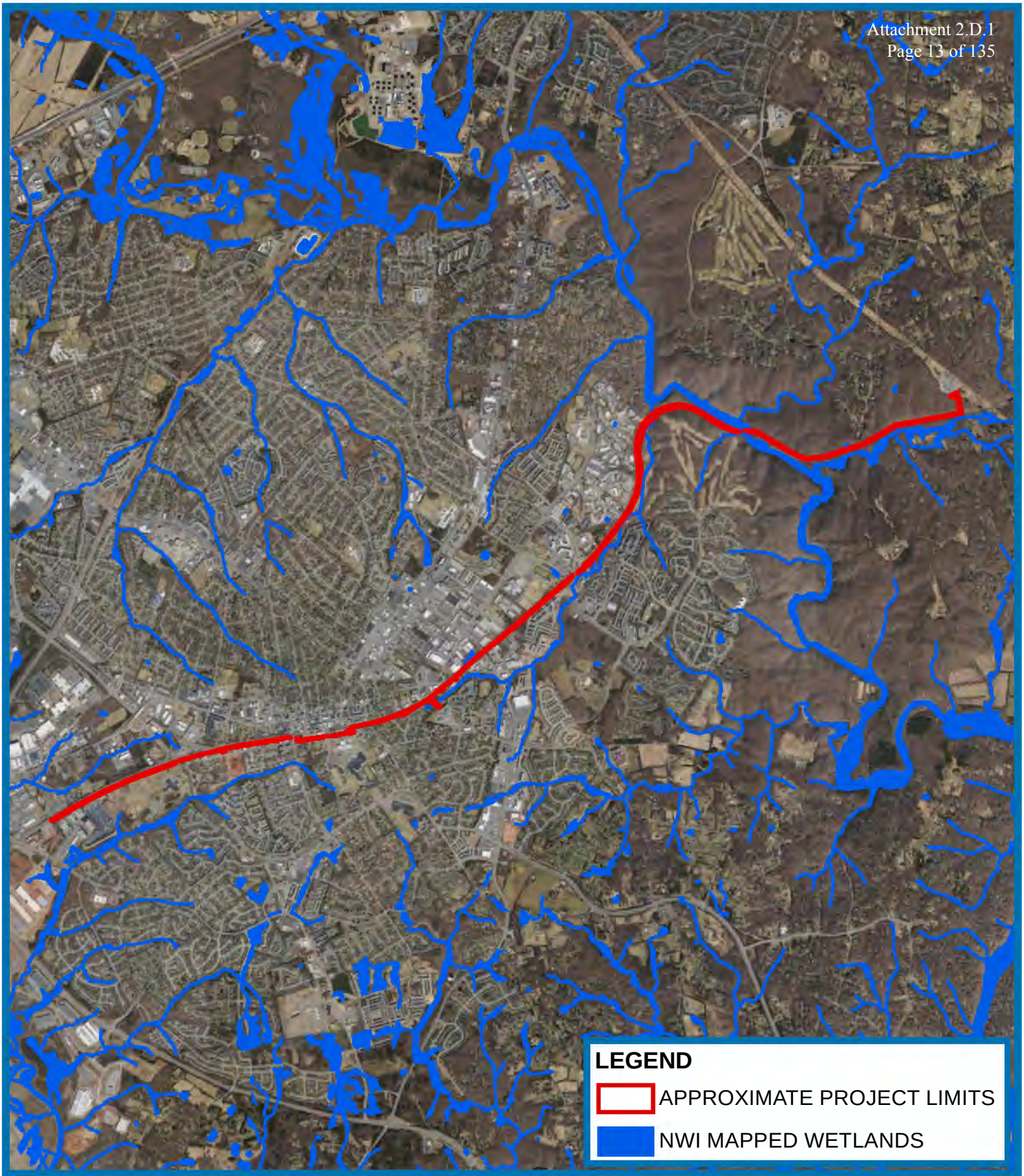
LINE #2011 230 KV
PARTIAL REBUILD PROJECT

PRINCE WILLIAM COUNTY, FAIRFAX COUNTY,
CITY OF MANASSAS PARK, AND
CITY OF MANASSAS, VIRGINIA

Digital Orthophoto Source:
VBMP Most Recent Imagery
Virginia Lambert (VGIN)

N

1 inch = 4,300 feet



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NATIONAL WETLANDS INVENTORY MAP

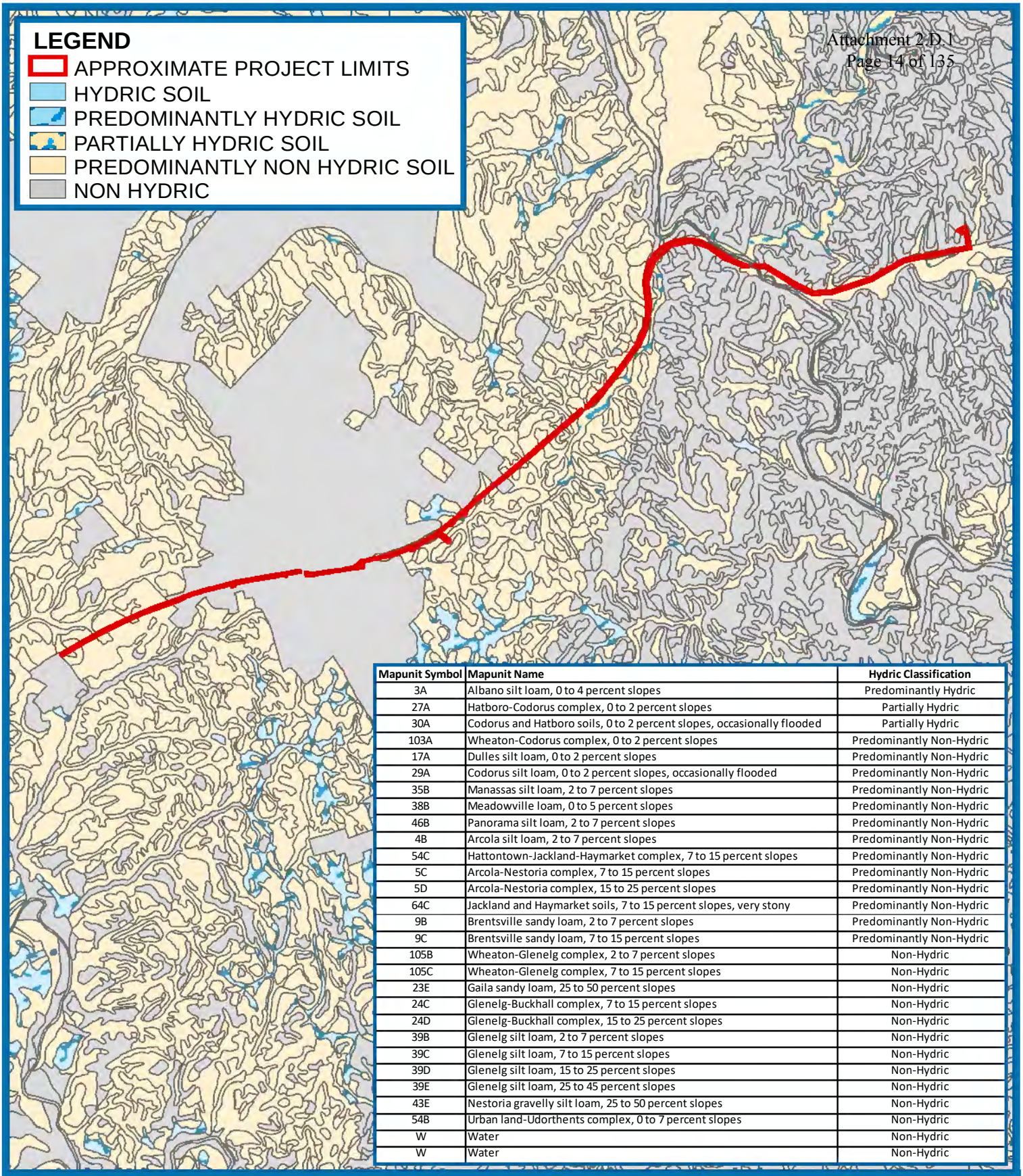
LINE #2011 230 KV
PARTIAL REBUILD PROJECT

PRINCE WILLIAM COUNTY, FAIRFAX COUNTY,
CITY OF MANASSAS PARK, AND
CITY OF MANASSAS, VIRGINIA

Digital Ortho Photo Source:
VBMP Most Recent Imagery
Virginia Lambert (VGIN)
National Wetlands Inventory (NWI)
Source
http://www.fws.gov/

N

1 inch = 4,300 feet



Mapunit Symbol	Mapunit Name	Hydric Classification
3A	Albano silt loam, 0 to 4 percent slopes	Predominantly Hydric
27A	Hatboro-Codorus complex, 0 to 2 percent slopes	Partially Hydric
30A	Codorus and Hatboro soils, 0 to 2 percent slopes, occasionally flooded	Partially Hydric
103A	Wheaton-Codorus complex, 0 to 2 percent slopes	Predominantly Non-Hydric
17A	Dulles silt loam, 0 to 2 percent slopes	Predominantly Non-Hydric
29A	Codorus silt loam, 0 to 2 percent slopes, occasionally flooded	Predominantly Non-Hydric
35B	Manassas silt loam, 2 to 7 percent slopes	Predominantly Non-Hydric
38B	Meadowville loam, 0 to 5 percent slopes	Predominantly Non-Hydric
46B	Panorama silt loam, 2 to 7 percent slopes	Predominantly Non-Hydric
4B	Arcola silt loam, 2 to 7 percent slopes	Predominantly Non-Hydric
54C	Hattontown-Jackland-Haymarket complex, 7 to 15 percent slopes	Predominantly Non-Hydric
5C	Arcola-Nestoria complex, 7 to 15 percent slopes	Predominantly Non-Hydric
5D	Arcola-Nestoria complex, 15 to 25 percent slopes	Predominantly Non-Hydric
64C	Jackland and Haymarket soils, 7 to 15 percent slopes, very stony	Predominantly Non-Hydric
9B	Brentsville sandy loam, 2 to 7 percent slopes	Predominantly Non-Hydric
9C	Brentsville sandy loam, 7 to 15 percent slopes	Predominantly Non-Hydric
105B	Wheaton-Glenelg complex, 2 to 7 percent slopes	Non-Hydric
105C	Wheaton-Glenelg complex, 7 to 15 percent slopes	Non-Hydric
23E	Gaila sandy loam, 25 to 50 percent slopes	Non-Hydric
24C	Glenelg-Buckhall complex, 7 to 15 percent slopes	Non-Hydric
24D	Glenelg-Buckhall complex, 15 to 25 percent slopes	Non-Hydric
39B	Glenelg silt loam, 2 to 7 percent slopes	Non-Hydric
39C	Glenelg silt loam, 7 to 15 percent slopes	Non-Hydric
39D	Glenelg silt loam, 15 to 25 percent slopes	Non-Hydric
39E	Glenelg silt loam, 25 to 45 percent slopes	Non-Hydric
43E	Nestoria gravelly silt loam, 25 to 50 percent slopes	Non-Hydric
54B	Urban land-Udorthents complex, 0 to 7 percent slopes	Non-Hydric
W	Water	Non-Hydric
W	Water	Non-Hydric

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SOILS MAP

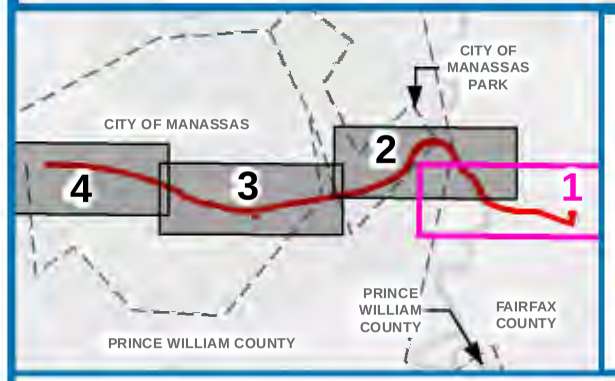
LINE #2011 230 KV
PARTIAL REBUILD PROJECT

PRINCE WILLIAM COUNTY, FAIRFAX COUNTY,
CITY OF MANASSAS PARK, AND
CITY OF MANASSAS, VIRGINIA

Source:
U.S. Department of Agriculture
Natural Resources
Conservation Service
Soil Survey Geographic
(SSURGO)

N

1 inch = 4,300 feet



LEGEND

- APPROXIMATE PROJECT LIMITS
- HYDRIC SOILS
- PREDOMINATLY HYDRIC SOILS
- PARTIALLY HYDRIC SOILS
- PREDOMINATLY NON-HYDRIC SOILS
- NON-HYDRIC SOILS

LINE #2011 230 KV
PARTIAL REBUILD PROJECT

SOILS MAP DETAIL

CITY OF MANASSAS, CITY OF MANSSAS PARK,
PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY,
VIRGINIA

SOILS PRESENT IN CURRENT EXTENT

Partially Hydric

Partially Hydric; 27A; Hatboro-Codorus complex, 0 to 2 percent slopes
Partially Hydric; 30A; Codorus and Hatboro soils, 0 to 2 percent slopes, occasionally flooded

Predominantly Non-Hydric

Predominantly Non-Hydric; 103A; Wheaton-Codorus complex, 0 to 2 percent slopes
Predominantly Non-Hydric; 29A; Codorus silt loam, 0 to 2 percent slopes, occasionally flooded
Predominantly Non-Hydric; 38B; Meadowville loam, 0 to 5 percent slopes
Predominantly Non-Hydric; 54C; Hattontown-Jackland-Haymarket complex, 7 to 15 percent slopes
Predominantly Non-Hydric; 64C; Jackland and Haymarket soils, 7 to 15 percent slopes, very stony

Non-Hydric

Non-Hydric; 105B; Wheaton-Glenelg complex, 2 to 7 percent slopes
Non-Hydric; 105C; Wheaton-Glenelg complex, 7 to 15 percent slopes
Non-Hydric; 24C; Glenelg-Buckhall complex, 7 to 15 percent slopes
Non-Hydric; 39B; Glenelg silt loam, 2 to 7 percent slopes
Non-Hydric; 39C; Glenelg silt loam, 7 to 15 percent slopes
Non-Hydric; 39D; Glenelg silt loam, 15 to 25 percent slopes
Non-Hydric; 39E; Glenelg silt loam, 25 to 45 percent slopes
Non-Hydric; W; Water

N

1 INCH = 700 FEET

0 700 1,400 2,100

FEET

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JOB NUMBER:	103811
DATE EXPORTED:	12/02/2022
REVISIONS:	03/06/2023 (LC)

SHEET
1 OF 4

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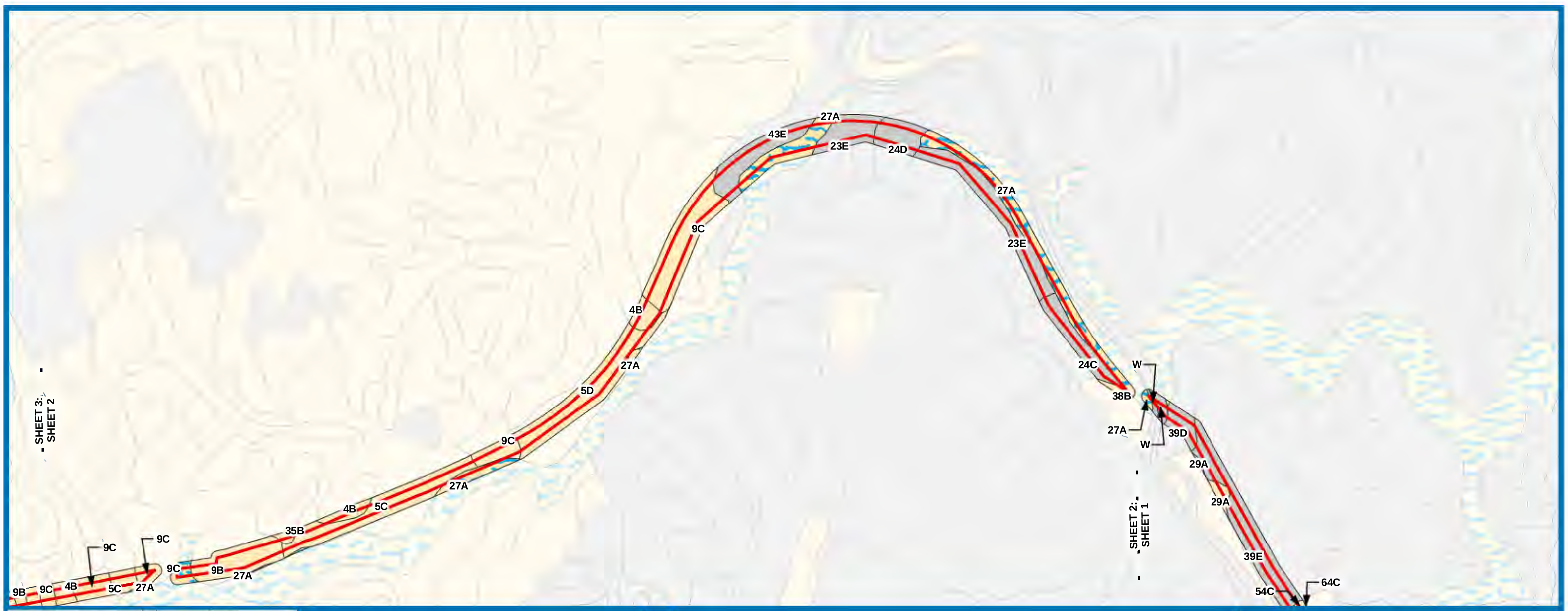

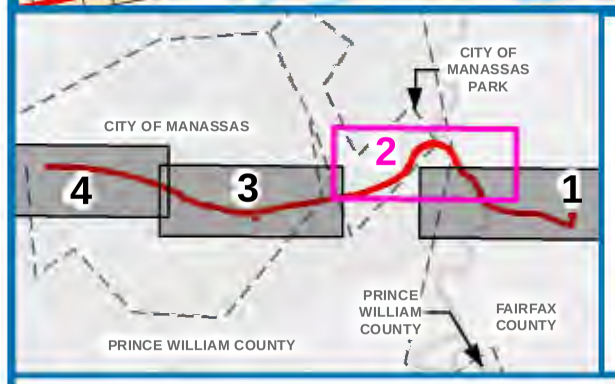

LEGEND

- APPROXIMATE PROJECT LIMITS
- HYDRIC SOILS
- PREDOMINATLY HYDRIC SOILS
- PARTIALLY HYDRIC SOILS
- PREDOMINATLY NON-HYDRIC SOILS
- NON-HYDRIC SOILS

LINE #2011 230 KV
PARTIAL REBUILD PROJECT

SOILS MAP DETAIL

CITY OF MANASSAS, CITY OF MANSSAS PARK, PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY, VIRGINIA

SOILS PRESENT IN CURRENT EXTENT

Partially Hydric

Partially Hydric; 27A; Hatboro-Codorus complex, 0 to 2 percent slopes
Partially Hydric; 30A; Codorus and Hatboro soils, 0 to 2 percent slopes, occasionally flooded

Predominantly Non-Hydric

Predominantly Non-Hydric; 29A; Codorus silt loam, 0 to 2 percent slopes, occasionally flooded
Predominantly Non-Hydric; 35B; Manassas silt loam, 2 to 7 percent slopes
Predominantly Non-Hydric; 38B; Meadowville loam, 0 to 5 percent slopes
Predominantly Non-Hydric; 4B; Arcola silt loam, 2 to 7 percent slopes
Predominantly Non-Hydric; 54C; Hattontown-Jackland-Haymarket complex, 7 to 15 percent slopes
Predominantly Non-Hydric; 5C; Arcola-Nestoria complex, 7 to 15 percent slopes
Predominantly Non-Hydric; 5D; Arcola-Nestoria complex, 15 to 25 percent slopes
Predominantly Non-Hydric; 64C; Jackland and Haymarket soils, 7 to 15 percent slopes, very stony
Predominantly Non-Hydric; 9B; Brentsville sandy loam, 2 to 7 percent slopes
Predominantly Non-Hydric; 9C; Brentsville sandy loam, 7 to 15 percent slopes

Non-Hydric

Non-Hydric; 23E; Gaila sandy loam, 25 to 50 percent slopes
Non-Hydric; 24C; Glenelg-Buckhall complex, 7 to 15 percent slopes
Non-Hydric; 24D; Glenelg-Buckhall complex, 15 to 25 percent slopes
Non-Hydric; 39D; Glenelg silt loam, 15 to 25 percent slopes
Non-Hydric; 39E; Glenelg silt loam, 25 to 45 percent slopes
Non-Hydric; 43E; Nestoria gravelly silt loam, 25 to 50 percent slopes
Non-Hydric; W; Water

1 INCH = 700 FEET

0 700 1,400 2,100

FEET

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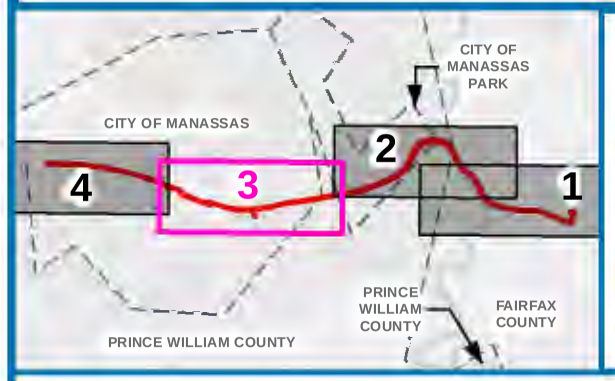

LEGEND

- APPROXIMATE PROJECT LIMITS
- HYDRIC SOILS
- PREDOMINATLY HYDRIC SOILS
- PARTIALLY HYDRIC SOILS
- PREDOMINATLY NON-HYDRIC SOILS
- NON-HYDRIC SOILS

LINE #2011 230 KV
PARTIAL REBUILD PROJECT

SOILS MAP DETAIL

CITY OF MANASSAS, CITY OF MANSSAS PARK,
PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY,
VIRGINIA

SOILS PRESENT IN CURRENT EXTENT

Predominantly Hydric

Predominantly Hydric; 3A; Albano silt loam, 0 to 4 percent slopes

Predominantly Non-Hydric

Predominantly Non-Hydric; 17A; Dulles silt loam, 0 to 2 percent slopes
Predominantly Non-Hydric; 35B; Manassas silt loam, 2 to 7 percent slopes
Predominantly Non-Hydric; 4B; Arcola silt loam, 2 to 7 percent slopes
Predominantly Non-Hydric; 9B; Brentsville sandy loam, 2 to 7 percent slopes
Predominantly Non-Hydric; 9C; Brentsville sandy loam, 7 to 15 percent slopes

Non-Hydric

Non-Hydric; 54B; Urban land-Udorthents complex, 0 to 7 percent slopes

1 INCH = 700 FEET

0 700 1,400 2,100

FEET

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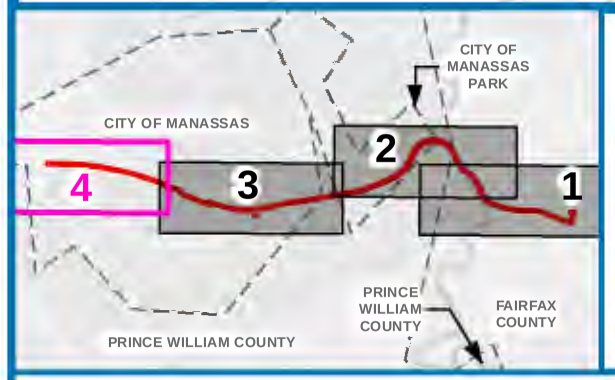

LEGEND

- APPROXIMATE PROJECT LIMITS
- HYDRIC SOILS
- PREDOMINATLY HYDRIC SOILS
- PARTIALLY HYDRIC SOILS
- PREDOMINATLY NON-HYDRIC SOILS
- NON-HYDRIC SOILS

LINE #2011 230 KV
PARTIAL REBUILD PROJECT

SOILS MAP DETAIL

CITY OF MANASSAS, CITY OF MANSSAS PARK,
PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY,
VIRGINIA

SOILS PRESENT IN CURRENT EXTENT

Predominantly Non-Hydric

Predominantly Non-Hydric; 35B; Manassas silt loam, 2 to 7 percent slopes
Predominantly Non-Hydric; 46B; Panorama silt loam, 2 to 7 percent slopes
Predominantly Non-Hydric; 4B; Arcola silt loam, 2 to 7 percent slopes

Non-Hydric

Non-Hydric; 54B; Urban land-Udorthents complex, 0 to 7 percent slopes

1 INCH = 700 FEET

0 700 1,400 2,100

FEET

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4 OF 4

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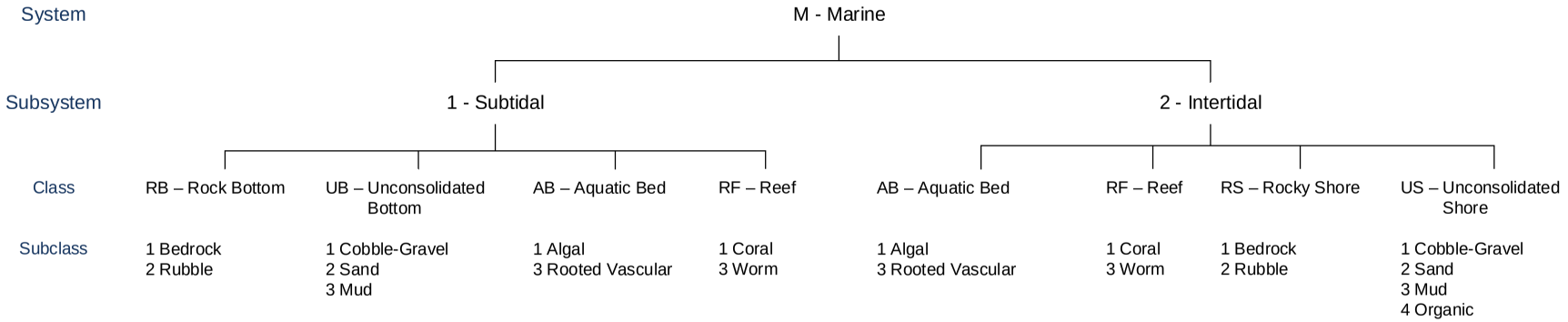
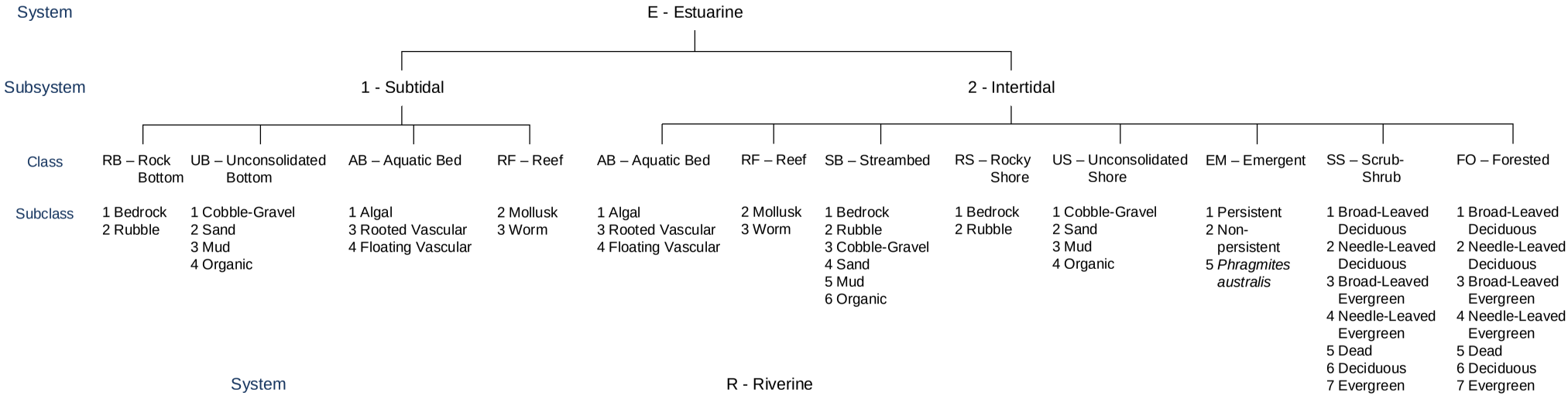
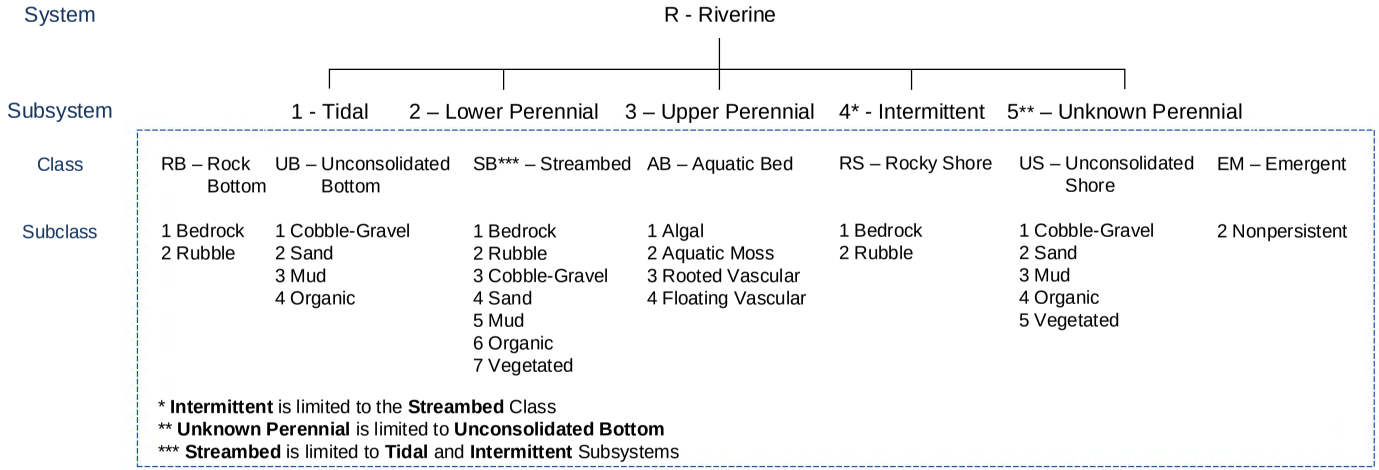
APPENDIX B

COWARDIN SYSTEM OF WETLANDS AND DEEPWATER WATER HABITAT CLASSIFICATION

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION



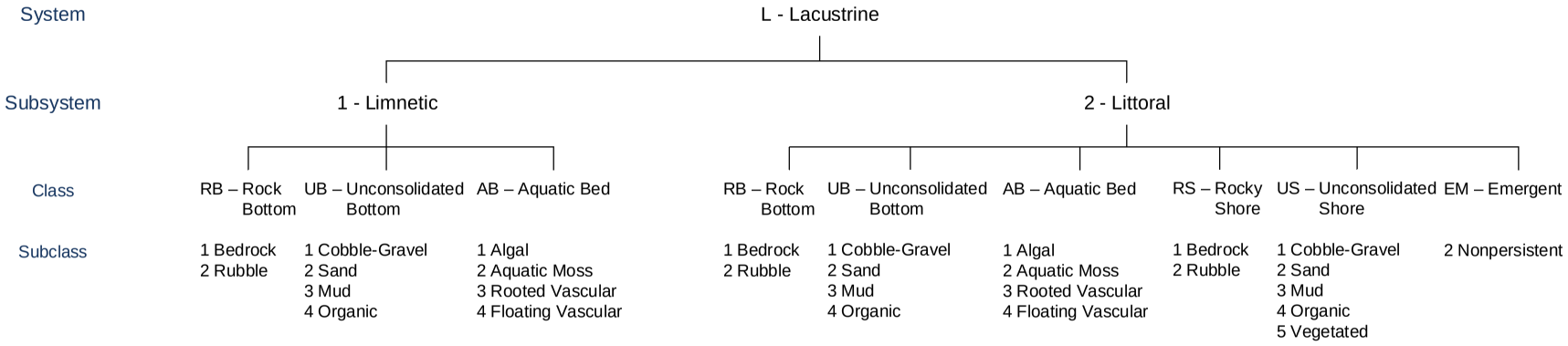


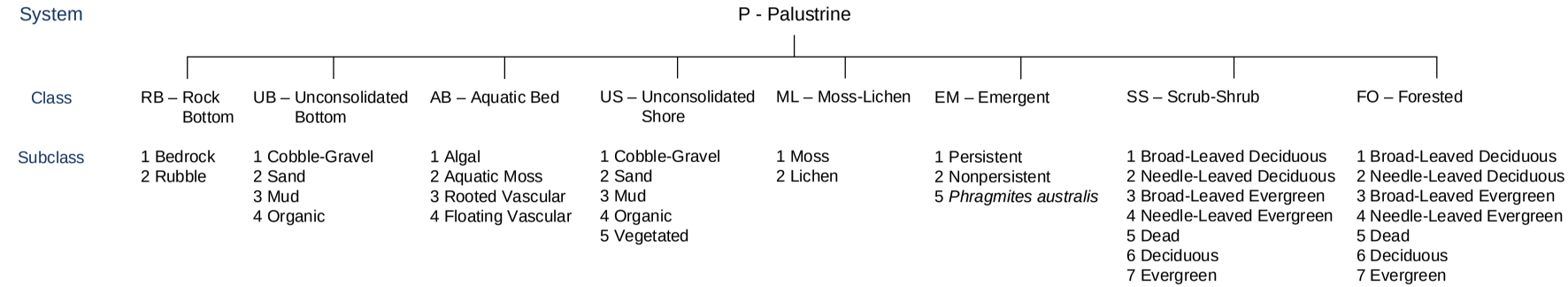


* **Intermittent** is limited to the **Streambed** Class
** **Unknown Perennial** is limited to **Unconsolidated Bottom**
*** **Streambed** is limited to **Tidal** and **Intermittent** Subsystems

Classification of Wetlands and Deepwater Habitats of the United States, Cowardin *et al*. 1979

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION





MODIFIERS

In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

Water Regime			Special Modifiers	Water Chemistry			Soil
Nontidal	**Saltwater Tidal**	**Freshwater Tidal**		**Coastal Halinity**	**Inland Salinity**	**pH Modifiers for all Fresh Water**	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a Acid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	I Alkaline	
E Seasonally Flooded/ Saturated	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
F Semipermanently Flooded			r Artificial	5 Mesohaline			
G Intermittently Exposed			s Spoil	6 Oligohaline			
H Permanently Flooded			x Excavated	0 Fresh			
J Intermittently Flooded							
K Artificially Flooded							

APPENDIX C
WETLAND DELINEATION DATA SHEETS

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	4-Oct-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-1
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Berm	Local relief (concave, convex, none)	Convex	Slope (%):	0-2
Subregion (LRR or MLRA):	MLRA 136	Lat: -77.397129	Long: 38.778429	Datum:	NAD 1983
Soil Map Unit Name:	Cordus Silt Loam	NWI Classification:	N/A		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

Data Point 1 is within a managed utility easement.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-1

Tree Stratum (Plot size: r= 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Elaeagnus umbellata*	10	Y	
2			
3			
4			
5			
6			
7			
	10	= Total Cover	

Sapling stratum (Plot size: r= 15')			
1			
2			
3			
4			
5			
6			
7			
	0	= Total Cover	

Shrub stratum (Plot size: r= 15')			
1			
2			
3			
4			
5			
6			
7			
	0	= Total Cover	

Herb stratum (Plot size: r= 5')			
1 *Microstegium vimineum*	90	Y	FAC
2 *Verbesina alternifolia*	10	N	FAC
3 *Persicaria perfoliata*	5	N	FAC
4 *Persicaria maculosa*	3	N	FACW
5 *Dichanthelium clandestinum*	2	N	FAC
6 *Phytolacca americana*	2	N	FACU
7			
8			
9			
10			
11			
12			
	112	= Total Cover	

Woody vine stratum (Plot size: r= 30')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across all Strata:	2	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	50.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	3	x 2 =	6	
FAC species	107	x 3 =	321	
FACU species	2	x 4 =	8	
UPL species	0	x 5 =	0	
Column totals	112	(A)	335	(B)
Prevalence Index = B/A =			2.99	

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- ___ 2 – Dominance Test is >50%
- X 3 – Prevalence Index is ≤3.0[1]
- ___ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100%					Gravelly Clay Loa	gravel/small cobble
3-20	10YR 4/4	83%	10YR 6/6	10%	C	M	Gravelly Clay Loa	
			10YR 7/1	5%	D	M	Gravelly Clay Loa	
			7.5YR 4/6	2%	C	M	Gravelly Clay Loa	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

Gravel berm beside railroad tracks.

PHOTOGRAPHS

Sampling Point: DP-1

Photograph 1. Data Point 1 Soil

Photograph 2. Data Point 1 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	4-Oct-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-2
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Depression	Local relief (concave, convex, none)	Concave	Slope (%):	0
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.397362	Long:	38.778292
Datum:	NAD 1983				
Soil Map Unit Name:	Cordus Silt Loam	NWI Classification:	N/A		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report)

Data Point 2 is within a managed utility easement

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
X Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
X High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	X Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
X Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes X	No	Depth (inches):	Surface	
Water table present?	Yes X	No	Depth (inches):	Surface	**Wetland Hydrology Present?** Y
Saturation present? (includes capillary fringe)	Yes X	No	Depth (inches):	Surface	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-2

Tree Stratum (Plot size: r= 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Fraxinus pennsylvanica*	15	Y	FACW
2 *Platanus occidentalis*	5	Y	FACW
3			
4			
5			
6			
7			
	20	= Total Cover	

Sapling stratum (Plot size: r= 15')			
1 *Fraxinus pennsylvanica*	20	Y	FACW
2 *Elaeagnus umbellata*	5	N	FACU
3 *Rosa multiflora*	5	N	FACU
4 *Carya tomentosa*	3	N	FACU
5			
6			
7			
	33	= Total Cover	

Shrub stratum (Plot size: r= 15')			
1			
2			
3			
4			
5			
6			
7			
	0	= Total Cover	

Herb stratum (Plot size: r= 5')			
1 *Persicaria maculosa*	30	Y	FACW
2 *Microstegium vimineum*	30	Y	FAC
3 *Cinna arundinacea*	10	N	FACW
4 *Carex frankii*	5	N	OBL
5 *Symphyotrichum pilosum*	5	N	FAC
6 *Boehmeria cylindrica*	3	N	FACW
7			
8			
9			
10			
11			
12			
	83	= Total Cover	

Woody vine stratum (Plot size: r= 30')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across all Strata:	5	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	5	x 1 =	5
FACW species	83	x 2 =	166
FAC species	35	x 3 =	105
FACU species	13	x 4 =	52
UPL species	0	x 5 =	0
Column totals	136 (A)		328 (B)
Prevalence Index = B/A =			2.41

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- X 3 – Prevalence Index is ≤3.0[1]
- ___ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	80%	7.5YR 5/6	10%	C	M	Silt Loam	
			7.5YR 5/6	5%	C	PL		
			7.5YR 3/1	5%	D	M		
12-20	7.5YR 5/6	80%	10YR 6/2	20%	D	M	Silty Clay	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Y ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-2

Photograph 1. Data Point 2 Soil

Photograph 2. Data Point 2 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	5-Oct-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-3
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Hill	Local relief (concave, convex, none)	Convex	Slope (%):	3-5%
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.402444	Long:	38.777701
Datum:	NAD 1983				
Soil Map Unit Name:	Wheaton-Codorus complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

Data Point 4 is within a managed utility easement

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-3

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1	*Quercus alba*	5	Y	FACU
2	*Elaeagnus umbellata*	3	Y	
3				
4				
5				
6				
7				
		8	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1	*Pyrus calleryana*	5	Y	
2	*Quercus rubra*	5	Y	FACU
3				
4				
5				
6				
7				
		10	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Lespedeza cuneata*	25	Y	FACU
2	*Microstegium vimineum*	20	Y	FAC
3	*Rubus argutus*	10	N	FACU
4	*Dicanthelium clandestinum*	5	N	
5	*Athyrium filix-femina*	3	N	
6				
7				
8				
9				
10				
11				
12				
		63	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 16.67% (A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	20	x 3 =	60	
FACU species	45	x 4 =	180	
UPL species	0	x 5 =	0	
Column totals	65	(A)	240	(B)

Prevalence Index = B/A = 3.69

Hydrophytic Vegetation Indicators:

- 1 – Rapid Test for Hydrophytic Vegetation
- 2 – Dominance Test is >50%
- 3 – Prevalence Index is ≤3.0[1]
- 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100%					Loam	
6-10	2.5Y 7/3	95%	10YR 7/6	5%	C	M	Sandy Clay Loam	Gravel

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel

Depth (inches): 10"

Hydric Soil Present? N

Remarks:

PHOTOGRAPHS

Sampling Point: DP-3

Photograph 1. Data Point 3 Soil

Photograph 2. Data Point 3 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	5-Oct-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-4
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Hillside	Local relief (concave, convex, none)	Convex	Slope (%):	3-5%
Subregion (LRR or MLRA):	MLRA 136	Lat: -77.402369	Long: 38.77776	Datum:	NAD 1983
Soil Map Unit Name:	Wheaton-Codorus complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report)

Data Point 3 is within a managed utility easement

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		X Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		X FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No X	Depth (inches):	N/A
Water table present?	Yes		No X	Depth (inches):	N/A
Saturation present? (includes capillary fringe)	Yes	X	No	Depth (inches):	6

Wetland Hydrology Present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-4

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1	*Platanus occidentalis*	25	Y	FACW
2	*Carya tomentosa*	10	Y	FACU
3	*Fagus grandifolia*	7	N	FACU
4	*Quercus alba*	5	N	FACU
5				
6				
7				
		47	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1	*Carya tomentosa*	10	Y	FACU
2	*Fagus grandifolia*	7	Y	FACU
3	*Elaeagnus umbellata*	5	Y	FACU
4				
5				
6				
7				
		22	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Panicum rigidulum*	60	Y	FACW
2	*Microstegium vimineum*	20	Y	FAC
3	*Verbesina alternifolia*	7	N	FAC
4	*Dichanthelium clandestinum*	5	N	FAC
5	*Boehmeria cylindrica*	3	N	FACW
6				
7				
8				
9				
10				
11				
12				
		95	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 42.86% (A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	88	x 2 =	176	
FAC species	32	x 3 =	96	
FACU species	44	x 4 =	176	
UPL species	0	x 5 =	0	
Column totals	164	(A)	448	(B)

Prevalence Index = B/A = 2.73

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- ___ 2 – Dominance Test is >50%
- X 3 – Prevalence Index is ≤3.0[1]
- ___ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100%					Clay Loam	
10-18	10YR 6/1	80%	10YR 5/6	20%	C	M	Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Y ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-4

Photograph 1. Data Point 4 Soil

Photograph 2. Data Point 4 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	2-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-5
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Flat Floodplain	Local relief (concave, convex, none)	N/A	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.407575	Long:	38.776306
Datum:	NAD 1983				
Soil Map Unit Name:	Codorus silt loam, 0 to 2 percent slopes, occasionally floc	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?		**Is the sampled area within a wetland?** N
Hydric soil present?		
Indicators of wetland hydrology present?		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	N/A
Water table present?	Yes		No	X	Depth (inches):	N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-5

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum	(Plot size: r= 15')			
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Shrub stratum	(Plot size: r= 15')			
1	*Elaeagnus umbellata*	15	Y	
2				
3				
4				
5				
6				
7				
		15	= Total Cover	
Herb stratum	(Plot size: r= 5')			
1	*Microstegium vimineum*	60	Y	FAC
2	*Verbesina alternifolia*	10	N	FAC
3	*Miscanthus sinensis*	5	N	FACU
4	*Rubus argutus*	5	N	FACU
5	*Allium vineale*	2	N	FACU
6	*Dichanthelium clandestinum*	2	N	FAC
7	*Lonicera japonica*	2	N	FACU
8	*Solanum carolinense*	2	N	FACU
9				
10				
11				
12				
		88	= Total Cover	
Woody vine stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	72	x 3 =	216	
FACU species	16	x 4 =	64	
UPL species	0	x 5 =	0	
Column totals	88	(A)	280	(B)
Prevalence Index = B/A =			3.18	

Hydrophytic Vegetation Indicators:

_ 1 – Rapid Test for Hydrophytic Vegetation

_ 2 – Dominance Test is >50%

_ 3 – Prevalence Index is ≤3.0[1]

_ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

_ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	100%					Clay Loam	
4-20	10YR 4/3	80%	10YR 5/6	20%	C	M	Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-5

Photograph 1. DP-5 Soil

Photograph 2. DP-5 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	2-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-6
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Depression	Local relief (concave, convex, none)	Concave	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.402444	Long:	38.777701
Datum:	NAD 1983				
Soil Map Unit Name:	Codorus silt loam	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

Within a ditch next to a railroad in an utility easement

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
	Surface Water (A1)		True Aquatic Plants (B14)		Surface Soil Cracks (B6)
	High Water Table (A2)		Hydrogen Sulfide Odor (C1)		Sparsely Vegetated Concave Surface (B8)
	Saturation (A3)		Oxidized Rhizospheres on Living Roots (C3)	X	Drainage Patterns (B10)
	Water Marks (B1)		Presence of Reduced Iron (C4)		Moss Trim Lines (B16)
	Sediment Deposits (B2)		Recent Iron Reduction in Tilled Soils (C6)		Dry-Season Water Table (C2)
	Drift Deposits (B3)		Thin Muck Surface (C7)		Crayfish Burrows (C8)
	Algal Mat or Crust (B4)		Other (Explain in Remarks)		Saturation Visible on Aerial Imagery (C9)
	Iron Deposits (B5)				Stunted or Stressed Plants (D1)
	Inundation Visible on Aerial Imagery (B7)				Geomorphic Position (D2)
	Water-Stained Leaves (B9)				Shallow Aquitard (D3)
	Aquatic Fauna (B13)				Microtopographic Relief (D4)
					FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-6

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: 30')				
1	*Platanus occidentalis*	30	Y	FACW
2				
3				
4				
5				
6				
7				
		30	= Total Cover	
Sapling stratum (Plot size: 30')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Shrub stratum (Plot size: 30')				
1	*Elaeagnus umbellata*	10	Y	
2				
3				
4				
5				
6				
7				
		10	= Total Cover	
Herb stratum (Plot size: 30')				
1	*Microstegium vimineum*	70	Y	FAC
2	*Rubus argutus*	5	N	FACU
3	*Cinna arundinacea*	5	N	FACW
4	*Rosa multiflora*	2	N	FACU
5	*Lonicera japonica*	2	N	FACU
6	*Verbesina alternifolia*	2	N	FAC
7	*Lespedeza cuneata*	2	N	FACU
8				
9				
10				
11				
12				
		88	= Total Cover	
Woody vine stratum (Plot size:)				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	3	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	66.67%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	72	x 3 =	216
FACU species	11	x 4 =	44
UPL species	0	x 5 =	0
Column totals	118 (A)		330 (B)
Prevalence Index = B/A =			2.80

Hydrophytic Vegetation Indicators:

	1 – Rapid Test for Hydrophytic Vegetation
X	2 – Dominance Test is >50%
X	3 – Prevalence Index is ≤3.0[1]
	4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
	Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 5/3	90%	10YR 5/6	2%	C	M	Clay Loam	Gravel inclusions
4-9	7.5YR 6/8	100%					Clay Loam	Gravel inclusions
9								Restrictive layer

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel from adjacent railraod

Depth (inches): 9"

Hydric Soil Present? N

Remarks:

PHOTOGRAPHS

Sampling Point: DP-6

Photograph 1. Data Point 6 Soil

Photograph 2. Data Point 6 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	2-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-7
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Hillslope	Local relief (concave, convex, none)	None	Slope (%):	0-1
Subregion (LRR or MLRA):	MLRA 136	Lat: -77.41265	Long: 38.774715	Datum:	NAD 1983
Soil Map Unit Name:	Codorus silt loam	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-7

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1	*Fagus grandifolia*	15	Y	FACU
2	*Platanus occidentalis*	10	Y	FACW
3	*Liriodendron tulipifera*	5	N	FACU
4				
5				
6				
7				
		30	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1	*Elaeagnus umbellata*	7	Y	FACU
2				
3				
4				
5				
6				
7				
		7	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Microstegium vimineum*	50	Y	FAC
2	*Rubus argutus*	25	Y	FACU
3	*Lonicera japonica*	10	N	FACU
4	*Dichanthelium clandestinum*	3	N	FAC
5	*Verbesina alternifolia*	3	N	FAC
6	*Polystichum acrostichoides*	2	N	FACU
7	*Carya cordiformis*	2	N	FACU
8	*Persicaria maculosa*	2	N	FACW
9				
10				
11				
12				
		97	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 40.00% (A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	12	x 2 =	24
FAC species	56	x 3 =	168
FACU species	66	x 4 =	264
UPL species	0	x 5 =	0
Column totals	134 (A)		456 (B)

Prevalence Index = B/A = 3.40

Hydrophytic Vegetation Indicators:

- 1 – Rapid Test for Hydrophytic Vegetation
- 2 – Dominance Test is >50%
- 3 – Prevalence Index is ≤3.0[1]
- 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: DP-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	2.5YR 4/3	80%	2.5YR 4/6	20%	C	M	Clay Loam	
2-20	2.5YR 4/6	100%					Clay Loam	Gravel and Mica Inclusions

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-7

Photograph 1. Data Point 7 Vicinity

Photograph 2.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	2-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-8
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Depression	Local relief (concave, convex, none)	Concave	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.412953	Long:	38.774707
Datum:	NAD 1983				
Soil Map Unit Name:	Codorus silt loam	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
X High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	X Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		X Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes	X	No		Depth (inches): 8
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches): 0

Wetland Hydrology Present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-8

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum	(Plot size: r= 15')			
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Shrub stratum	(Plot size: r= 15')			
1	*Elaeagnus umbellata*	20	Y	FACU
2	*Quercus phellos*	10	Y	FAC
3				
4				
5				
6				
7				
		30	= Total Cover	
Herb stratum	(Plot size: r= 5')			
1	*Microstegium vimineum*	40	Y	FAC
2	*Typha latifolia*	20	Y	OBL
3	*Juncus effusus*	15	N	FACW
4	*Cinna arundinacea*	10	N	FACW
5	*Arthraxon hispidus*	5	N	FAC
6	*Scirpus cyperinus*	5	N	FACW
7	*Mimulus ringens*	3	N	OBL
8	*Dulichium arundinaceum*	3	N	OBL
9	*Solanum carolinense*	2	N	FACU
10				
11				
12				
		103	= Total Cover	
Woody vine stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across all Strata:	4	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	75.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	26	x 1 =	26
FACW species	30	x 2 =	60
FAC species	55	x 3 =	165
FACU species	22	x 4 =	88
UPL species	0	x 5 =	0
Column totals	133 (A)		339 (B)
Prevalence Index = B/A =			2.55

Hydrophytic Vegetation Indicators:

	1 – Rapid Test for Hydrophytic Vegetation
X	2 – Dominance Test is >50%
X	3 – Prevalence Index is ≤3.0[1]
	4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
	Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2	95%	10YR 4/4	5%	C	M	Gravel Clay Loam	
2-16	10YR 4/1	97%	2.5Y 4/3	3%	C	M	Silty Clay Loam	Soil had a mucky texture.
16-20	10YR 4/1	88%	2.5Y 5/4	10%	C	M	Loamy Clay	
			7.5YR 4/6	2%	C	M	Loamy Clay	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Y ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-8

Photograph 1. Data Point 8 Soil

Photograph 2. Data Point 8 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	10-Oct-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-4
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Swale	Local relief (concave, convex, none)	Concave	Slope (%):	3-Feb
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.420238	Long: 38.776661	Datum: NAD 1983
Soil Map Unit Name:	Glenelg silt loam	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-4

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1	*Rosa multiflora*	7	Y	FACU
2				
3				
4				
5				
6				
7				
		7	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Microstegium vimineum*	60	Y	FAC
2	*Rubus argutus*	10	N	FACU
3	*Verbesina alternifolia*	5	N	FAC
4	*Solanum carolinense*	3	N	FACU
5	*Polystichum acrostichoides*	2	N	FACU
6				
7				
8				
9				
10				
11				
12				
		80	= Total Cover	
Woody vine stratum (Plot size:)				
1	*Lonicera japonica*	5	Y	FACU
2				
3				
4				
5				
		5	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	65	x 3 =	195	
FACU species	27	x 4 =	108	
UPL species	0	x 5 =	0	
Column totals	92	(A)	303	(B)
Prevalence Index = B/A =			3.29	

Hydrophytic Vegetation Indicators:

- 1 – Rapid Test for Hydrophytic Vegetation
- 2 – Dominance Test is >50%
- 3 – Prevalence Index is ≤3.0[1]
- 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

data taken in rectangular plot centered on bottom of a swale

SOIL Sampling Point: DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/3	100%					Clay Loam	
15-20	10YR 3/3	95%	10YR 4/6	5%	C	M	Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-4

Photograph 1. Data Point 9 Soil

Photograph 2. Data Point 9 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	2-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-10
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Flat	Local relief (concave, convex, none)	none	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.423291	Long:	38.77709
Datum:	NAD 1983				
Soil Map Unit Name:	Glenelg-Buckhall complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

Adjacent to railroad

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-10

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum	(Plot size: r= 15')			
1		25	Y	
2				
3				
4				
5				
6				
7				
		25	= Total Cover	
Shrub stratum	(Plot size: r= 15')			
1	*Pyrus calleryana*	25	Y	FACU
2				
3				
4				
5				
6				
7				
		25	= Total Cover	
Herb stratum	(Plot size: r= 5')			
1	*Elymus virginicus*	50	Y	FACW
2	*Verbesina alternifolia*	15	N	FAC
3	*Lonicera japonica*	5	N	FACU
4	*Allium vineale*	3	N	FACU
5	*Asclepias syriaca*	3	N	FACU
6	*Euthamia graminifolia*	3	N	FAC
7	*Dichanthelium clandestinum*	2	N	FAC
8	*Solanum carolinense*	2	N	FACU
9				
10				
11				
12				
		83	= Total Cover	
Woody vine stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across all Strata:	3	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	33.33%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:				
OBL species	0	x 1 =	0	
FACW species	50	x 2 =	100	
FAC species	20	x 3 =	60	
FACU species	38	x 4 =	152	
UPL species	0	x 5 =	0	
Column totals	108	(A)	312	(B)
Prevalence Index = B/A =			2.89	

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- ___ 2 – Dominance Test is >50%
- X 3 – Prevalence Index is ≤3.0[1]
- ___ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 5/3	98%	10YR 5/6	2%	C	M	Gravel Clay Loam	
4-8	7.5YR 4/6	100%						*restrictive layer at 8"

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted gravel from adjacent railroad

Depth (inches): 8"

Hydric Soil Present? N

Remarks:

PHOTOGRAPHS

Sampling Point: DP-10

Photograph 1. Data Point 10 Soil

Photograph 2. Data Point 10 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	2-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-11
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Swale	Local relief (concave, convex, none)	Concave	Slope (%):	3-5%
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.426211	Long:	38.778142
Datum:	NAD 1983				
Soil Map Unit Name:	Gaila sandy loam	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)	
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)	
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)	X
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)	
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)	
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)	
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)	
Iron Deposits (B5)		Stunted or Stressed Plants (D1)	
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)	
Water-Stained Leaves (B9)		Shallow Aquitard (D3)	
Aquatic Fauna (B13)		Microtopographic Relief (D4)	
		FAC-Neutral Test (D5)	

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-11

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum	(Plot size: r= 30')			
1	*Carya cordiformis*	20	Y	FACU
2	*Liriodendron tulipifera*	10	Y	FACU
3	*Quercus alba*	10	Y	FACU
4				
5				
6				
7				
		40	= Total Cover	
Sapling stratum	(Plot size: r= 15')			
1	*Carya cordiformis*	15	Y	FACU
2	*Populus deltoides*	5	Y	FAC
3				
4				
5				
6				
7				
		20	= Total Cover	
Shrub stratum	(Plot size: r= 15')			
1	*Elaeagnus umbellata*	15	Y	
2				
3				
4				
5				
6				
7				
		15	= Total Cover	
Herb stratum	(Plot size: r= 5')			
1	*Microstegium vimineum*	60	Y	FAC
2	*Verbesina alternifolia*	15	N	FAC
3	*Rubus argutus*	10	N	FACU
4	*Lonicera japonica*	10	N	FACU
5	*Lespedeza cuneata*	5	N	FACU
6	*Solanum carolinense*	3	N	FACU
7	*Parathelypteris noveboracensis*	3	N	FAC
8				
9				
10				
11				
12				
		106	= Total Cover	
Woody vine stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 28.57% (A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	83	x 3 =	249	
FACU species	83	x 4 =	332	
UPL species	0	x 5 =	0	
Column totals	166	(A)	581	(B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

_ 1 – Rapid Test for Hydrophytic Vegetation

_ 2 – Dominance Test is >50%

_ 3 – Prevalence Index is ≤3.0[1]

_ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

_ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 4/4	87%	7.5YR 4/6	10%	C	M	Clay Loam	gravel inclusions
			7.5YR 3/1	3%	D	M	Clay Loam	gravel inclusions

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-11

Photograph 1. Data Point 11 Soil

Photograph 2. Data Point 11 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	2-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-12
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Swale	Local relief (concave, convex, none)	Concave	Slope (%):	3-5%
Subregion (LRR or MLRA):	MLRA 136	Lat: -77.427885	Long: 38.778953	Datum:	NAD 1983
Soil Map Unit Name:	Gaila sandy loam	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-12

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1	*Acer rubrum*	10	Y	FAC
2	*Quercus alba*	10	Y	FACU
3				
4				
5				
6				
7				
		20	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1	*Rosa multiflora*	10	Y	FACU
2	*Carya glabra*	5	Y	FACU
3				
4				
5				
6				
7				
		15	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Microstegium vimineum*	50	Y	FAC
2	*Lespedeza cuneata*	20	Y	FACU
3	*Verbesina alternifolia*	5	N	FAC
4	*Rubus argutus*	5	N	FACU
5	*Parathelypteris noveboracensis*	3	N	FAC
6	*Polystichum acrostichoides*	3	N	FACU
7				
8				
9				
10				
11				
12				
		86	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	68	x 3 =	204	
FACU species	53	x 4 =	212	
UPL species	0	x 5 =	0	
Column totals	121	(A)	416	(B)

Prevalence Index = B/A = 3.44

Hydrophytic Vegetation Indicators:

- 1 – Rapid Test for Hydrophytic Vegetation
- 2 – Dominance Test is >50%
- 3 – Prevalence Index is ≤3.0[1]
- 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 4/4	100%					Clay Loam	Gravel inclusions
6-20	10YR 5/6	100%					Clay Loam	Gravel inclusions

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-12

Photograph 1. Data Point 12 Soil

Photograph 2. Data Point1 2 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	2-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-13
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Flat	Local relief (concave, convex, none)	None	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.430288	Long:	38.77943
Datum:	NAD 1983				
Soil Map Unit Name:	Hatboro-Codorus complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report)

Flat wooded area adjacent to railroad. Soils are disturbed and fairly inconsistent with gravel and fill material. Low spots have significant wetland vegetation. there is a fair amount of compaction throughout this area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)	
	Surface Water (A1)			Surface Soil Cracks (B6)
	High Water Table (A2)			Sparsely Vegetated Concave Surface (B8)
	Saturation (A3)		X	Drainage Patterns (B10)
	Water Marks (B1)			Moss Trim Lines (B16)
	Sediment Deposits (B2)			Dry-Season Water Table (C2)
	Drift Deposits (B3)			Crayfish Burrows (C8)
	Algal Mat or Crust (B4)			Saturation Visible on Aerial Imagery (C9)
	Iron Deposits (B5)			Stunted or Stressed Plants (D1)
	Inundation Visible on Aerial Imagery (B7)			Geomorphic Position (D2)
X	Water-Stained Leaves (B9)			Shallow Aquitard (D3)
	Aquatic Fauna (B13)		X	Microtopographic Relief (D4)
				FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	N/A
Water table present?	Yes		No	X	Depth (inches):	N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	N/A

Wetland Hydrology Present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-13

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1	*Platanus occidentalis*	15	Y	FACW
2	*Carya cordiformis*	5	Y	FACU
3	*Betula nigra*	5	Y	FACW
4				
5				
6				
7				
		25	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1	*Platanus occidentalis*	10	Y	FACW
2	*Carya cordiformis*	3	Y	FACU
3				
4				
5				
6				
7				
		13	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1	*Berberis thunbergii*	5	Y	FACU
2				
3				
4				
5				
6				
7				
		5	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Microstegium vimineum*	50	Y	FAC
2	*Solanum carolinense*	20	Y	FACU
3	*Woodwardia areolata*	10	N	FACW
4	*Persicaria maculosa*	5	N	FACW
5	*Fraxinus pennsylvanica*	2	N	FACW
6	*Symphyotrichum lateriflorum*	2	N	FACW
7				
8				
9				
10				
11				
12				
		89	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across all Strata:	8	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	50.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	49	x 2 =	98
FAC species	50	x 3 =	150
FACU species	33	x 4 =	132
UPL species	0	x 5 =	0
Column totals	132 (A)		380 (B)
Prevalence Index = B/A =			2.88

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- ___ 2 – Dominance Test is >50%
- X 3 – Prevalence Index is ≤3.0[1]
- ___ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: DP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	100%					Loam	
18-20	10YR 4/1	95%	10YR 5/8	5%	C	M	Gravely Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Y ___

Remarks:

The soil had mica and gravel inclusions throughout.

PHOTOGRAPHS

Sampling Point: DP-13

Photograph 1. Data Point 13 Soil

Photograph 2. Data Point 13 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-14
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Flat	Local relief (concave, convex, none)	None	Slope (%):	None
Subregion (LRR or MLRA):	MLRA 136	Lat: -77.430761	Long: 38.779397	Datum:	NAD 1983
Soil Map Unit Name:	Glenelg-Buckhall complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

Flat wooded area djacent to railroad. Soils are disturbed and fairly inconsistent with gravel and fill material. Low spots have significant wetland vegetation. There is a fair amount of compaction throughout this area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-14

Tree Stratum (Plot size: r= 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Carya cordiformis*	20	Y	FACU
2 *Platanus occidentalis*	15	Y	FACW
3 *Juniperus virginiana*	5	N	FACU
4			
5			
6			
7			
	40	= Total Cover	

Sapling stratum (Plot size: r= 15')			
1 *Asimina triloba*	10	Y	FAC
2			
3			
4			
5			
6			
7			
	10	= Total Cover	

Shrub stratum (Plot size: r= 15')			
1 *Berberis thunbergii*	10	Y	FACU
2 *Elaeagnus umbellata*	5	Y	FACU
3			
4			
5			
6			
7			
	15	= Total Cover	

Herb stratum (Plot size: r= 5')			
1 *Microstegium vimineum*	50	Y	FAC
2 *Verbesina alternifolia*	10	N	FAC
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	60	= Total Cover	

Woody vine stratum (Plot size: r= 30')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across all Strata:	6	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	50.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	15	x 2 =	30	
FAC species	70	x 3 =	210	
FACU species	40	x 4 =	160	
UPL species	0	x 5 =	0	
Column totals	125	(A)	400	(B)
Prevalence Index = B/A =			3.20	

Hydrophytic Vegetation Indicators:

- 1 – Rapid Test for Hydrophytic Vegetation
- 2 – Dominance Test is >50%
- 3 – Prevalence Index is ≤3.0[1]
- 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	100%					Gravely Loam	
9-20	10YR 5/4	97%	7.5YR 4/6	3%	C	M	Gravely Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-14

Photograph 1. Data Point 14 Soil

Photograph 2. Data Point 14 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-15
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Hillslope	Local relief (concave, convex, none)	Convex	Slope (%):	3-5%
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.433035	Long:	38.778092
Datum:	NAD 1983				
Soil Map Unit Name:	Hatboro-Codorus complex	NWI Classification:	PFO1A		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		X Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches): 0

Wetland Hydrology Present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-15

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum	(Plot size: r= 15')			
1	*Salix nigra*	5	Y	OBL
2				
3				
4				
5				
6				
7				
		5	= Total Cover	
Shrub stratum	(Plot size: r= 15')			
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Herb stratum	(Plot size: r= 5')			
1	*Microstegium vimineum*	40	Y	FAC
2	*Arthraxon hispidus*	10	N	FAC
3	*Carex frankii*	10	N	OBL
4	*Dichanthelium clandestinum*	5	N	FAC
5	*Typha latifolia*	5	N	OBL
6	*Persicaria maculosa*	3	N	FACW
7	*Elymus virginicus*	3	N	FACW
8	*Solanum carolinense*	2	N	FACU
9	*Allium vineale*	2	N	FACU
10				
11				
12				
		80	= Total Cover	
Woody vine stratum	(Plot size: r= 30')			
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	2	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	20	x 1 =	20
FACW species	6	x 2 =	12
FAC species	55	x 3 =	165
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column totals	85 (A)		213 (B)
Prevalence Index = B/A =			2.51

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- X 3 – Prevalence Index is ≤3.0[1]
- ___ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	5YR 4/3	100%					Silty Clay Loam	
8-20	5YR 4/3	85%	7.5YR 5/6	15%	C	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- X Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Y ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-15

Photograph 1. Data Point 15 Soil

Photograph 2. Data Point 15 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-16
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Floodplain	Local relief (concave, convex, none)	Flat	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.433201	Long:	38.778167
Datum:	NAD 1983				
Soil Map Unit Name:	Hatboro-Codorus complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

This data point was collected in a floodplain depression adjacent to a park and railroad within a utility easement.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-16

Tree Stratum (Plot size: r= 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Ailanthus altissima*	5	Y	FACU
2 *Acer negundo*	5	Y	FAC
3			
4			
5			
6			
7			
	10	= Total Cover	

Sapling stratum (Plot size: r= 15')			
1			
2			
3			
4			
5			
6			
7			
	0	= Total Cover	

Shrub stratum (Plot size: r= 15')			
1			
2			
3			
4			
5			
6			
7			
	0	= Total Cover	

Herb stratum (Plot size: r= 5')			
1 *Microstegium vimineum*	80	Y	FAC
2 *Verbesina alternifolia*	5	N	FAC
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	85	= Total Cover	

Woody vine stratum (Plot size: r= 30')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	3	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	66.67%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	90	x 3 =	270	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column totals	95	(A)	290	(B)
Prevalence Index = B/A =			3.05	

Hydrophytic Vegetation Indicators:

	1 – Rapid Test for Hydrophytic Vegetation
X	2 – Dominance Test is >50%
	3 – Prevalence Index is ≤3.0[1]
	4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
	Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	5YR 3/3	100%					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-16

Photograph 1. Data Point 16 Soil

Photograph 2.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-17
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Floodplain	Local relief (concave, convex, none)	Concave	Slope (%):	0-Jan
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.433475	Long: 38.777908	Datum: NAD 1983
Soil Map Unit Name:	Hatboro-Codorus complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

This data point was collected in a floodplain depression adjacent to a park and railroad within a utility easement.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-17

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Microstegium vimineum*	80	Y	FAC
2	*Verbesina alternifolia*	5	N	FAC
3	*Ipomoea purpurea*	5	N	UPL
4	*Galium aparine*	3	N	FACU
5				
6				
7				
8				
9				
10				
11				
12				
		93	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across all Strata:	1	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	85	x 3 =	255	
FACU species	3	x 4 =	12	
UPL species	5	x 5 =	25	
Column totals	93	(A)	292	(B)
Prevalence Index = B/A =			3.14	

Hydrophytic Vegetation Indicators:

- ( ) 1 – Rapid Test for Hydrophytic Vegetation
- (X) 2 – Dominance Test is >50%
- ( ) 3 – Prevalence Index is ≤3.0[1]
- ( ) 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ( ) Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-9	5YR 4/4	100%					Sandy Loam	
9								Refusal due to compaction

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

There was a compacted gravel layer starting at 9" from the soil surface.

PHOTOGRAPHS

Sampling Point: DP-17

Photograph 1. Data Point 17 Soil

Photograph 2. Data Point 17 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-18
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Flat	Local relief (concave, convex, none)	None	Slope (%):	None
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.433491	Long: 38.777691	Datum: NAD 1983
Soil Map Unit Name:	Hatboro-Codorus complex	NWI Classification:	PFO1A		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report)

This data point was collected in a floodplain depression adjacent to a park and railroad within a utility easement.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		X Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches): Surface

Wetland Hydrology Present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-18

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Microstegium vimineum*	50	Y	FAC
2	*Carex frankii*	20	Y	OBL
3	*Arthraxon hispidus*	10	N	FAC
4	*Juncus effusus*	5	N	FACW
5	*Solanum carolinense*	3	N	FACU
6	*Symphyotrichum racemosum*	3	N	FACW
7				
8				
9				
10				
11				
12				
		91	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	2	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:				
OBL species	20	x 1 =	20	
FACW species	8	x 2 =	16	
FAC species	60	x 3 =	180	
FACU species	3	x 4 =	12	
UPL species	0	x 5 =	0	
Column totals	91	(A)	228	(B)
Prevalence Index = B/A =			2.51	

Hydrophytic Vegetation Indicators:

	1 – Rapid Test for Hydrophytic Vegetation
X	2 – Dominance Test is >50%
X	3 – Prevalence Index is ≤3.0[1]
	4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
	Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	5YR 4/3	100%					Silty Clay Loam	
8-20	5YR 4/3	85%	7.5YR 5/6	15%	C	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- X Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Y ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-18

Photograph 1. Data Point 18 Soil

Photograph 2. Data Point 18 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-19
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Flat	Local relief (concave, convex, none)	None	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.4337	Long: 38.777536	Datum: NAD 1983
Soil Map Unit Name:	Hatboro-Codorus complex	NWI Classification:	PFO1A		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

This data point was collected in a floodplain depression adjacent to a park and railroad within a utility easement.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-19

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1	*Platanus occidentalis*	15	Y	FACW
2				
3				
4				
5				
6				
7				
		15	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1	*Elaeagnus umbellata*	5	Y	
2				
3				
4				
5				
6				
7				
		5	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Microstegium vimineum*	40	Y	FAC
2	*Andropogon virginicus*	15	N	FACU
3	*Lespedeza cuneata*	10	N	FACU
4	*Arthraxon hispidus*	5	N	FAC
5	*Carex frankii*	5	N	OBL
6	*Juncus effusus*	3	N	FACW
7	*Eupatorium rotundifolium*	2	N	FAC
8				
9				
10				
11				
12				
		80	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	3	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	66.67%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	5	x 1 =	5	
FACW species	18	x 2 =	36	
FAC species	47	x 3 =	141	
FACU species	25	x 4 =	100	
UPL species	0	x 5 =	0	
Column totals	95	(A)	282	(B)
Prevalence Index = B/A =			2.97	

Hydrophytic Vegetation Indicators:

- ( ) 1 – Rapid Test for Hydrophytic Vegetation
- (X) 2 – Dominance Test is >50%
- (X) 3 – Prevalence Index is ≤3.0[1]
- ( ) 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ( ) Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/4	100%					Clay Loam	
2-20	10YR 5/6	80%	10YR 5/4	20%	D	M	Clay Loam	Gravel inclusions

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148**)
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-19

Photograph 1. Data Point 19 Soil

Photograph 2. Data Point 19 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-20
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Floodplain	Local relief (concave, convex, none)	Flat	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat: -77.433952	Long: 38.77759	Datum:	NAD 1983
Soil Map Unit Name:	Hatboro-Codorus complex	NWI Classification:	PFO1A		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

This data point was collected in a floodplain depression adjacent to a park and railroad within a utility easement.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-20

Tree Stratum (Plot size: r= 30')	Absolute % Cover	Dominant Species	Indicator Staus
1 *Platanus occidentalis*	10	Y	FACW
2			
3			
4			
5			
6			
7			
	10	= Total Cover	

Sapling stratum (Plot size: r= 15')			
1	5	Y	
2	5	Y	
3			
4			
5			
6			
7			
	10	= Total Cover	

Shrub stratum (Plot size: r= 15')			
1			
2			
3			
4			
5			
6			
7			
	0	= Total Cover	

Herb stratum (Plot size: r= 5')			
1 *Microstegium vimineum*	50	Y	FAC
2 *Bromus inermis*	20	Y	UPL
3 *Ambrosia artemisiifolia*	10	N	FACU
4 *Chamaecrista fasciculata*	10	N	FACU
5 *Verbesina encelioides*	3	N	FACU
6 *Teucrium canadense*	3	N	FACW
7 *Rosa multiflora*	3	N	FACU
8			
9			
10			
11			
12			
	99	= Total Cover	

Woody vine stratum (Plot size: r= 30')			
1			
2			
3			
4			
5			
	0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	5	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	40.00%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	13	x 2 =	26	
FAC species	50	x 3 =	150	
FACU species	26	x 4 =	104	
UPL species	20	x 5 =	100	
Column totals	109	(A)	380	(B)
Prevalence Index = B/A =			3.49	

Hydrophytic Vegetation Indicators:

- 1 – Rapid Test for Hydrophytic Vegetation
- 2 – Dominance Test is >50%
- 3 – Prevalence Index is ≤3.0[1]
- 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	5YR 4/4	100%					Sandy Loam	
9								Refusal due to compaction

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Refusal due to compacted gravel

Depth (inches): 9'

Hydric Soil Present? N

Remarks:

PHOTOGRAPHS

Sampling Point: DP-20

Photograph 1. Data Point 20 Soil

Photograph 2. Data Point 20 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-21
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/a		
Landform (hillslope, terrace, etc.):	depression	Local relief (concave, convex, none)	concave	Slope (%):	0-2
Subregion (LRR or MLRA):	MLRA 136	Lat: -77.443678	Long: 38.763466	Datum:	NAD 1983
Soil Map Unit Name:	Brentsville sandy loam	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report)

adjacent to railroad

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
X Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
X High Water Table (A2)	X Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	X Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	X Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes X	No	Depth (inches):	Surface	
Water table present?	Yes X	No	Depth (inches):	Surface	**Wetland Hydrology Present?** Y
Saturation present? (includes capillary fringe)	Yes X	No	Depth (inches):	Surface	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-21

Tree Stratum (Plot size: r= 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	0 = Total Cover		
Sapling stratum (Plot size: r= 15')			
1			
2			
3			
4			
5			
6			
7			
	0 = Total Cover		
Shrub stratum (Plot size: r= 15')			
1 *Elaeagnus umbellata*	5	Y	
2			
3			
4			
5			
6			
7			
	5 = Total Cover		
Herb stratum (Plot size: r= 5')			
1 *Microstegium vimineum*	40	Y	FAC
2 *Mentha spicata*	10	Y	FACW
3 *Rosa multiflora*	5	N	FACU
4 *Dulichium arundinaceum*	5	N	OBL
5 *Persicaria perfoliata*	5	N	FAC
6 *Rubus argutus*	5	N	FACU
7 *Lonicera japonica*	3	N	FACU
8 *Verbesina alternifolia*	3	N	FAC
9 *Solanum carolinense*	3	N	FACU
10 *Elaeagnus umbellata*	3	N	FACU
11			
12			
	82 = Total Cover		
Woody vine stratum (Plot size:)			
1			
2			
3			
4			
5			
	0 = Total Cover		

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	3	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	66.67%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	5	x 1 =	5	
FACW species	10	x 2 =	20	
FAC species	48	x 3 =	144	
FACU species	19	x 4 =	76	
UPL species	0	x 5 =	0	
Column totals	82	(A)	245	(B)
Prevalence Index = B/A =			2.99	

Hydrophytic Vegetation Indicators:

- [ ] 1 – Rapid Test for Hydrophytic Vegetation
- [X] 2 – Dominance Test is >50%
- [X] 3 – Prevalence Index is ≤3.0[1]
- [ ] 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	100%					clay loam	
12-18	10YR 4/1	90%	7.5YR 4/3	10%	C	M	Loamy sand	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Y ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-21

Photograph 1. Data Point 21 Soil

Photograph 2. Data Point 21 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	3-Nov-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-22
Investigator(s):	Graham Shell and Katie Ratcliffe	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Flat	Local relief (concave, convex, none)	none	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	-77.446897	Long:	38.761157
Datum:	NAD 1983				
Soil Map Unit Name:	Brentsville sandy loam	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-22

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum (Plot size: r= 15'')				
1	*Ulmus americana*	10	Y	FACW
2				
3				
4				
5				
6				
7				
		10	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Lespedeza cuneata*	30	Y	FACU
2	*Symphyotrichum racemosum*	20	Y	FACW
3	*Festuca rubra*	15	N	FACU
4	*Tridens flavus*	15	N	FACU
5	*Rubus argutus*	5	N	FACU
6	*Achillea millefolium*	5	N	FACU
7	*Eupatorium serotinum*	5	N	FAC
8				
9				
10				
11				
12				
		95	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across all Strata:	3	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	66.67%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	5	x 3 =	15
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column totals	105 (A)		355 (B)
Prevalence Index = B/A =			3.38

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is ≤3.0[1]
- ___ 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: DP-22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	5YR 3/4	100%					gravely loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-22

Photograph 1. Data Point 22 Soil

Photograph 2. Data Point 22 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	10-Oct-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-23
Investigator(s):	Caitlin Bishop	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Depression	Local relief (concave, convex, none)	Concave	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	38.747272	Long: -77.489982	Datum: NAD 83
Soil Map Unit Name:	Urban land-Udorthents complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Indicators of wetland hydrology present?	Y		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	X Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-23

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1	*Fraxinus pennsylvanica*	10	Y	FACW
2				
3				
4				
5				
6				
7				
		10	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Euthamia graminifolia*	25	Y	FAC
2	*Juncus effusus*	15	Y	FACW
3	*Solidago altissima*	10	Y	FACU
4	*Carex lurida*	10	Y	OBL
5	*Mimulus ringens*	7	N	OBL
6	*Vernonia noveboracensis*	7	N	FACW
7	*Chasmanthium laxum*	5	N	FAC
8	*Verbena urticifolia*	5	N	FAC
9	*Symphyotrichum lateriflorum*	5	N	FACW
10				
11				
12				
		89	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1	*Toxicodendron radicans*	5	Y	FAC
2	*Lonicera japonica*	5	Y	FACU
3				
4				
5				
		10	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	5	(A)
Total Number of Dominant Species Across all Strata:	7	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	71.43%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	17	x 1 =	17	
FACW species	37	x 2 =	74	
FAC species	40	x 3 =	120	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column totals	109	(A)	271	(B)
Prevalence Index = B/A =			2.49	

Hydrophytic Vegetation Indicators:

- ( ) 1 – Rapid Test for Hydrophytic Vegetation
- (X) 2 – Dominance Test is >50%
- (X) 3 – Prevalence Index is ≤3.0[1]
- ( ) 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ( ) Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL Sampling Point: DP-23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/4	95%	7.5YR 5/8	10%	C	PL	Clay loam	
4-18	5YR 4/6	95%	2.5YR 4/8	5%	C	M	Clay	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- X Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Y ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-23

Photograph 1. Data Point 23 Soil

Photograph 2. Data Point 23 Vicinity

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	Line #2011 Cannon Branch to Clifton	City/County:	Clifton	Sampling Date:	10-Oct-2022
Applicant/Owner:	Dominion Energy	State:	Virginia	Sampling Point:	DP-24
Investigator(s):	Caitlin Bishop	Section, Township, Range:	N/A		
Landform (hillslope, terrace, etc.):	Flat	Local relief (concave, convex, none)	Slightly convex	Slope (%):	N/A
Subregion (LRR or MLRA):	MLRA 136	Lat:	38.747267	Long: -77.490134	Datum: NAD 83
Soil Map Unit Name:	Urban land-Udorthents complex	NWI Classification:	None		

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Indicators of wetland hydrology present?	N		

Remarks: (Explain alternative procedures here or in a separate report)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)		Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)
Water-Stained Leaves (B9)		Shallow Aquitard (D3)
Aquatic Fauna (B13)		Microtopographic Relief (D4)
		FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches): N/A
Water table present?	Yes		No	X	Depth (inches): N/A
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches): N/A

Wetland Hydrology Present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-24

		Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Sapling stratum (Plot size: r= 15')				
1	*Fraxinus pennsylvanica*	10	Y	FACW
2				
3				
4				
5				
6				
7				
		10	= Total Cover	
Shrub stratum (Plot size: r= 15')				
1				
2				
3				
4				
5				
6				
7				
		0	= Total Cover	
Herb stratum (Plot size: r= 5')				
1	*Rubus argutus*	20	Y	FACU
2	*Solidago altissima*	20	Y	FACU
3	*Oxalis stricta*	10	N	FACU
4	*Setaria pumila*	5	N	FAC
5	*Verbena urticifolia*	5	N	FAC
6				
7				
8				
9				
10				
11				
12				
		60	= Total Cover	
Woody vine stratum (Plot size: r= 30')				
1				
2				
3				
4				
5				
		0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species that are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across all Strata:	3	(B)
Percent of Dominant Species that are OBL, FACW, or FAC:	33.33%	(A/B)

Prevalence Index Worksheet:

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	10	x 2 =	20	
FAC species	10	x 3 =	30	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column totals	70	(A)	250	(B)
Prevalence Index = B/A =			3.57	

Hydrophytic Vegetation Indicators:

- 1 – Rapid Test for Hydrophytic Vegetation
- 2 – Dominance Test is >50%
- 3 – Prevalence Index is ≤3.0[1]
- 4 – Morphogical Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: DP-24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (In.)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/3	100%					Clay loam	
4-18	5YR 4/6	75%	5YR 3/3	25%	C	M	Clay loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

[3]Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? N ___

Remarks:

PHOTOGRAPHS

Sampling Point: DP-24

Photograph 1. Data Point 24 Soil

Photograph 2. Data Point 24 Vicinity

APPENDIX D
WATERS OF THE U.S. DELINEATION MAP

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- APPROXIMATE PROJECT LIMITS
- PERENNIAL (R3) STREAM LIMITS
- INTERMITTENT (R4) STREAM LIMITS
- EPHEMERAL (R6) STREAM LIMITS
- PALUSTRINE EMERGENT (PEM) WETLAND LIMITS
- PALUSTRINE FORESTED (PFO) WETLAND LIMITS
- PALUSTRINE SCRUB SHRUB (PSS) WETLAND LIMITS
- PALUSTRINE OPEN WATER (POW) WETLAND LIMITS

NOTES:

1. PROJECT LIMITS ARE APPROXIMATE ARE SOURCED FROM DOMINION ENERGY VIRGINIA. TOPOGRAPHIC CONTOURS BASED ON VGIN LIDAR. AERIAL IMAGERY FROM VGIN.
2. LIMITS OF WETLANDS AND STREAMS DEPICTED ON THIS MAP WERE GPS LOCATED AND DELINEATED BY RES.
3. WETLANDS WERE DELINEATED ON NOVEMBER 3-4, 2020, SEPTEMBER 21, 2022, OCTOBER 4-5, 2022, OCTOBER 10-12, AND NOVEMBER 3, 2022 IN ACCORDANCE WITH PROCEDURES OUTLINED IN THE U.S. ARMY CORPS OF ENGINEERS (USACE) 1987 WETLAND DELINEATION MANUAL AND THE APRIL 2012 EASTERN MOUNTAINS AND PIEDMONT REGIONAL SUPPLEMENT V. 2.0. OTHER WATERS OF THE U.S. ARE DELINEATED BASED ON THE PRESENCE OF AN ORDINARY HIGH WATER MARK, AS DEFINED BY THE USACE DEFINITION OF A WATER OF THE U.S.

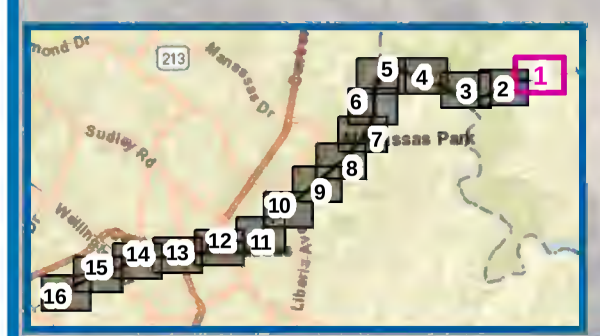
SITE DATA:
TOTAL PROJECT AREA = 54.22 +/- AC
TOTAL WATERS OF THE U.S. = 2.93 +/- AC

STREAMS
TOTAL R6 STREAMS = 0.01 +/- AC (120 +/- LF)
TOTAL R4 STREAMS = 0.06 +/- AC (805 +/- LF)
TOTAL R3 STREAMS = 0.59 +/- AC (1,865 +/- LF)
TOTAL STREAMS = 0.66 +/- AC (2,790 +/- LF)

OPEN WATER
TOTAL POW = 0.59 +/- AC

WETLANDS
TOTAL PEM = 1.23 +/- AC
TOTAL PFO = 0.36 +/- AC
TOTAL PSS = 0.09 +/- AC
TOTAL WETLANDS = 1.68 +/- AC

R4/S1
R4/S2
R4/S3
R3/S4
R3/S5
PFO/W1
PFO/W2
PFO/W3
PFO/W4
PFO/W5
PEM/W6
POW/W7
PEM/W9
CULVERT
DP1
DP2
DP3
DP4
Clifton Creek Dr
Evans Ford Rd
Dunquin Ct
SHEET 2
SHEET 1



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WATERS OF THE U.S. DELINEATION MAP

LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 1 OF 16

PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE: 11/04/2022
REVISIONS: 03/06/2023 (LC)
11/30/2022 (LC)

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- APPROXIMATE PROJECT LIMITS
- PERENNIAL (R3) STREAM LIMITS
- INTERMITTENT (R4) STREAM LIMITS
- EPHEMERAL (R6) STREAM LIMITS
- PALUSTRINE EMERGENT (PEM) WETLAND LIMITS
- PALUSTRINE FORESTED (PFO) WETLAND LIMITS
- PALUSTRINE SCRUB SHRUB (PSS) WETLAND LIMITS
- PALUSTRINE OPEN WATER (POW) WETLAND LIMITS

NOTES:

1. PROJECT LIMITS ARE APPROXIMATE ARE SOURCED FROM DOMINION ENERGY VIRGINIA. TOPOGRAPHIC CONTOURS BASED ON VGIN LIDAR. AERIAL IMAGERY FROM VGIN.
2. LIMITS OF WETLANDS AND STREAMS DEPICTED ON THIS MAP WERE GPS LOCATED AND DELINEATED BY RES.
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SITE DATA:
TOTAL PROJECT AREA = 54.22 +/- AC
TOTAL WATERS OF THE U.S. = 2.93 +/- AC

STREAMS
TOTAL R6 STREAMS = 0.01 +/- AC (120 +/- LF)
TOTAL R4 STREAMS = 0.06 +/- AC (805 +/- LF)
TOTAL R3 STREAMS = 0.59 +/- AC (1,865 +/- LF)
TOTAL STREAMS = 0.66 +/- AC (2,790 +/- LF)

OPEN WATER
TOTAL POW = 0.59 +/- AC

WETLANDS
TOTAL PEM = 1.23 +/- AC
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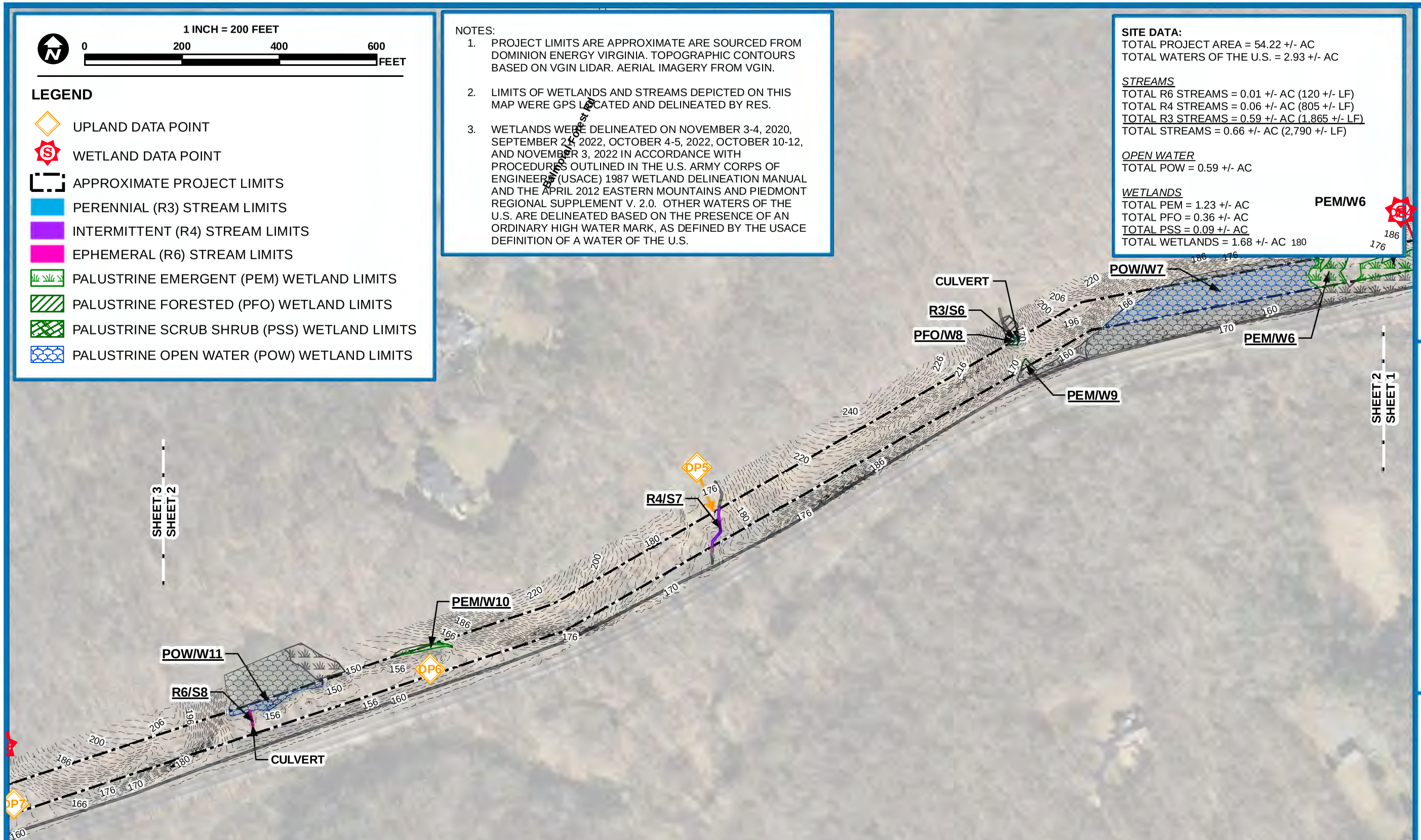

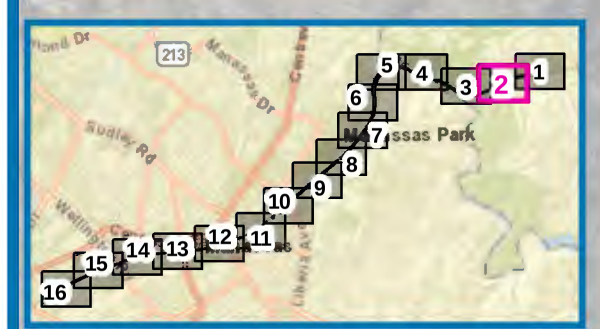

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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S. DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 2 OF 16

PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE: 11/04/2022
REVISIONS: 03/06/2023 (LC)
11/30/2022 (LC)

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

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- WETLAND DATA POINT
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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S. DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 3 OF 16

PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE: 11/04/2022
REVISIONS: 03/06/2023 (LC)
11/30/2022 (LC)

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

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- WETLAND DATA POINT
- APPROXIMATE PROJECT LIMITS
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LINE #2011 230 kV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S. DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 4 OF 16

PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE: 11/04/2022
REVISIONS: 03/06/2023 (LC)
11/30/2022 (LC)

SHEET 5
SHEET 4
SHEET 4
SHEET 3

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

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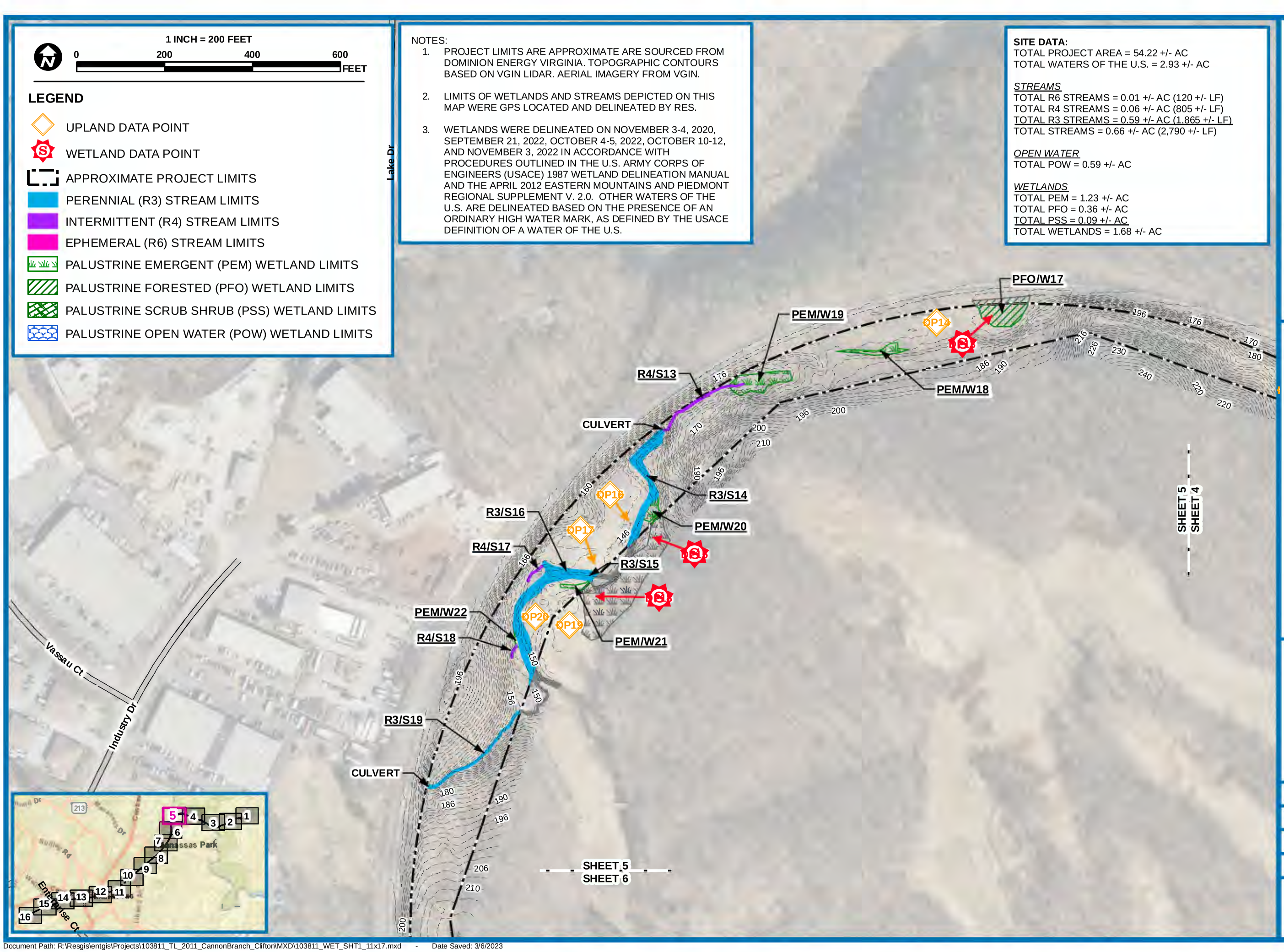

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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S. DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 5 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

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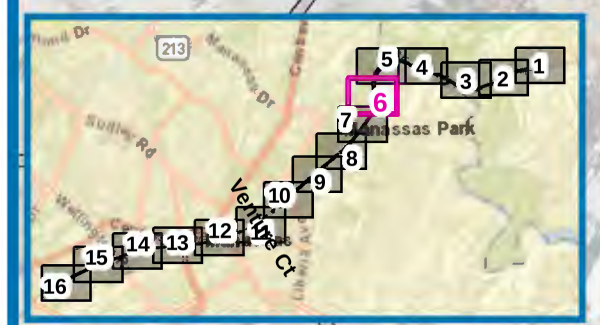
SHEET 5
SHEET 6

Industry Dr
Enterprise Ct
Unnamed
Owens Dr
Eagle Ct

CULVERT
R3/S20

SHEET 6
SHEET 7



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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 6 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
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OPEN WATER
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WETLANDS
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SHEET 6
SHEET 7
SHEET 7
SHEET 8
CULVERT
R4/S21
R3/S22
R3/S23
CULVERT
Owens Dr
Venture Ct
Capital Ct
Unnamed
Corbett Pl
Corbett Cir
Corbett Cir
Pickens Pl
Holmes Pl
Henderson Pl
Park Station Ct
Wigfall Way
Battalion Way
Park Center Ct
Manassas Park
213
Sudley Rd
190
200
196
216
210
200
200
190
180
206
180
186
186
196
226
220
210
226
216
210

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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S. DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 7 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

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1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
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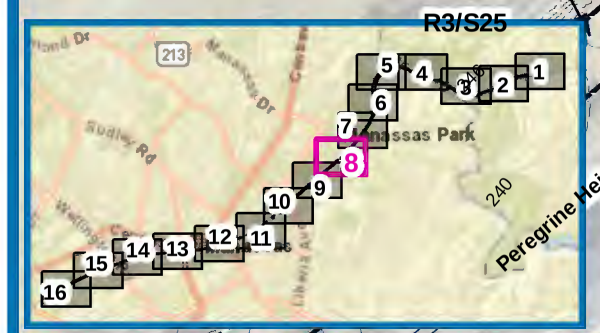

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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 8 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

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SITE DATA: **R3/S24**

TOTAL PROJECT AREA = 54.22 +/- AC
TOTAL WATERS OF THE U.S. = 2.93 +/- AC

STREAMS **PEM/W23**

TOTAL R6 STREAMS = 0.01 +/- AC (120 +/- LF)
TOTAL R4 STREAMS = 0.06 +/- AC (805 +/- LF)
TOTAL R3 STREAMS = 0.59 +/- AC (1,865 +/- LF)
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OPEN WATER

TOTAL POW = 0.59 +/- AC

WETLANDS

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PEM/W24
WASHED OUT STRUCTURE
R3/S25
SHEET 8
SHEET 9
SHEET 9
SHEET 10
PEM/W25
R4/S26
DP22
Euclid Ave
Euclid Ave
Unnamed
Kao Ct
Peregrine Heights Rd
Tudor Hall Ln
Dahlgren Ridge Rd
Connor House Rd
Unnamed
Honey Bee Way
Handsome Joe Ln
Wyche Knoll Ln
Agnes Ln
Railroad Dr
Water Station Dr
Manassas Dr
Joseph Way
Manassas Park
Unnamed
230
236
246
240
250
256
260
266
270

res
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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 9 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

Document Path: R:\Resgis\entgis\Projects\103811_TL_2011_CannonBranch_Clifton\MXD\103811_WET_SHT1_11x17.mxd - Date Saved: 3/6/2023

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- APPROXIMATE PROJECT LIMITS
- PERENNIAL (R3) STREAM LIMITS
- INTERMITTENT (R4) STREAM LIMITS
- EPHEMERAL (R6) STREAM LIMITS
- PALUSTRINE EMERGENT (PEM) WETLAND LIMITS
- PALUSTRINE FORESTED (PFO) WETLAND LIMITS
- PALUSTRINE SCRUB SHRUB (PSS) WETLAND LIMITS
- PALUSTRINE OPEN WATER (POW) WETLAND LIMITS

NOTES:

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SITE DATA:
TOTAL PROJECT AREA = 54.22 +/- AC
TOTAL WATERS OF THE U.S. = 2.93 +/- AC

STREAMS
TOTAL R6 STREAMS = 0.01 +/- AC (120 +/- LF)
TOTAL R4 STREAMS = 0.06 +/- AC (805 +/- LF)
TOTAL R3 STREAMS = 0.59 +/- AC (1,865 +/- LF)
TOTAL STREAMS = 0.66 +/- AC (2,790 +/- LF)

OPEN WATER
TOTAL POW = 0.59 +/- AC

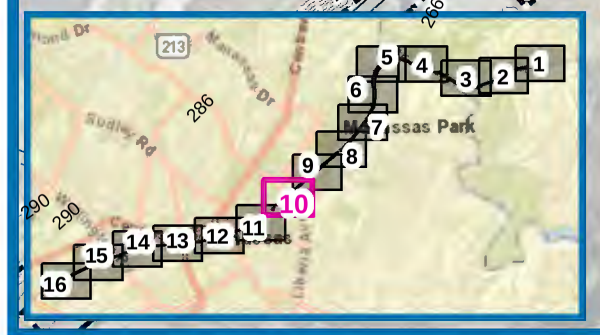
WETLANDS
TOTAL PEM = 1.23 +/- AC
TOTAL PFO = 0.36 +/- AC
TOTAL PSS = 0.09 +/- AC
TOTAL WETLANDS = 1.68 +/- AC

SHEET 9
SHEET 10

PEM/W25
R4/S26
CULVERT
R4/S27

SHEET 10
SHEET 11

Euclid Ave
Jerrys Cir
Euclid Ct
I Beam Ln
Liberia Ave
Clay Ln
Graves Ln
Broad Pl
Quarry Rd
Battery Heights Blvd
Cannoneer Ct
Knight Station Way
Kos Ln
Richmond Ave
Sudley Rd
Manassas Park



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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 10 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- APPROXIMATE PROJECT LIMITS
- PERENNIAL (R3) STREAM LIMITS
- INTERMITTENT (R4) STREAM LIMITS
- EPHEMERAL (R6) STREAM LIMITS
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- PALUSTRINE OPEN WATER (POW) WETLAND LIMITS

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OPEN WATER
TOTAL POW = 0.59 +/- AC

WETLANDS
TOTAL PEM = 1.23 +/- AC
TOTAL PFO = 0.36 +/- AC
TOTAL PSS = 0.09 +/- AC
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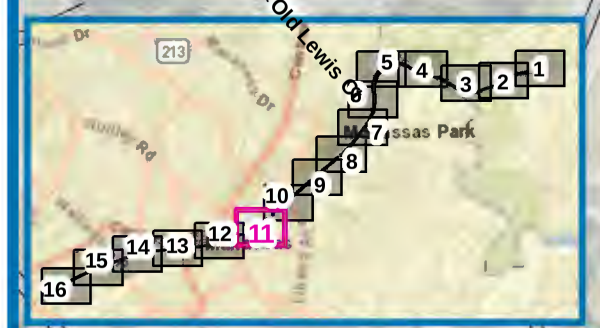
SHEET 10
SHEET 11
SHEET 12
SHEET 11

PEM/W26
R3/S28
PEM/W28
PEM/W27
R3/S29
R3/S30
PSS/W29

Excelsior Ave
Battery Heights Blvd
Litho Ln
Church St
Buttress Ln
Cannoneer Ct
Coggs Bill Dr
Crozier Ct
Jayhawk Ter
Penhook Ct
Metcalf Blvd
Tudor Oaks Dr
Lane Scott Ct
Deblanc Pl
Old Lewis Cir
Natural Bridge Ct
Sanderling Dr
Brigantine Ln
Mayfield Ct
Signal Hill Rd



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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 11 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

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0 200 400 600 FEET

LEGEND

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- WETLAND DATA POINT
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- PERENNIAL (R3) STREAM LIMITS
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- EPHEMERAL (R6) STREAM LIMITS
- PALUSTRINE EMERGENT (PEM) WETLAND LIMITS
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TOTAL WATERS OF THE U.S. = 2.93 +/- AC

STREAMS
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TOTAL R3 STREAMS = 0.59 +/- AC (1,865 +/- LF)
TOTAL STREAMS = 0.66 +/- AC (2,790 +/- LF)

OPEN WATER
TOTAL POW = 0.59 +/- AC

WETLANDS
TOTAL PEM = 1.23 +/- AC
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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 12 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

Document Path: R:\Resgis\entgis\Projects\103811_TL_2011_CannonBranch_Clifton\MXD\103811_WET_SHT1_11x17.mxd - Date Saved: 3/6/2023

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- APPROXIMATE PROJECT LIMITS
- PERENNIAL (R3) STREAM LIMITS
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SITE DATA:
TOTAL PROJECT AREA = 94.22 +/- AC
TOTAL WATERS OF THE U.S. = 2.93 +/- AC

STREAMS
TOTAL R6 STREAMS = 0.01 +/- AC (120 +/- LF)
TOTAL R4 STREAMS = 0.06 +/- AC (805 +/- LF)
TOTAL R3 STREAMS = 0.59 +/- AC (1,865 +/- LF)
TOTAL STREAMS = 0.66 +/- AC (2,790 +/- LF)

OPEN WATER
TOTAL POW = 0.59 +/- AC

WETLANDS
TOTAL PEM = 1.23 +/- AC
TOTAL PFO = 0.36 +/- AC
TOTAL PSS = 0.09 +/- AC
TOTAL WETLANDS = 1.68 +/- AC

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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 13 OF 16

PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE: 11/04/2022
REVISIONS: 03/06/2023 (LC)
11/30/2022 (LC)

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- APPROXIMATE PROJECT LIMITS
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OPEN WATER
TOTAL POW = 0.59 +/- AC

WETLANDS
TOTAL PEM = 1.23 +/- AC
TOTAL PFO = 0.36 +/- AC
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LINE #2011 230 KV
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APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S. DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 14 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

Document Path: R:\Resgis\entgis\Projects\103811_TL_2011_CannonBranch_Clifton\MXD\103811_WET_SHT1_11x17.mxd - Date Saved: 3/6/2023

1 INCH = 200 FEET

0 200 400 600 FEET

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
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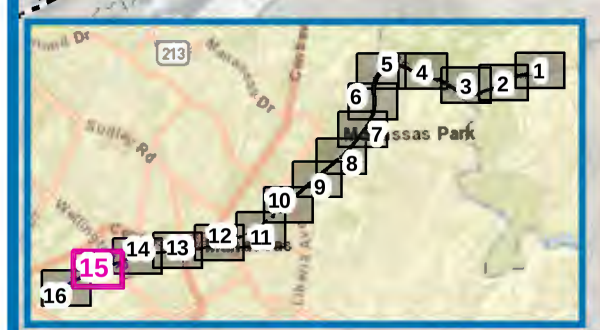
TOTAL STREAMS = 0.66 +/- AC (2,790 +/- LF)

OPEN WATER
TOTAL POW = 0.59 +/- AC

WETLANDS
TOTAL PEM = 1.09 +/- AC
TOTAL PFO = 0.36 +/- AC
TOTAL PSS = 0.09 +/- AC
TOTAL WETLANDS = 1.68 +/- AC

Foster Dr
Technology Dr
Wellington Rd
Dean Dr
Dean Park Ln
PEM/W35
PEM/W36
PEM/W37
OP24
SHEET 15
SHEET 14
SHEET 16
SHEET 15
276
270
266
260
256
250
246
240



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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 15 OF 16

PROJECT MANAGER:	CZ
DRAWN:	LC
JOB NUMBER:	103811
DATE:	11/04/2022
REVISIONS:	03/06/2023 (LC) 11/30/2022 (LC)

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0 200 400 600 FEET

LEGEND

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- WETLAND DATA POINT
- APPROXIMATE PROJECT LIMITS
- PERENNIAL (R3) STREAM LIMITS
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OPEN WATER
TOTAL POW = 0.59 +/- AC

WETLANDS
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Dean Dr
Foster Dr
Central Park Dr
SHEET 16
SHEET 15
PEM/W38
R4/S31
R6/S32
230
236
240
246
250
256
270

res
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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

WATERS OF THE U.S.
DELINEATION MAP

CITY OF MANASSAS,
CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

SHEET 16 OF 16

PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE: 11/04/2022
REVISIONS: 03/06/2023 (LC)
11/30/2022 (LC)

1408 Roseneath Road, Suite B
Richmond, VA 23230

Corporate Headquarters
6575 West Loop South, Suite 300
Bellaire, TX 77401
Main: 713.520.5400

March 14, 2023

Mr. James Young
Dominion Energy Virginia
120 Tredegar St.
Richmond, VA 23219

Re: Solid and Hazardous Waste Search
Line #2011 230 kV Partial Rebuild
Manassas, Manassas Park, Prince William County, and Fairfax County, Virginia

Dear Mr. Young:

RES conducted a database review for federal and state solid and hazardous wastes and petroleum release sites within a 0.5-mile radius of the proposed Line #2011 230 kV Partial Rebuild Project (the "Project" or "Partial Rebuild Project") located in the Cities of Manassas and Manassas Park and Prince William County and Fairfax Counties, Virginia. The Partial Rebuild Project consists of the following components:

- Rebuild approximately 7.25 miles of existing overhead 230 kV transmission Line #2011 from existing Structure #2011/68, which is located one span outside of the Company's existing Cannon Branch Substation and is not being replaced, to the Clifton Substation. Specifically, the Company proposes to replace the existing Line #2011 1590 ACSR (45/7) conductor from Structure #2011/68 to Clifton Substation with three-phase twin-bundled 768.2 ACSS/TW type conductor, designed for a maximum operating temperature of 250 degrees Celsius and a minimum summer transfer capacity of 1,573 MVA. In order to accommodate the higher capacity of the uprated conductor, the Company additionally proposes to replace the existing single circuit 230 kV weathering steel monopoles with single circuit 230 kV weathering steel monopoles.

- Replace all substation equipment at the Clifton Substation that is associated with Line #2011 and not currently rated for 4000 ampere ("amp" or "A") to provide a 4000A single breaker rating.

- Uprate the Company's line switches to 4000A at the Prince William Delivery Point ("DP") and Battery Heights DP, both of which are the City of Manassas' DPs tapped from Line #2011.

The purpose of this review was to document the locations of federal and state solid and hazardous wastes and petroleum release sites within a 0.5-mile radius of the transmission line corridor (the "Project area"). RES consulted publicly available data from the Environmental Protection Agency (EPA) and the Virginia Department of Environmental Quality (DEQ).

EPA Facility Registry Service

RES reviewed data from the EPA Facility Registry Service (FRS) for the City of Manassas, Prince William County, and Fairfax County, Virginia. The FRS dataset provides information about facilities, sites, or places subject to environmental regulation or of environmental interest and contains all sites subject to environmental regulation by the EPA or other state authorities, including sites that fall under air emissions or wastewater programs. The results reported herein specifically include those sites which fall under the EPA's hazardous waste, solid waste, remediation, and underground storage tank programs, such as the following site categories: *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA)/*Superfund Enterprise Management System* (SEMS); *Resource Conservation and Recovery Act* (RCRA); and Brownfield Sites.

Per this review, no registered Brownfield Sites or CERCLA/SEMS sites were identified within a 0.5-mile radius of the Project area.

According to the EPA FRS database, sixty-two (62) RCRA sites are located within a 0.5-mile radius of the Project area, as detailed in Table 1 below. Of the sixty-two (62) RCRA sites identified within the search area, fifty-six (56) are located over 500 feet from the Project area. These fifty-six (56) sites are located outside of the transmission line corridor for the proposed Project and due to distance, do not appear to warrant further concern relating to the proposed Project. Of the remaining six (6) RCRA sites, five (5) are located within 500 feet of the Project area and one (1) is directly crossed by the existing transmission line facilities. These six (6) sites are discussed in further detail below. See Figure 2.F.1 (Attachment A) for a map of facility locations: see Table 1 provided in Attachment B for a listing of FRS facility record information.

The existing transmission line facilities directly cross the northern portion of the parcel containing the Virginia Tech Occoquan Watershed Monitoring Lab (EPA Registry ID: 110006454773), and Structure #2011/56, which is currently located in the northeastern corner of the parcel, will be rebuilt slightly west of its current location. The Virginia Tech Occoquan Watershed Monitoring Lab provides services for monitoring the water quality of rivers, streams, reservoirs, and other waterbodies and environmental sampling. The facility is classified as an active very small quantity generator with no records of RCRA violations in the FRS Enforcement and Compliance Database. Given the nature and regulatory status of this facility (no violations found), it does not appear to warrant further concern relating to the proposed Project.

The Project area is located within approximately 469 feet of the Payne Publishers (EPA Registry ID: 110006456539) facility, 396 feet of the Manassas Quality Auto Body Inc. (EPA Registry ID: 110030749377) facility, 324 feet of the Fiberglass Unlimited Collision (EPA Registry ID: 110006458449) facility, and 473 feet of the Classic Automotive Inc. (EPA Registry ID: 110008194916), which are all classified as active very small quantity generators. These facilities have no records of RCRA violations in the FRS Enforcement and Compliance Database. Due to the distance and regulatory status of these facilities (no violations found), they do not appear to warrant further concern relating to the proposed Project.

The Project area is located within approximately 150 feet of the Glen Gery Corporation Capitol Plant (EPA Registry ID: 110001887815), which is located directly east of the intersection of Godwin Drive and the Norfolk Southern Railroad in the City of Manassas. According to the site-specific *FRS Facility Detail Report*, the plant is classified as an active very small quantity generator under the RCRA and is also registered under the Toxic Release Inventory (TRI) and Integrated Compliance System for Air for operation under a Clean Air Act (CAA) Synthetic Minor

Emissions permit. The facility has no records of RCRA or CAA violations in the FRS Enforcement and Compliance Database, and the TRI report for the facility shows that no toxic releases have occurred since 2004. Previous toxic releases consisted solely of air emissions of hydrogen fluoride that occurred between 1997 and 2004. No surface water discharges, releases to land, or injection to groundwater have been reported at the facility. Due to the regulatory status of the facility (no violations or recent toxic releases found) and the nature of the previous releases (air emissions), the facility is not anticipated to present an environmental concern for the Project.

Virginia DEQ Environmental Data Mapper

RES also reviewed data from the Virginia DEQ Environmental Data Mapper (EDM) viewer for the presence of Voluntary Remediation Program (VRP) sites, Permitted Solid Waste Facilities, and petroleum release sites.

The EDM returned one (1) VRP site within a 0.5-mile radius of the Project. The Project area is located within approximately 379 feet of the Manassas Ice and Fuel Co. (VRP00030) facility, which is classified as pre-VRP (predating the establishment of the VRP program on July 1, 1997). This facility is associated with three (3) petroleum releases identified within the search radius, which are discussed in further detail below. See Table 2 provided in Attachment B for a listing of VRP site record information.

The EDM returned two (2) Permitted Solid Waste Facilities within a 0.5-mile radius of the Project. These two Permitted Solid Waste Facilities are located within 500 feet of the Project area and are discussed in further detail below. See Figure 2.F.1 (Attachment A) for a map of site locations; see Table 3 provided in Attachment B for a listing of Permitted Solid Waste Facility record information.

One active solid waste management facility (Manassas Transfer Station; Solid Waste Facility ID #900000006389) was identified within the Project area between Structures #2011/32-33. The Manassas Transfer Station is owned and privately operated by Waste Management Inc. under Permit-by-Rule #091. Permits-by-Rule or “PBRs” are an alternative to a full solid waste permit, available for solid waste management facilities that treat or temporarily store solid waste. The transfer station is located at 8305 Quarry Road in the City of Manassas. The City partners with Waste Management Inc., which owns and operates the Manassas Transfer Station, to receive the City’s refuse (including construction and demolition debris, municipal solid waste, and yard waste) and provide residential drop-off events for household hazardous waste (including pesticides, batteries, paint, cleaning products, motor oil and gasoline), electronics, and shredding collection. Refuse is taken to the Manassas Transfer Station and put in trailers for transport to King George landfill in Fredericksburg, Virginia. Due to the nature of the facility as an actively permitted, controlled temporary storage and transfer station for refuse and limited household hazardous wastes, it is not anticipated this facility will present an environmental concern for the Project.

The Project area is located within approximately 411 feet of an active Permitted Solid Waste Facility associated with Dominion Transfer Station (Solid Waste Facility ID #900000006389). The Dominion Transfer Station is owned and operated by Patriot Disposal Inc. under PBR #693. The transfer station is located at 9115 Industry Drive in Manassas Park. The City partners with Patriot Disposal Inc. to receive the City’s refuse. The transfer station does not accept tires, liquid or hazardous materials (including paints, fuels, poisons, etc.), electronic devices, batteries (all types), fluorescent lights, or mercury containing devices. Due to the nature of the facility as an actively permitted, controlled temporary storage and transfer station, the nature of the accepted

solid waste, and location of the facility (west of the Norfolk Southern Railroad and outside of the Project area), it is not anticipated this facility will present an environmental concern for the Project.

The EDM returned ninety-four (94) petroleum releases within a 0.5-mile radius of the Project. Ninety-two (92) of the ninety-four (94) petroleum releases have been closed. Of the ninety-four (94) petroleum releases identified within the study area, seventy-five (75) are located over 500 feet from the Project area. These seventy-five (75) sites are located outside of the transmission line corridor for the Project and due to distance and release site status (closed), do not appear to warrant further concern relating to the proposed Project. The remaining nineteen (19) petroleum release sites are located within 500 feet of the Project area, with two (2) located less than 50 feet from the transmission line corridor. These nineteen (19) sites are discussed in further detail below. See Figure 2.F.1 (Attachment A) for a map of site locations; see Table 4 provided in Attachment B for a listing of petroleum release site record information.

The Project area is located within 50 feet of a petroleum release site associated with the Manassas Frozen Food Property (PC No. 20033007). According to the site record, the petroleum release was reported on July 12, 2002, and closed on August 30, 2007. Based on the regulatory status of the site (closed) and time elapsed (15 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within 50 feet of a petroleum release site associated with the Kinchloe Property (PC No. 20003223). According to the site record, the petroleum release was reported on January 6, 2000, and closed on October 2, 2006. Based on the regulatory status of the site (closed) and time elapsed (16 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 200-300 feet of three (3) petroleum release sites (PC No. 19860801, PC No. 20043184, and PC No. 19850564) associated with the Manassas Ice and Fuel Company. According to the site record for PC No, 19850564, the petroleum release was reported on May 14, 1985, and closed on May 14, 1985, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (37 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project. According to the site record for PC No. 19860801 and PC No. 20043184, the petroleum releases were reported on June 6, 1986, and January 29, 2004, respectively, and are still open. Based on the location of these releases from the Project area (245 feet and 223 feet respectively), these vicinity releases do not appear to warrant further concern relating to the Project. In addition, the Manassas Ice and Fuel Company is cross gradient from the Project right-of-way and located north of the Norfolk Southern Railroad; it is highly unlikely that any material would migrate from the facility to the Project corridor.

A petroleum release associated the Church Street Peaking Plant facility (PC No. 20033137) is located approximately 289 feet from the boundaries of the Project. According to the site record, the petroleum release was reported on January 16, 2003, and closed on November 4, 2003, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (19 years) since the case was closed allowing any remaining contamination to naturally attenuate, the release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 437 feet of a petroleum release site associated with the Dean Water Pump Station (PC No.20043150). According to the site record, the petroleum release was reported on December 19, 2003, and closed on June 3, 2004. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (18 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 189 feet of a petroleum release site associated with the Morais Properties Property (PC No. 20053075). According to the site record, the petroleum release was reported on September 20, 2004, and closed on September 27, 2004, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (18 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 293 feet of a petroleum release site associated with Mobil (PC No. 19810300). According to the site record, the petroleum release was reported on November 14, 1980, and closed on August 5, 1994. Based on the regulatory status of the site (closed) and time elapsed (28 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 141 feet of a petroleum release site associated with the H S Eley Construction Company Incorporated (PC No. 19973021). According to the site record, the petroleum release was reported on March 11, 1996, and closed on December 11, 1996, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (26 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 327 feet of a petroleum release site associated with the Church Street Power Generation Facility (PC No. 19993210). According to the site record, the petroleum release was reported on December 23, 1998, and closed on April 21, 1999, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (23 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 368 feet of a petroleum release site associated with the Manassas City Hall (PC No. 19993216). According to the site record, the petroleum release was reported on January 4, 1999, and closed on May 21, 1999, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (23 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 290 feet of a petroleum release site associated with the Arlington Iron Works (PC No. 19993238). According to the site record, the petroleum release was reported on January 21, 1999, and closed on June 30, 1999, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (23 years) since the case was

closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 258 feet of a petroleum release site associated with the Waste Management Quarry Road Site (PC No. 20063193). According to the site record, the petroleum release was reported on January 30, 2006, and closed on May 23, 2006, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (16 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 135 feet of a petroleum release site associated with the UOSA Russia Branch Pump Station (PC No. 20113153). According to the site record, the petroleum release was reported on January 7, 2011, and closed on June 16, 2011, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and time elapsed (11 years) since the case was closed allowing any remaining contamination to naturally attenuate, the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 332 feet of a petroleum release site associated with the George A Roy Estate Property (PC No. 20163124). According to the site record, the petroleum release was reported on December 16, 2015, and closed on January 19, 2016, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and distance from the Project the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 361 feet of a petroleum release site associated with the Prosperos Book Store (PC No. 20123208). According to the site record, the petroleum release was reported on May 14, 2012, and closed on November 1, 2016. Based on the regulatory status of the site (closed), short duration the release was open, and distance from the Project the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 449 feet of a petroleum release site associated with the New Baldwin Elementary School (PC No. 20153152). According to the site record, the petroleum release was reported on December 16, 2014, and closed on December 13, 2017. Based on the regulatory status of the site (closed) and distance from the Project the vicinity release does not appear to warrant further concern relating to the Project.

The Project area is located within approximately 396 feet of a petroleum release site associated with the Safelite facility (PC No. 20173143). According to the site record, the petroleum release was reported on May 4, 2017, and closed on June 28, 2017, indicating a lack of significant soil and/or groundwater contamination. Based on the regulatory status of the site (closed), short duration the release was open, and distance from the Project are the vicinity release does not appear to warrant further concern relating to the Project.

In summary, a total of 94 petroleum release sites, one VRP site, two Permitted Solid Waste Facilities, and 62 RCRA sites are located within a 0.5-mile radius of the Partial Rebuild Project. No EPA registered brownfield sites or CERCLA/superfund sites are located within 0.5 mile of the Project area. Dominion Energy has a procedure in place to handle petroleum contaminated soil, if encountered; however, given that the two (2) open release sites are located outside (north of the Norfolk Southern Railroad) and cross gradient of the Project area and the remaining 17

release sites within 500 of the Project are classified as closed (or indicate a lack of significant soil and/or groundwater contamination), none of the petroleum release sites are expected to have an impact on the proposed Partial Rebuild Project.

If you have any questions regarding the information presented in this report, please feel free to contact me.

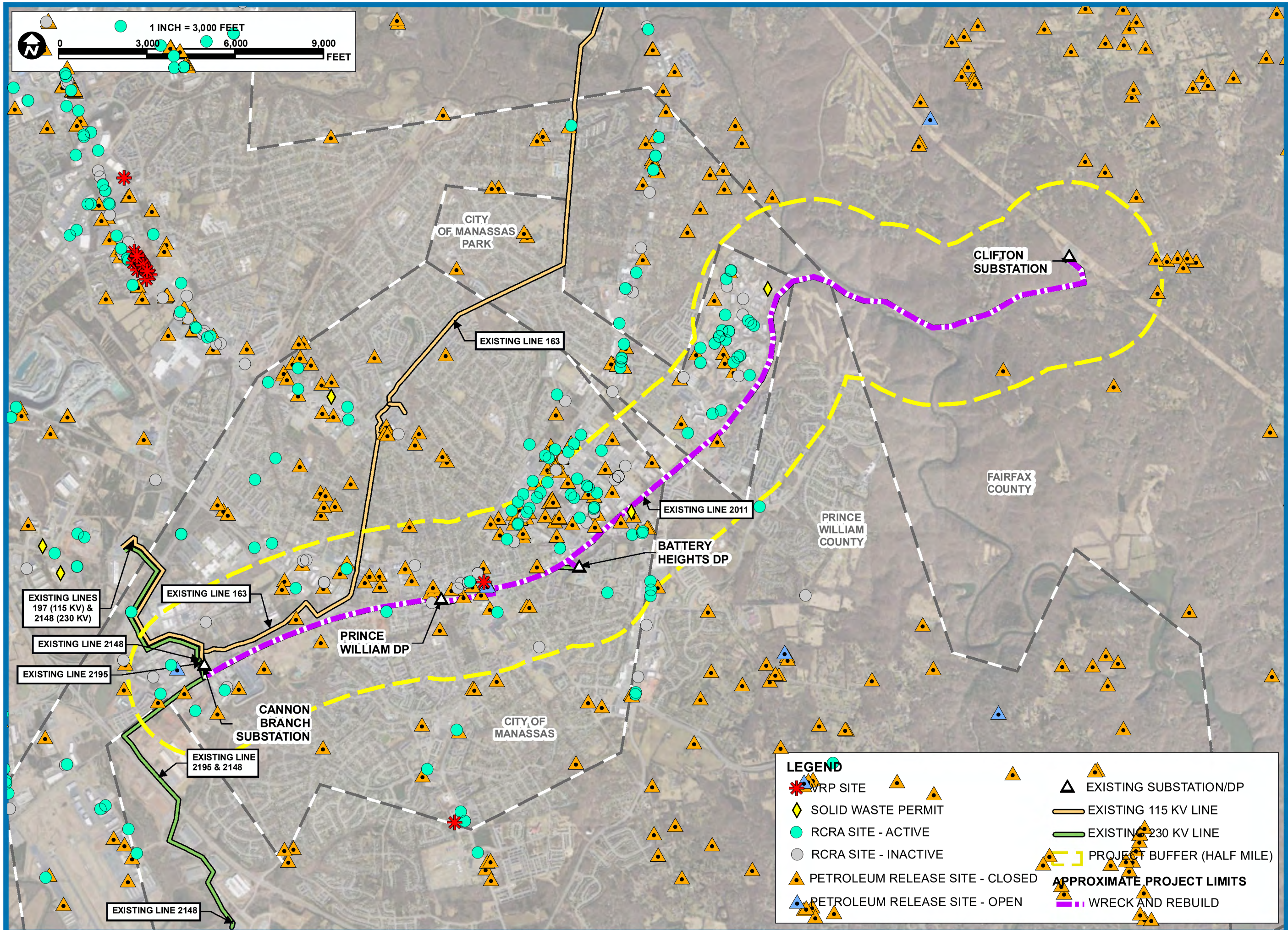
Best Regards,

Colin Zehrer
Project Manager
(804) 350-6411
czehrer@res.us

Attachments: Attachment A – Figure 2.F.1 – Solid and Hazardous Waste Sites Within 0.5 Miles
Attachment B – Tables

ATTACHMENT A

FIGURE 2.F.1 – SOLID AND HAZARDOUS WASTE SITES WITHIN 0.5 MILES



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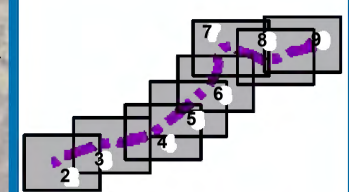
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

SOLID AND HAZARDOUS WASTE SITES WITHIN 0.5 MILES MAP

II.E.1.

CITY OF MANASSAS PARK, PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY, VIRGINIA



PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE EXPORTED: 10/14/2022
REVISIONS:

SHEET 1 OF 9

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0 600 1,200 1,800 FEET

PC # 20073043
FRS ID# 110006457869
FRS ID# 110060291535
PC # 19880323
EXISTING LINE 163
PC # 20043150
FRS ID# 110012195007
EXISTING LINE 2011
EXISTING LINE 197 & 2148
PC # 19993046
EXISTING LINE 163
CITY OF MANASSAS
EXISTING LINE 2148
FRS ID# 110066980093
CANNON BRANCH SUBSTATION
EXISTING LINE 2195
PC # 20223046
PC # 20213053
FRS ID# 110031317992
FRS ID# 110005291022
PC # 20003212
FRS ID# 110039584973
FRS ID# 110006455031
PC # 19900734
PC # 19954178
FRS ID# 110001887815
EXISTING LINE 2195 & 2148
PC # 19993343
PRINCE WILLIAM COUNTY

LEGEND

- VRP SITE
- SOLID WASTE PERMIT
- RCRA SITE - ACTIVE
- RCRA SITE - INACTIVE
- PETROLEUM RELEASE SITE - CLOSED
- PETROLEUM RELEASE SITE - OPEN
- EXISTING SUBSTATION/DP
- EXISTING 115 KV LINE
- EXISTING 230 KV LINE
- PROJECT BUFFER (HALF MILE)

APPROXIMATE PROJECT LIMITS

- WRECK AND REBUILD

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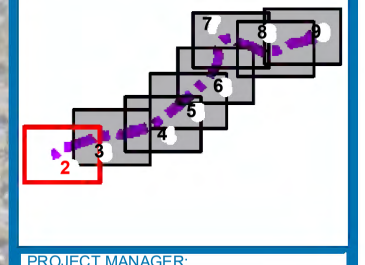
SOLID AND HAZARDOUS WASTE SITES WITHIN 0.5 MILES MAP II.E.1.

CITY OF MANASSAS, CITY OF MANASSAS PARK, PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY, VIRGINIA



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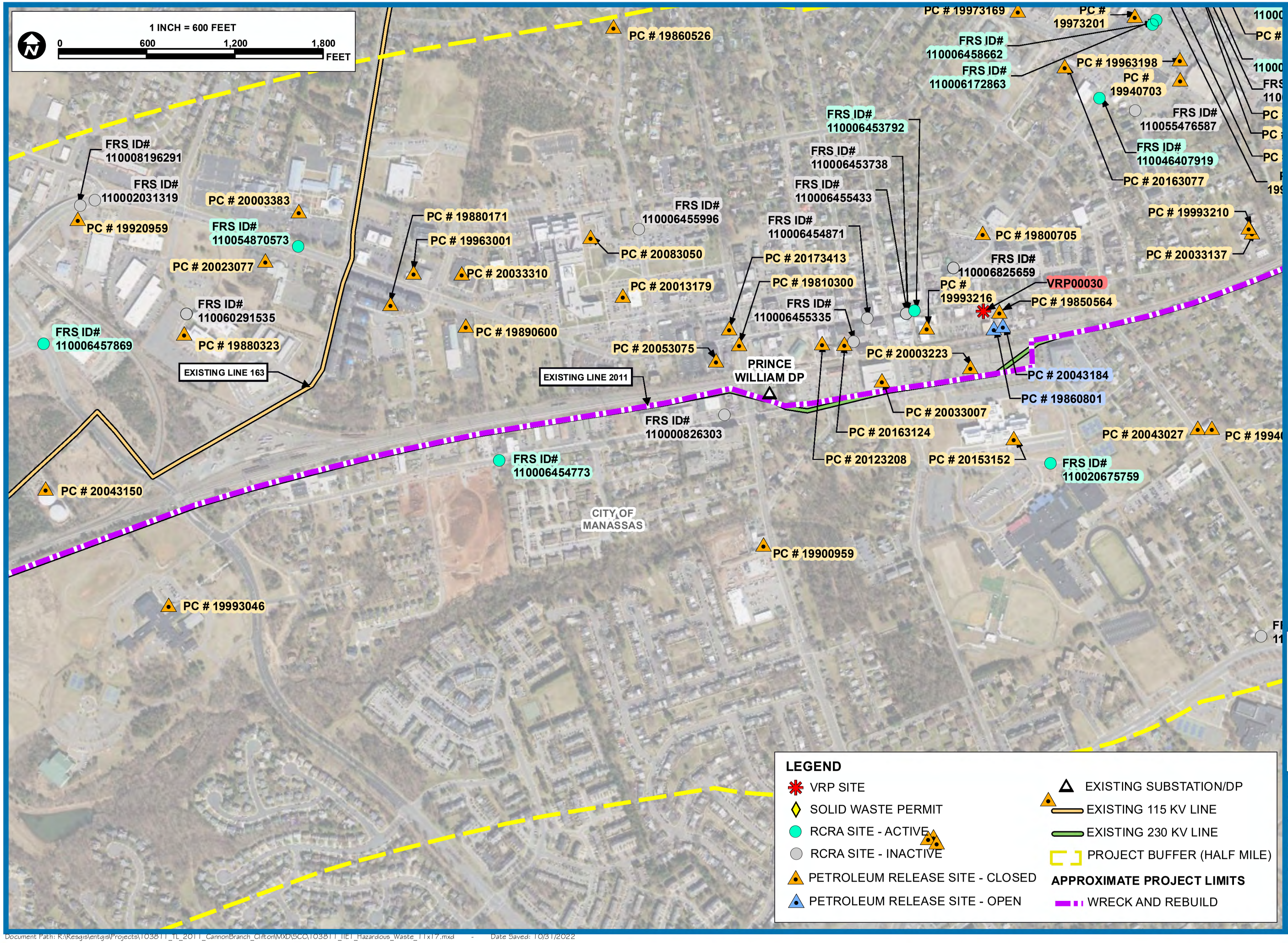
DATE EXPORTED: 10/14/2022
REVISIONS:

SHEET 2 OF 9



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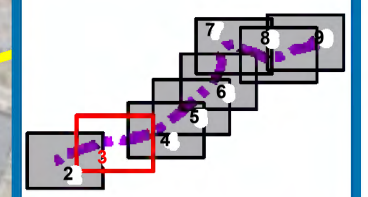
SOLID AND HAZARDOUS WASTE SITES WITHIN 0.5 MILES MAP II.E.1.

CITY OF MANASSAS, CITY OF MANASSAS PARK, PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY, VIRGINIA



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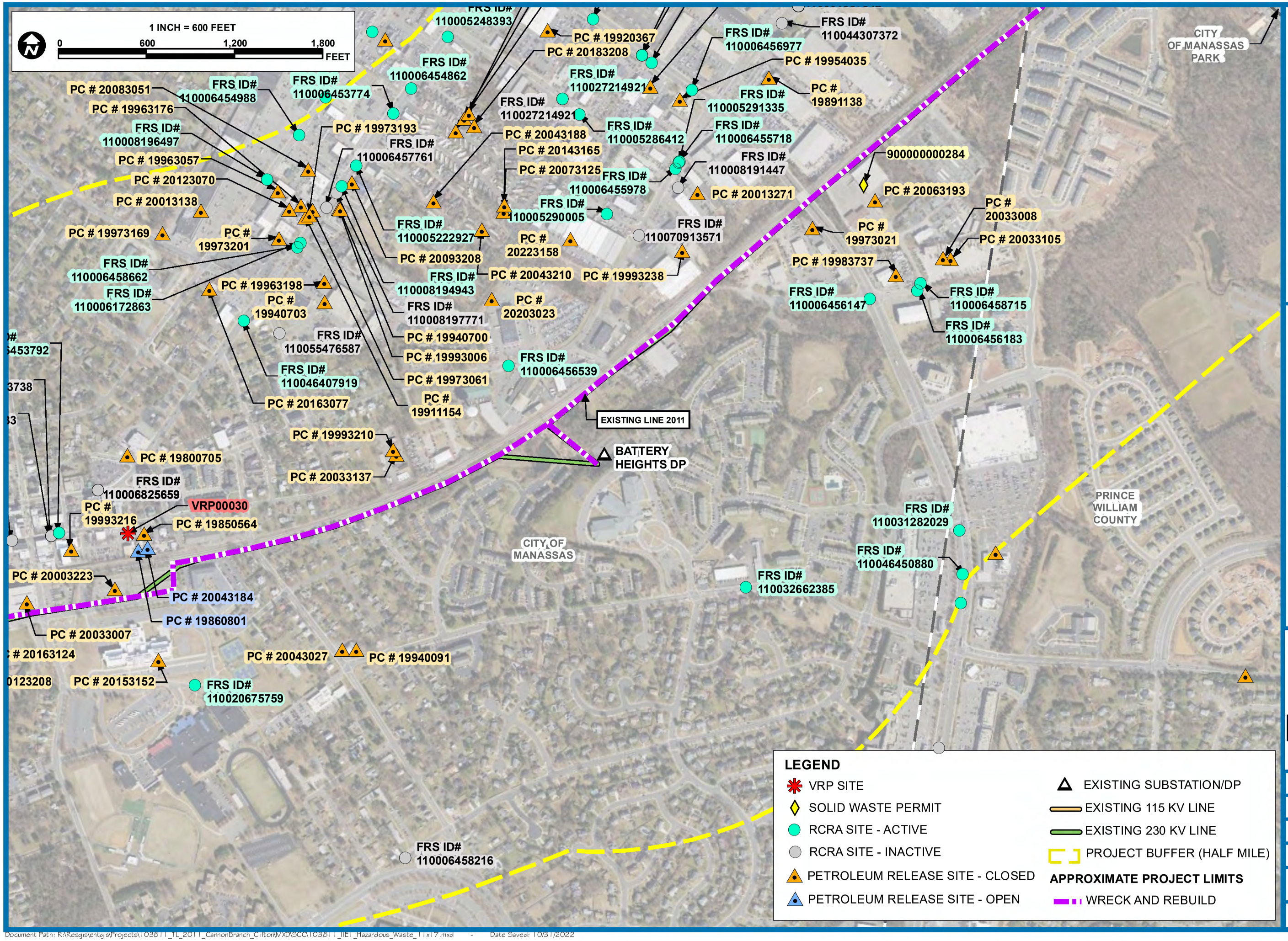
DRAWN: LC
JOB NUMBER: 103811
DATE EXPORTED: 10/14/2022
REVISIONS:

SHEET 3 OF 9



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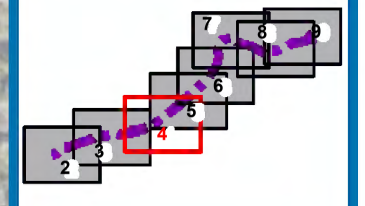
SOLID AND HAZARDOUS WASTE SITES WITHIN 0.5 MILES MAP II.E.1.

CITY OF MANASSAS, CITY OF MANASSAS PARK, PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY, VIRGINIA



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REVISIONS:

SHEET 4 OF 9

1 INCH = 600 FEET
0 600 1,200 1,800 FEET

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PC # 20063264
FRS ID# 110006179447
PC # 20113153
CITY OF MANASSAS PARK
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CITY OF MANASSAS
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PRINCE WILLIAM COUNTY
BATTERY HEIGHTS DP
FRS ID# 110031282029

LEGEND

- VRP SITE
- SOLID WASTE PERMIT
- RCRA SITE - ACTIVE
- RCRA SITE - INACTIVE
- PETROLEUM RELEASE SITE - CLOSED
- PETROLEUM RELEASE SITE - OPEN
- EXISTING SUBSTATION/DP
- EXISTING 115 KV LINE
- EXISTING 230 KV LINE
- PROJECT BUFFER (HALF MILE)

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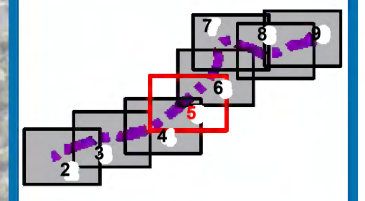
SOLID AND HAZARDOUS WASTE SITES WITHIN 0.5 MILES MAP

II.E.1.

CITY OF MANASSAS PARK, PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY, VIRGINIA



PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE EXPORTED: 10/14/2022
REVISIONS:

SHEET 5 OF 9

1 INCH = 600 FEET
0 600 1,200 1,800 FEET

FRS ID# 110008196246
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EXISTING LINE 2011
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FRS ID# 110006179447
PC # 20113153
PC # 19920208
55380
CITY OF MANASSAS
CITY OF MANASSAS PARK
FAIRFAX COUNTY
PRINCE WILLIAM COUNTY

LEGEND

- VRP SITE
- SOLID WASTE PERMIT
- RCRA SITE - ACTIVE
- RCRA SITE - INACTIVE
- PETROLEUM RELEASE SITE - CLOSED
- PETROLEUM RELEASE SITE - OPEN
- EXISTING SUBSTATION/DP
- EXISTING 115 KV LINE
- EXISTING 230 KV LINE
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APPROXIMATE PROJECT LIMITS

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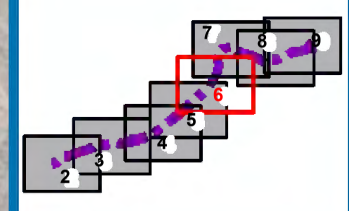
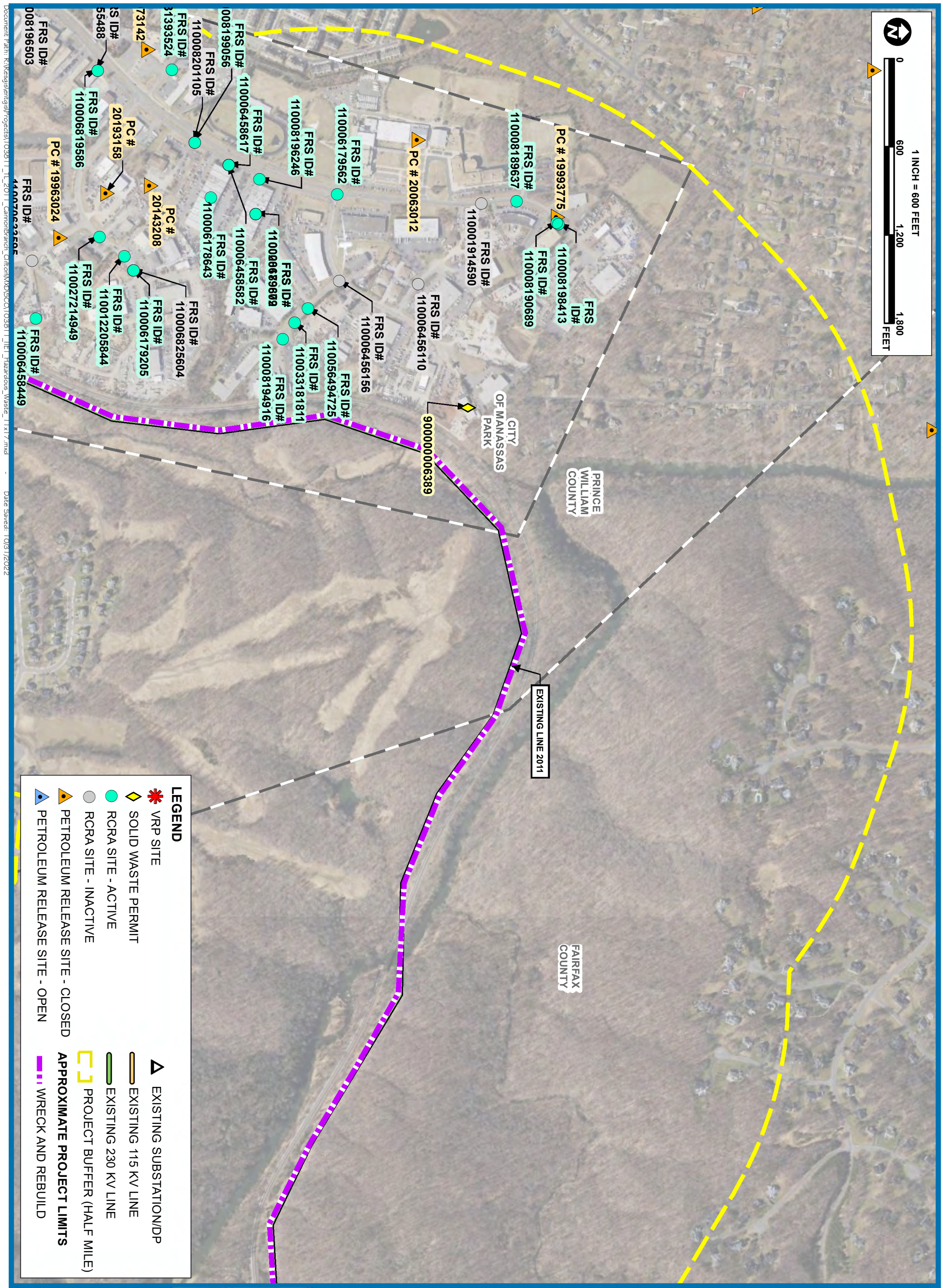
SOLID AND HAZARDOUS WASTE SITES WITHIN 0.5 MILES MAP II.E.1.

CITY OF MANASSAS PARK, PRINCE WILLIAM COUNTY, AND FAIRFAX COUNTY, VIRGINIA



PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE EXPORTED: 10/14/2022
REVISIONS:

SHEET 6 OF 9



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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

SOLID AND HAZARDOUS WASTE SITES
WITHIN 0.5 MILES MAP
II.E.1.

CITY OF MANASSAS, CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 10381
DATE EXPORTED: 10/14/2022
REVISIONS:

SHEET 7 OF 9

res
CORPORATE | 6575 WEST LOOP SOUTH, SUITE 300, BELLAIRE, TX 77401
P: 713.520.5400
www.res.us

1 INCH = 600 FEET

0 600 1,200 1,800 FEET

CLIFTON SUBSTATION

FAIRFAX COUNTY

EXISTING LINE 2011

PC # 20153049

PRINCE WILLIAM COUNTY

LEGEND

- VRP SITE
- SOLID WASTE PERMIT
- RCRA SITE - ACTIVE
- RCRA SITE - INACTIVE
- PETROLEUM RELEASE SITE - CLOSED
- PETROLEUM RELEASE SITE - OPEN
- EXISTING SUBSTATION/DP
- EXISTING 115 KV LINE
- EXISTING 230 KV LINE
- PROJECT BUFFER (HALF MILE)

APPROXIMATE PROJECT LIMITS

- WRECK AND REBUILD

res
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P: 713.520.5400
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LINE #2011 230 KV
PARTIAL REBUILD PROJECT
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SOLID AND HAZARDOUS WASTE SITES WITHIN 0.5 MILES MAP

II.E.1.

CITY OF MANASSAS PARK, CITY OF MANASSAS,
PRINCE WILLIAM COUNTY,
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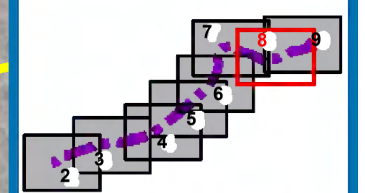
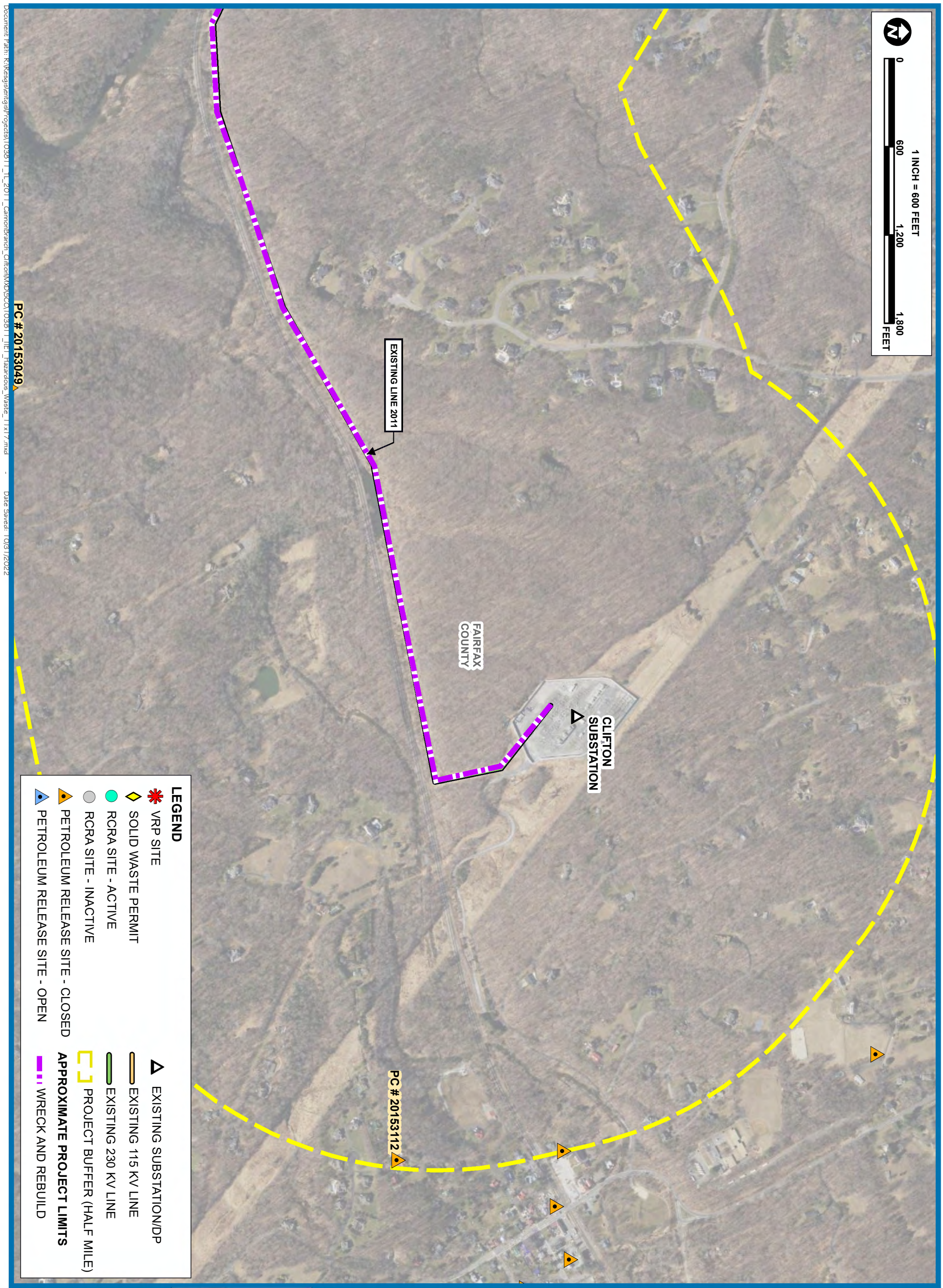


PROJECT MANAGER: CZ
DRAWN: LC
JOB NUMBER: 103811
DATE EXPORTED: 10/14/2022
REVISIONS:

SHEET 8 OF 9



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Date Saved: 10/31/2022

PROJECT MANAGER:
DRAWN: CZ
JOB NUMBER: LC
DATE EXPORTED: 103811
REVISIONS: 10/14/2022

SHEET 9 OF 9

LINE #2011 230 KV
PARTIAL REBUILD PROJECT
APPLICANT: DOMINION ENERGY VIRGINIA

SOLID AND HAZARDOUS WASTE SITES
WITHIN 0.5 MILES MAP
II.E.1.

CITY OF MANASSAS, CITY OF MANASSAS PARK,
PRINCE WILLIAM COUNTY,
AND FAIRFAX COUNTY, VIRGINIA

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ATTACHMENT B

TABLES

Table 1: RCRA Sites identified by the EPA as occurring within 0.5-mile of the Line #2011 Partial Rebuild Project

EPA Registry ID	Site Name	City	Latitude	Longitude	Type	Active Status	Proximity to Project Area (Feet)
110001887815	Glen Gery Corporation - Capitol Plant	Manassas	38.73944	-77.50389	Very Small Quantity Generator (VSQG)	Active	150
110006455031	Fedex Freight, Inc.	Manassas	38.74108	-77.50806	VSQG	Active	1541
110039584973	Fedex National Ltl	Manassas	38.74134	-77.50037	VSQG	Active	699
110066980093	Yellow Freight System Inc	Manassas	38.74376	-77.50677	VSQG	Active	1160
110020675759	Osbourn High School	Manassas	38.74836	-77.46771	Small Quantity Generator (SQG)	Active	648
110006454773	Occoquan Watershed Monitoring Lab	Manassas	38.748527	-77.480908	VSQG	Active	Within Corridor
110070123150	Wawa Food Market #8644	Manassas	38.74974	-77.44934	VSQG	Active	2615
110032662385	A Quality Finish	Manassas	38.750083	-77.454474	VSQG	Active	1284
110046450880	Shoppers #2380	Manassas	38.75028	-77.449282	VSQG	Active	2529
110006457869	Morrow Crane Co	Manassas	38.75081	-77.49177	VSQG	Active	1378
110006453792	Manassas City Of City Hall	Manassas	38.75125	-77.47092	VSQG	Active	502
110031282029	Wal-Mart # 3573	Manassas	38.7511	-77.44935	SQG	Active	2326
110054870573	Georator Corp	Manassas	38.752582	-77.485651	VSQG	Active	1496
110006456539	Payne Publishers	Manassas	38.75429	-77.46011	VSQG	Active	469
110046407919	Cvs Pharmacy #1406	Manassas	38.75519	-77.46644	VSQG	Active	1505
110006456147	Manassas Transfer Inc	Manassas	38.75547	-77.45143	Transporter	Active	761
110006456183	Color Craft Collision	Manassas	38.755614	-77.450282	VSQG	Active	925
110006458715	Waste Mgmt Of N Va	Manassas	38.75575	-77.45021	VSQG	Active	898
110006458662	Pep Boys No 515	Manassas	38.75656	-77.46514	VSQG	Active	1858
110006172863	Exxon Co Usa No 25465	Manassas	38.75664	-77.46506	VSQG	Active	1877
110005290005	R S Collision	Manassas	38.757119	-77.457712	VSQG	Active	832
110008194943	Gunning Motors Inc	Manassas	38.757695	-77.46406	SQG	Active	2108
110008196497	Edwards & Sullivan Inc Goodyear	Manassas	38.75784	-77.46584	SQG	Active	2365

EPA Registry ID	Site Name	City	Latitude	Longitude	Type	Active Status	Proximity to Project Area (Feet)
110006455978	Ratchet Man	Manassas	38.757956	-77.456053	SQG	Active	745
110005222927	Milloy Subaru Inc	Manassas	38.75808	-77.4637	VSQG	Active	2183
110005291335	Euclid Autobody	Manassas	38.75807	-77.455977	VSQG	Active	762
110006455718	Miracle Auto Body	Manassas	38.758093	-77.455961	SQG	Active	766
110006454988	Maaco Collision Repair & Auto Painting	Manassas	38.758666	-77.46507	VSQG	Active	2555
110005286412	Manassas Dodge & Kia	Manassas	38.75899	-77.45834	SQG	Active	1453
110006453774	Manassas Cleaners Inc	Manassas	38.75905	-77.4628	VSQG	Active	2286
110027214921	Virginia Auto Body Incorporated	Manassas	38.75929	-77.45875	VSQG	Active	1612
110006456977	7-Eleven #22095	Manassas	38.75943	-77.45564	VSQG	Active	1079
110006454862	Atlas Commercial Pumping	Manassas	38.759515	-77.46236	Transporter	Active	2344
110008200286	Juns Auto Body	Manassas	38.75995	-77.45659	VSQG	Active	1399
110006454933	Sheehy - Manassas Inc	Manassas	38.760093	-77.456821	VSQG	Active	1481
110006822901	Gills Body Shop	Manassas	38.760093	-77.456821	SQG	Active	1481
110005248393	National Tire & Battery #7380	Manassas	38.76048	-77.46148	VSQG	Active	2461
110061134124	The Home Depot Store #4648	Manassas	38.76078	-77.45799	SQG	Active	1887
110012707829	Benchmark Electronics Manassas Div	Manassas	38.76337	-77.45501	SQG	Active	2076
110006179447	Vw Restorations And Customs	Manassas Park	38.764946	-77.444644	VSQG	Active	611
110008178159	American Stripping	Manassas Park	38.766732	-77.441731	SQG	Active	541
110030749377	Manassas Quality Auto Body Incorporated	Manassas Park	38.76702	-77.44066	VSQG	Active	396
110006458449	Fibreglass Unlimited Collision	Manassas Park	38.77029	-77.43717	VSQG	Active	324
110006819586	D & K Diesel Inc	Manassas Park	38.7715	-77.443074	SQG	Active	1948
110027214949	Mastercraft Auto Body	Manassas Park	38.7715	-77.4391	VSQG	Active	1027
110012205844	Virginia Contractor Supply	Manassas Park	38.77196	-77.43863	VSQG	Active	993
110006179205	Wilson Elliott Capitol Trucks	Manassas	38.77213	-77.4383	VSQG	Active	932
110031393524	Hughes Supply #Hdhg 0932	Manassas	38.77289	-77.44308	VSQG	Active	2249

EPA Registry ID	Site Name	City	Latitude	Longitude	Type	Active Status	Proximity to Project Area (Feet)
110008199056	Robinson Precision Auto Body	Manassas Park	38.773301	-77.441339	VSQG	Active	1874
110006178643	Autocrafters	Manassas Park	38.773593	-77.44001	VSQG	Active	1486
110006458582	Livengood'S Truck & Autobody	Manassas Park	38.773934	-77.440787	VSQG	Active	1694
110006458617	East Coast Refinishing & Marin	Manassas	38.773934	-77.440787	VSQG	Active	1694
110008189879	Manassas European Auto Body	Manassas Park	38.77443	-77.439609	VSQG	Active	1341
110020679602	Shanes Signs Incorporated	Manassas Park	38.77443	-77.439609	VSQG	Active	1341
110008196246	Butler Automotive Inc	Manassas Park	38.774507	-77.440436	VSQG	Active	1573
110008194916	Classic Automotive Inc	Manassas Park	38.77491	-77.43661	VSQG	Active	473
110033181811	Chantilly Collision Center Incorporated	Manassas Park	38.77514	-77.437	VSQG	Active	577
110056494725	National Coatings & Supplies (Manassas Park)	Manassas Park	38.775389	-77.437332	VSQG	Active	668
110006179562	Virginia Rod Shop The	Manassas Park	38.77596	-77.44006	VSQG	Active	1449
110008189637	Performance Autobody Incorporated	Manassas Park	38.77932	-77.43985	VSQG	Active	1696
110008190689	Ivan C Dutterer Inc	Manassas Park	38.78007	-77.43932	VSQG	Active	1693
110008198413	Metro Sign & Design Inc	Manassas Park	38.7801	-77.43928	VSQG	Active	1688

Table 2: VRP Sites identified by DEQ as occurring within 0.5-mile of the Line #2011 Partial Rebuild Project

Site Number	Site Name	City	Latitude	Longitude	Status	Proximity To Project Area (Feet)
VRP00030	Manassas Ice And Fuel Co.	Manassas	38.751165	-77.468930	Pre-VRP	250

Table 3: Permitted Solid Waste Facilities identified by DEQ as occurring within 0.5-mile of the Line #2011 Partial Rebuild Project

Solid Waste Facility ID	Permit Number	Permittee	Site Name	City	Latitude	Longitude	Status	Proximity To Project Area (Feet)
900000000284	PBR-091	Waste Management Of Virginia	Manassas Transfer Station	Manassas	38.757376	-77.451720	Active	Within Corridor
900000006389	PRB-639	Patriot Disposal Inc.	Dominion Transfer Station	Manassas Park	38.778050	-77.435084	Active	411

Table 4: Petroleum Release Sites identified by DEQ as occurring within 0.5-mile of the Line #2011 Partial Rebuild Project

PC Number	Site Name	City/County	Latitude	Longitude	Status	Reported Date	Closure Date	Proximity to Project Area (Feet)
19993343	UOSA Winters Branch Pump Station	Manassas City	38.739305	-77.501274	Closed	4/30/1999	3/21/2000	1228
19954178	Manassas City Power Plant	Manassas City	38.740465	-77.508347	Closed	1/25/1995	6/21/1995	1706
19900734	Glen Gery Company - Manassas Quarry	Manassas City	38.741242	-77.505215	Closed	12/14/1989	2/28/1991	795
20003212	Dominion Peaking Plant	Manassas City	38.741637	-77.49868	Closed	12/1/1999	7/31/2001	846
20223046	YRC Freight 149	Manassas City	38.743477	-77.506013	Closed	9/30/2021	6/22/2022	919
20213053	Material Storage Yard	Manassas City	38.743459	-77.495648	Closed	7/31/2020	12/3/2020	645
19993046	Jennie Dean Elementary School	Prince William County	38.745895	-77.488849	Closed	8/4/1998	4/5/1999	527
19900959	Rogers Auto Center	Manassas City	38.746904	-77.474595	Closed	1/30/1990	5/11/1996	916

PC Number	Site Name	City/County	Latitude	Longitude	Status	Reported Date	Closure Date	Proximity to Project Area (Feet)
20043150	Dean Water Pump Station	Manassas City	38.748099	-77.491762	Closed	12/19/2003	6/3/2004	437
20153152	New Baldwin Elementary School	Prince William County	38.748845	-77.46858	Closed	12/16/2014	12/13/2017	449
19940091	Fairview Grocery - Turner Oil	Manassas City	38.748994	-77.463834	Closed	7/19/1993	8/16/1993	831
20043027	Fairview Grocery	Manassas City	38.748998	-77.464173	Closed	5/12/2003	8/23/2004	803
20033007	Manassas Frozen Food Property	Prince William County	38.749956	-77.47172	Closed	7/12/2002	8/30/2007	45
20003223	Kinchloe Property	Prince William County	38.750189	-77.4696	Closed	1/6/2000	10/2/2006	43
20053075	Morais Properties Property	Manassas City	38.75036	-77.475683	Closed	9/20/2004	9/27/2004	189
19810300	Mobil	Prince William County	38.750665	-77.475125	Closed	11/14/1980	8/5/1994	293
20163124	George A Roy Estate Property	Manassas City	38.75065	-77.47261	Closed	12/16/2015	1/19/2016	332
20123208	Prosperos Book Store	Manassas City	38.750666	-77.47314	Closed	5/14/2012	11/1/2016	361
20073043	Alexs Auto Repair	Manassas City	38.750933	-77.4934	Closed	8/25/2006	11/17/2006	1565
19880323	Manassas Administrative Building 2 (XREF 02-3077)	Manassas City	38.750978	-77.488406	Closed	10/8/1987	7/18/1988	1122
20163022	Proposed WaWa Gas Station	Manassas City	38.750682	-77.448483	Closed	8/11/2015	9/22/2015	2617
19860801	MIFCO - Manassas Ice and Fuel Company	Manassas City	38.750907	-77.469028	Open	6/6/1986	<Null>	224
20173413	Safelite	Manassas City	38.750963	-77.475357	Closed	5/4/2017	6/28/2017	396
19993216	Manassas City Hall	Manassas City	38.750941	-77.470635	Closed	1/4/1999	5/21/1999	368
20043184	MIFCO Facility	Manassas City	38.750955	-77.468809	Open	1/29/2004	<Null>	192

PC Number	Site Name	City/County	Latitude	Longitude	Status	Reported Date	Closure Date	Proximity to Project Area (Feet)
19890600	Southern States - Manassas	Manassas City	38.751068	-77.481661	Closed	11/30/1988	12/2/1988	711
19850564	MIFCO - Manassas Ice and Fuel Company	Manassas City	38.751219	-77.468885	Closed	5/14/1985	5/14/1985	268
19880171	Kings Grocery	Manassas City	38.751492	-77.483462	Closed	8/3/1987	8/23/1994	957
19973184	Prime Equipment Rental Depot	Manassas City	38.751707	-77.493071	Closed	4/24/1997	8/29/1997	1802
20013179	Prince William County Judicial Center	Prince William County	38.751596	-77.477898	Closed	3/6/2001	3/9/2001	737
20033310	Social Security Property	Manassas City	38.752046	-77.481745	Closed	6/26/2003	7/28/2003	1067
19963001	Manassas Plumbing and Heating	Manassas City	38.752072	-77.482898	Closed	7/14/1995	4/17/1996	1134
20023077	Center Street Building Property	Manassas City	38.752331	-77.486443	Closed	10/11/2001	5/17/2002	1457
20083050	PWC Fleet Management - Judicial Center	Manassas City	38.752703	-77.478649	Closed	7/18/2007	1/8/2008	1168
19800705	Virginia Transmission Co.	Manassas City	38.752693	-77.469268	Closed	4/25/1980	8/5/1994	785
20033137	Church Street Peaking Plant	Manassas City	38.752651	-77.46282	Closed	1/16/2003	11/4/2003	289
19993210	Church Street Power Generation Facility	Manassas City	38.752741	-77.462899	Closed	12/23/1998	4/21/1999	327
19920959	Tosco 2634852 - former Mobil 16B70	Manassas City	38.753145	-77.490916	Closed	11/20/1991	3/22/1994	2091
20003383	All Saints Church	Prince William County	38.753243	-77.485632	Closed	6/23/2000	10/28/2004	1726
19940703	Manassas Lumber Corporation	Manassas City	38.75553	-77.464496	Closed	10/25/1993	10/25/1995	1439
20203023	Toms Truck Sales	Manassas City	38.755552	-77.460489	Closed	8/7/2019	9/4/2019	885

PC Number	Site Name	City/County	Latitude	Longitude	Status	Reported Date	Closure Date	Proximity to Project Area (Feet)
20163077	Shannon Auto Sales	Manassas City	38.7558	-77.46726	Closed	10/8/2015	8/11/2016	1774
19963198	Manassas Lumber - Food Lion	Manassas City	38.755911	-77.464498	Closed	6/7/1996	7/2/1997	1569
19983737	Manassas Transfer Incorporated	Manassas City	38.755922	-77.450803	Closed	5/28/1997	4/22/1998	749
20033105	Summit USA Land Development Inc	Manassas City	38.756203	-77.449482	Closed	12/2/2002	1/24/2003	893
20033008	Summit USA Land Development Inc	Manassas City	38.756225	-77.449664	Closed	7/17/2002	10/2/2006	856
19993238	Arlington Iron Works	Manassas City	38.756417	-77.455915	Closed	1/21/1999	6/30/1999	290
19860526	Flat Branch from storm sewer	Prince William County	38.756637	-77.478048	Closed	2/19/1986	9/3/1994	2556
20223158	Sills Family Limited Property	Manassas City	38.756661	-77.458592	Closed	5/20/2022	6/1/2022	864
19973201	Parts USA	Manassas City	38.756734	-77.465572	Closed	6/3/1997	9/5/1997	1959
19973169	Quarles - Texaco Scotties	Manassas City	38.756854	-77.468364	Closed	4/24/1997	3/13/2009	2214
20043210	Hicks Francis Residence	Manassas City	38.756854	-77.460709	Closed	2/27/2004	4/22/2004	1289
19973021	H S Eley Construction Company Incorporated	Manassas City	38.756814	-77.452785	Closed	3/11/1996	12/11/1996	141
19911154	Exxon 25465	Manassas City	38.75712	-77.464935	Closed	2/6/1991	3/23/2000	2024
19973193	E E Wine Incorporated	Manassas City	38.757166	-77.464836	Closed	4/3/1997	2/8/2008	2030
20073125	Sanchez Property - Manassas Mobile Home Park	Manassas City	38.757189	-77.460177	Closed	1/3/2007	10/4/2007	1291
20013138	ABC Store 133	Manassas City	38.75727	-77.467436	Closed	1/19/2001	3/5/2003	2307
19973061	E E Wine	Manassas City	38.75726	-77.46476	Closed	10/4/1996	2/8/2008	2054
20123070	E E Wine - Manassas	Manassas City	38.757276	-77.465319	Closed	10/27/2011	5/30/2017	2117

PC Number	Site Name	City/County	Latitude	Longitude	Status	Reported Date	Closure Date	Proximity to Project Area (Feet)
19940700	Crown VA501	Manassas City	38.75727	-77.464103	Closed	10/25/1993	11/4/2003	1974
19993006	Crown VA501	Manassas City	38.757279	-77.464123	Closed	7/2/1998	8/4/1998	1979
19963176	E E Wine Bulk Facility	Manassas City	38.757346	-77.465037	Closed	3/29/1996	2/8/2008	2112
20143165	Manassas Mobile Home Park Lot 109	Prince William County	38.757308	-77.460167	Closed	4/7/2014	8/14/2014	1325
20043188	Johnson William Mobile Home Residence	Prince William County	38.757396	-77.461862	Closed	2/3/2004	6/11/2004	1650
20063193	Waste Management - Quarry Road Site	Manassas City	38.757327	-77.451278	Closed	1/30/2006	5/23/2006	258
20013271	Plantation Investments Property	Prince William County	38.7575	-77.455534	Closed	5/11/2001	6/13/2001	520
19963057	Goodyear Tire and Rubber Company	Manassas City	38.757622	-77.465587	Closed	10/19/1995	5/7/1996	2262
20093208	Mattos Incorporated Property	Manassas City	38.757771	-77.463813	Closed	5/28/2009	6/26/2009	2097
20083051	Manassas Dodge former	Manassas City	38.758019	-77.464851	Closed	8/14/2007	10/29/2007	2314
19941789	Bull Run Trailer Park	Prince William County	38.758708	-77.461306	Closed	1/25/1994	9/9/1994	1929
20183208	Pozos Sandra Residence	Manassas City	38.758806	-77.460863	Closed	4/20/2018	4/29/2019	1878
20053164	Leonard Susan Residence	Prince William County	38.758946	-77.461103	Closed	12/24/2004	2/9/2005	1962
20063241	East End Mobil Home Park #21	Prince William County	38.759038	-77.460991	Closed	4/11/2006	6/28/2006	1967
19954035	7 Eleven 22095	Manassas City	38.759253	-77.455928	Closed	8/10/1994	2/17/1995	1080
20133022	Leggett Tire Company	Manassas City	38.75951	-77.456634	Closed	8/2/2012	8/24/2012	1282
19891138	Merchants Tire and Auto	Manassas City	38.759645	-77.453788	Closed	3/24/1989	9/21/1994	807

PC Number	Site Name	City/County	Latitude	Longitude	Status	Reported Date	Closure Date	Proximity to Project Area (Feet)
19920367	Ted Britt Nissan	Manassas City	38.760587	-77.459076	Closed	8/21/1991	4/24/1996	2030
20083037	Exxon 26980	Manassas City	38.761562	-77.459961	Closed	7/18/2007	12/3/2007	2465
19983764	Skippys Trucking Incorporated	Manassas City	38.761824	-77.45458	Closed	5/21/1998	5/21/1998	1564
19920208	Osbourn Park Senior High School	Prince William County	38.762404	-77.449029	Closed	7/30/1991	9/20/1994	706
20113153	UOSA - Russia Branch Pump Station	Manassas Park City	38.764266	-77.441158	Closed	1/7/2011	6/16/2011	135
19983664	Birmingham Green	Prince William County	38.764561	-77.453704	Closed	2/10/1998	8/8/2002	2166
20063264	Lisbon Concrete Enterprises Incorporated	Manassas Park City	38.76599	-77.445441	Closed	6/5/2006	8/11/2006	1045
19954118	7 Eleven 28505	Manassas Park City	38.770116	-77.445535	Closed	11/18/1994	3/28/1995	2175
20183158	7 Eleven 28505	Manassas Park City	38.770125	-77.445574	Closed	2/1/2018	4/29/2019	2185
19963024	Jet Diesel and Hydraulic Incorporated	Manassas Park City	38.770774	-77.439091	Closed	8/23/1995	6/5/1996	874
20153049	Adventure Links at Hemlock Overlook Park	Fairfax County	38.770634	-77.406883	Closed	9/15/2014	12/15/2015	1895
20193158	C W Strittmatter Incorporated	Manassas Park City	38.771662	-77.440142	Closed	3/15/2019	5/13/2019	1303
20073142	Spring Valley Concrete Incorporated	Manassas Park City	38.772459	-77.443566	Closed	1/19/2007	4/10/2007	2268
20143208	So-Deep Incorporated	Manassas Park City	38.772483	-77.440314	Closed	5/22/2014	8/12/2014	1506
20063012	Manassas Park Middle School	Manassas Park City	38.777504	-77.44133	Closed	7/21/2005	10/5/2005	1881

PC Number	Site Name	City/County	Latitude	Longitude	Status	Reported Date	Closure Date	Proximity to Project Area (Feet)
20153112	Whisler Brian L and Margaret Residence	Fairfax County	38.77771	-77.3883	Closed	12/1/2014	4/6/2015	2568
19993775	J S C Concrete	Manassas Park City	38.780097	-77.439451	Closed	3/16/1999	2/11/2002	1728
19900836	Clifton Church	Fairfax County	38.780815	-77.388467	Closed	1/8/1990	4/1/1993	2609

1408 Roseneath Road, Suite B
Richmond, VA 23230

Corporate Headquarters
6575 West Loop South, Suite 300
Bellaire, TX 77401
Main: 713.520.5400

March 14, 2023

Mr. James Young
Dominion Energy Virginia
120 Tredegar St.
Richmond, VA 23219

Re: Threatened and Endangered Species Review
Line #2011 230 kV Partial Rebuild
Manassas, Manassas Park, Prince William County, and Fairfax County, Virginia

Dear Mr. Young:

On behalf of Dominion Energy Virginia ("Dominion Energy" or the "Company"), RES conducted online database searches to identify federal and state listed threatened and endangered species with the potential to occur in the vicinity of the proposed Line #2011 230 kV Partial Rebuild Project (the "Project" or "Partial Rebuild Project") area. The Partial Rebuild Project consists of the following components:

- Rebuild approximately 7.25 miles of existing overhead 230 kV transmission Line #2011 from existing Structure #2011/68, which is located one span outside of the Company's existing Cannon Branch Substation and is not being replaced, to the Clifton Substation. Specifically, the Company proposes to replace the existing Line #2011 1590 ACSR (45/7) conductor from Structure #2011/68 to Clifton Substation with three-phase twin-bundled 768.2 ACSS/TW type conductor, designed for a maximum operating temperature of 250 degrees Celsius and a minimum summer transfer capacity of 1,573 MVA. In order to accommodate the higher capacity of the uprated conductor, the Company additionally proposes to replace the existing single circuit 230 kV weathering steel monopoles with single circuit 230 kV weathering steel monopoles.

- Replace all substation equipment at the Clifton Substation that is associated with Line #2011 and not currently rated for 4000 ampere ("amp" or "A") to provide a 4000A single breaker rating.

- Uprate the Company's line switches to 4000A at the Prince William Delivery Point ("DP") and Battery Heights DP, both of which are the City of Manassas' DPs tapped from Line #2011.

RES conducted a search of the below-mentioned databases to assist the State Corporate Commission application process and identify potential project constraints related to threatened and endangered species. The online database searches included the following.

- U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation online system (IPaC)
- USFWS Bald Eagle Concentration Area Map
- USFWS Rusty Patched Bumble Bee Map

- USFWS Critical Habitat for Threatened and Endangered Species Mapper
- Virginia Department of Wildlife Resources (DWR) Virginia Fish and Wildlife Information Service (VaFWIS)
- Virginia Department of Conservation and Recreation's (DCR) Natural Heritage Data Explorer (NHDE)
- Center for Conservation Biology's (CCB) Eagle Nest Locator
- DWR Northern Long Eared Bat (NLEB) Winter Habitat and Roost Tree Application
- DWR Little Brown Bat (MYLU) and Tri-colored Bat (PESU) Winter Habitat and Roosts online mapping portal

RESULTS

Species with confirmed or potential presence within the Project vicinity have been identified by database searches and are provided in Table 1 below.

Table 1. Database Search Results

Species	Status	Database	Result
Northern long-eared bat (NLEB) (*Myotis septentrionalis*)	FE ST	USFWS-IPaC, DWR-VAFWIS, DWR-NLEB Winter Habitat and Roost Tree Application	Identified as potentially occurring within or near the Partial Rebuild Project. The Partial Rebuild Project area contains potential habitat for the NLEB because it is located within the species' range and contains forested land. According to the DWR NLEB Winter Habitat and Roost Tree Application, the Partial Rebuild Project is not located in the vicinity of known maternity roosts or hibernaculum. Minimal tree clearing along the existing transmission line corridor and tree clearing for construction access ingress and egress will be required. The Company intends to complete NLEB absence/presence surveys within the Project vicinity. If NLEB are identified, tree clearing activities will adhere to the applicable time of year restrictions.
Monarch butterfly (*Danaus plexippus*)	FC	USFWS-IPaC	Identified as potentially occurring within or near the Rebuild Project. This species is a nectivorous insect preferring a variety of habitats including rangelands, meadows, riparian areas, farms, and open forests. Suitable habitat may be present in the right-of-way. Vegetation may be temporarily disturbed due to construction activity; however, no long term or adverse effects are expected. No agency coordination for federal candidate species is required; therefore, no further action is required for this species.

Species	Status	Database	Result
Brook floater (*Alasmidonta varicosa*)	SE	DWR-VAFWIS, DCR-NHDE	Confirmed as occurring approximately 1.90 miles west of the Partial Rebuild Project in Broad Run and identified as potentially occurring within the Partial Rebuild Project area. This species typically inhabits freshwater rivers and streams with areas of riffles and coarse-sandy or cobble substrates. Not found in stagnant waters such as lakes and ponds. No in-stream work will be required for the Partial Rebuild Project and erosion and sediment controls will be utilized to prevent runoff. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the brook floater.
Yellow lance (*Elliptio lanceolata*)	FT ST	DWR-VAFWIS	Confirmed as occurring approximately 1.90 miles west of the Partial Rebuild Project in Broad Run and identified as potentially occurring within the Partial Rebuild Project area. This species prefers clean, coarse to medium sized sands as substrate. On occasion, specimens are also found in gravel substrates. This species is found in the main channels of drainages down to streams as small as a meter across. No in-stream work will be required for the Partial Rebuild Project and erosion and sediment controls will be utilized to prevent runoff. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the yellow lance.
Wood turtle (*Glyptemys insculpta*)	ST	DWR-VAFWIS	Identified as potentially occurring within or near the Rebuild Project. The typical habitat for this semiaquatic species is a forested stream with clear, moderately flowing water; a gravel bottom; and deep pools with sufficient amounts of leaf litter for overwintering. The ideal surrounding forested flood plain would be one with a mix of mature and young forest as well as some interspersed open, wet meadows. According to DWR's *Time of Year Restrictions and Other Guidance*, published July 1, 2021, in-stream work within wood turtle inhabited streams is prohibited from October 1 through March 31 and work within 900 feet of wood turtle inhabited streams is prohibited from April 1 through September 30. An undisturbed naturally vegetated buffer of at least 300 feet (preferably larger) must be maintained along wood turtle inhabited streams. Extra precautionary measures may need to be taken if working near streams to protect individual turtles (i.e., posting signs or providing information to contractors on how to identify wood turtles and procedures that must be followed if one is identified within the Partial Rebuild Project area). Any anticipated impacts and requirements associated with this project will be identified through the permitting and regulatory process.

Species	Status	Database	Result
Torrey's mountainmint (*Pycnanthemum torreyi*)	ST	DCR NHDE	Identified as potentially occurring in the portion of the Project located within the Rocky Branch – Broad Run subwatershed (HUC 020700100504), from Structure #2011/43 to Structure #2011/68. In Virginia, habitat for this species consists of dry, rocky, deciduous woods, along roadsides, and in thickets near streams. This species is apparently declining throughout its range. Historic occurrences out-number extant occurrences in almost all of the states having available information within the range of the species. There are approximately 35 confirmed extant occurrences throughout its range. From Structure #2011/68 to Structure #2011/43, the Partial Rebuild Project is primarily located in existing transmission line easements that are currently maintained for operation of the existing transmission line facilities and crosses through mixed commercial, residential, and industrial uses in heavily developed areas of Manassas. As such, suitable habitat for Torrey's mountainmint is not anticipated to be present within the portion of the Partial Rebuild Project located within the Rocky Branch – Broad Run subwatershed. Given the lack of suitable habitat and documented occurrences within the Project area, the Partial Rebuild Project is not anticipated to adversely affect the Torrey's mountainmint.
Rusty patched bumble bee (*Bombus affinis*)	FE	DCR-NHDE, USFWS Rusty Patched Bumble Bee Map	Identified as potentially occurring within or near the Rebuild Project. This species is a generalist forager that gather pollen and nectar from a wide variety of flowering plant species. As such, they have been observed and collected in a variety of habitats, including prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. Additionally, as maintained rights-of-ways are often cleared of shrubs and trees, flowering herbaceous plants often dominate and can make for good habitat for bee species. Habitat analysis using the USFWS Rusty Patch Bumble Bee Map was completed to determine if the Partial Rebuild Project is located within High Potential Zones where the species is likely to be present. This Partial Rebuild Project does not intersect with the zones of High Potential or Low Potential based on the map data. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the rusty patched bumble bee.

Species	Status	Database	Result
Bald eagle (*Halieaeetus leucocephalus*)	Bald and Golden Eagle Protection Act	CCB, USFWS Bald Eagle Concentration Area Map	No Bald eagle nests are located within 660 feet of the Partial Rebuild Project. The USFWS Virginia Bald Eagle Concentration Area Map confirms that the proposed Partial Rebuild Project area does not intersect any designated Bald eagle concentration areas. The Bald eagle prefers open bodies of water surrounded by tall trees but can also be found in forested areas away from waterbodies. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the Bald eagle.
Critical Habitat for Threatened and Endangered Species	Critical Habitat	USFWS – Critical Habitat for Threatened and Endangered Species	No critical habitat present.

Note: FE denotes species is federally endangered; FT denotes species is federally threatened; FC denotes federal candidate species; SE denotes species is state endangered; ST denotes species is state threatened.

CONCLUSION

The following conclusions are based upon the proposed scope of work, as described by Dominion Energy. The proposed scope of work assumes construction access will avoid stream crossings where practical or use crane mats to span stream crossings, and erosion and sediment controls will be used as appropriate throughout the Project to protect wetlands and water resources. The scope of work assumes most of the work will occur within existing, cleared and maintained transmission line corridor and areas previously cleared for the development of the Cannon Branch and Clifton Substations and industrial and commercial facilities. However, some trimming of tree limbs along the edge of the corridor and within new easements may be conducted to support construction activities for the Partial Rebuild Project. Additionally, tree clearing is anticipated to be required for temporary construction access to Structures #2011/6-20.

Northern Long-eared Bat

The USFWS IPaC database identified the NLEB as potentially occurring within or near the Project area; however, the DWR NLEB Winter Habitat and Roost Tree Application map shows no known hibernacula or maternity roost trees are within the Project vicinity. NLEBs spend the winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. NLEBs seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds (https://www.fws.gov/Midwest/endangered/mammals/nleb/nlebFactSheet.html). Minimal tree clearing along the existing transmission line corridor and tree clearing for construction access ingress and egress to Structures #2011/6-20 will be required. According to the DWR NLEB Winter Habitat and Roost Tree Application, the Partial Rebuild Project is not located in the vicinity of known maternity roosts or hibernaculum. The Company intends to complete NLEB

absence/presence surveys within the Project vicinity. If NLEB are identified, tree clearing activities will adhere to the applicable time of year restriction period from April 1 to November 14.

Monarch Butterfly

The USFWS IPaC database identified the Monarch butterfly as potentially occurring within or near the Rebuild Project. This species is a nectivorous insect preferring a variety of habitats including rangelands, meadows, riparian areas, farms, and open forests. Vegetation may be temporarily disturbed due to construction activity; however, no long term or adverse effects are expected. No agency coordination for federal candidate species is required; therefore, no further action is required for this species

Yellow Lance and Brook Floater

According to the DWR VAFWIS, the yellow lance and brook floater were identified as potentially occurring within the Project vicinity, and both species have been observed within Broad Run, which is located approximately 1.90 miles west of the Project area. Based on the anticipated scope of the Project, there are no anticipated impacts to the brook floater and yellow lance. No in-stream work is proposed, as all streams and other Waters of the U.S. (WOUS) that may be crossed for construction access will use non-impacting temporary structures such as timber mats or timber mat bridges. If the Project scope changes to include in-stream work, additional coordination may be required.

Torrey's Mountainmint

According to the DCR NHDE, Torrey's mountainmint was identified as potentially occurring in the portion of the Project located within the Rocky Branch – Broad Run subwatershed (HUC 020700100504), from Structure #2011/43 to Structure #2011/68. Torrey's mountainmint is an aromatic herb that produces clusters of small, white flowers from late June to October. In Virginia, habitat for this species consists of dry, rocky, deciduous woods, along roadsides, and in thickets near streams. This species is apparently declining throughout its range. Historic occurrences out-number extant occurrences in almost all of the states having available information within the range of the species. There are approximately 35 confirmed extant occurrences throughout its range. From Structure #2011/68 to Structure #2011/43, the Partial Rebuild Project is primarily located in existing transmission line easements that are currently maintained for operation of the existing transmission line facilities and crosses through mixed commercial, residential, and industrial uses in heavily developed areas adjacent to the Norfolk Southern Railroad. As such, suitable habitat for Torrey's mountainmint is not anticipated to be present within the portion of the Partial Rebuild Project located within the Rocky Branch – Broad Run subwatershed. Given the lack of suitable habitat and documented occurrences within the Project area, the Partial Rebuild Project is not anticipated to adversely affect the Torrey's mountainmint.

Wood Turtle

Additionally, the DWR VAFWIS identified the wood turtle (*Glyptemys insculpta*) as the only semiaquatic/terrestiral species of concern "likely to occur" within a 2-mile radius of the project site. The typical habitat for these semiaquatic turtles is a forested stream with clear, moderately flowing water; a gravel bottom; and deep pools with sufficient amounts of leaf litter for overwintering. The ideal surrounding forested flood plain would be one with a mix of mature and young forest as well as some interspersed open, wet meadows. Based on observations made during WOUS delineation and DWR's predicted habitat map provided for the wood turtle, potential habitat for

this species appears to be present within and along Bull Run and the unnamed tributaries to Bull Run that traverse the project site, as well as within the forested areas surrounding these streams. According to DWR's *Time of Year Restrictions and Other Guidance*, published July 1, 2021, in-stream work within wood turtle inhabited streams is prohibited from October 1 through March 31 and work within 900 feet of wood turtle inhabited streams is prohibited from April 1 through September 30. An undisturbed naturally vegetated buffer of at least 300 feet (preferably larger) must be maintained along wood turtle inhabited streams. Extra precautionary measures will be taken if working near streams to protect individual turtles (i.e., posting signs or providing information to contractors about how to identify wood turtles and procedures that need to be taken if one is identified within the project area). Any anticipated impacts and requirements associated with this project will be identified through the permitting and regulatory process.

Rusty-Patched Bumblebee

The DWR VaFWIS also identified the rusty patched bumblebee (*Bombus affinis*) as potentially occurring within or near the Rebuild Project. This species is a generalist forager that gather pollen and nectar from a wide variety of flowering plant species. As such, they have been observed and collected in a variety of habitats, including prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. Additionally, as maintained rights-of-ways are often cleared of shrubs and trees, flowering herbaceous plants often dominate and can make for good habitat for bee species. Habitat analysis using the USFWS Rusty Patch Bumble Bee Map was completed to determine if the Partial Rebuild Project is located within High Potential Zones where the species is likely to be present. This Partial Rebuild Project does not intersect with the zones of High Potential or Low Potential based on the map data. Therefore, the Partial Rebuild Project is not anticipated to adversely affect the rusty patched bumblebee.

Bald Eagle

The CCB Bald Eagle Nest Locator identified no bald eagle nests within 660 feet of the Project area. The closest identified nest (Nest PW1403) to the Project is located approximately 4,735 feet from the Project area. The USFWS Virginia Bald Eagle Concentration Area Map confirms that the proposed Project area does not intersect any designated bald eagle concentration areas.

Critical Habitat

According to the USFWS Critical Habitat for Threatened and Endangered Species Mapper, there are no designated critical habitats within the Project area. Therefore, the Partial Rebuild Project is not anticipated to adversely affect critical habitat.

In summary, construction and maintenance of the transmission line facilities could have some minor effects on wildlife; however, impacts on most species will be short-term in nature, and limited to the period of construction. As Dominion Energy will obtain all necessary permits prior to construction, such as authorization from the Virginia Marine Resources Commission, Virginia Department of Environmental Quality, and the U.S. Army Corps of Engineers, coordination with the DWR, DCR, and USFWS will take place through the respective permit processes to avoid and minimize impacts to listed species, to the extent there are any. The complete results from the database searches are provided for your reference (See Attachments) for use in agency coordination. If you have any questions, please contact me at your earliest convenience.

Best Regards,

Colin Zehrer
Project Manager
(804) 350-6411
czehrer@res.us

Attachments: Database Search Results

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032

In Reply Refer To:
Project Code: 2023-0051292
Project Name: Line 2011 230kV Partial Rebuild

March 02, 2023

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

To Whom It May Concern:

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

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

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

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

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

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

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

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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

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

Attachment(s):

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

OFFICIAL SPECIES LIST

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

This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2023-0051292
Project Name: Line 2011 230kV Partial Rebuild
Project Type: Transmission Line - Maintenance/Modification - Above Ground
Project Description: Rebuild approximately 7.25 miles of existing overhead 230 kV Cannon Branch-Clifton Line #2011 from existing Structure #2011/68, which is not being replaced, located one span outside of Dominion Energy's existing Cannon Branch Substation to the Clifton Substation. Specifically, Dominion Energy proposes to replace the 65 single circuit 230 kV steel monopoles with arms with 65 single circuit 230 kV steel monopoles with arms.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.7494969,-77.47405243380769,14z

Counties: Virginia

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

INSECTS

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

CRITICAL HABITATS

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

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

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

MIGRATORY BIRDS

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

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

---

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

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

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

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

NAME	BREEDING SEASON
Cerulean Warbler *Dendroica cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 28 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

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

Probability of Presence (▮)

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

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

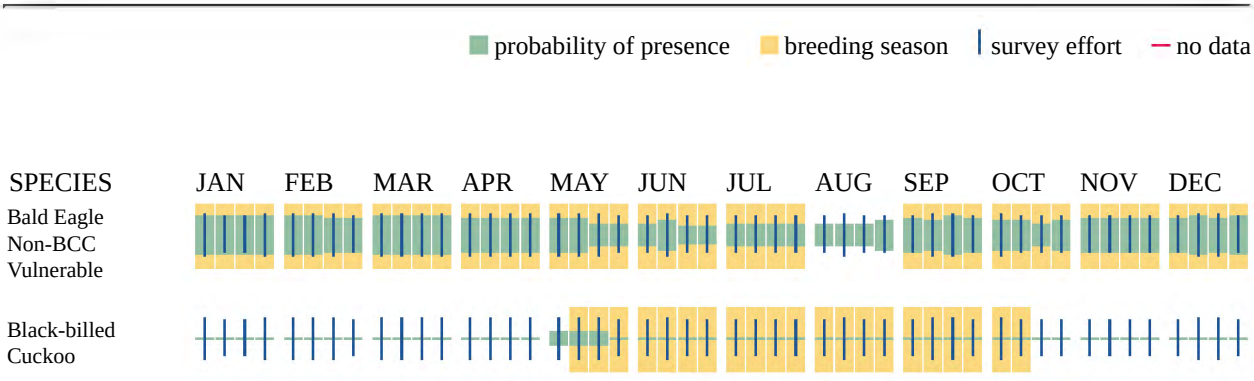
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability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

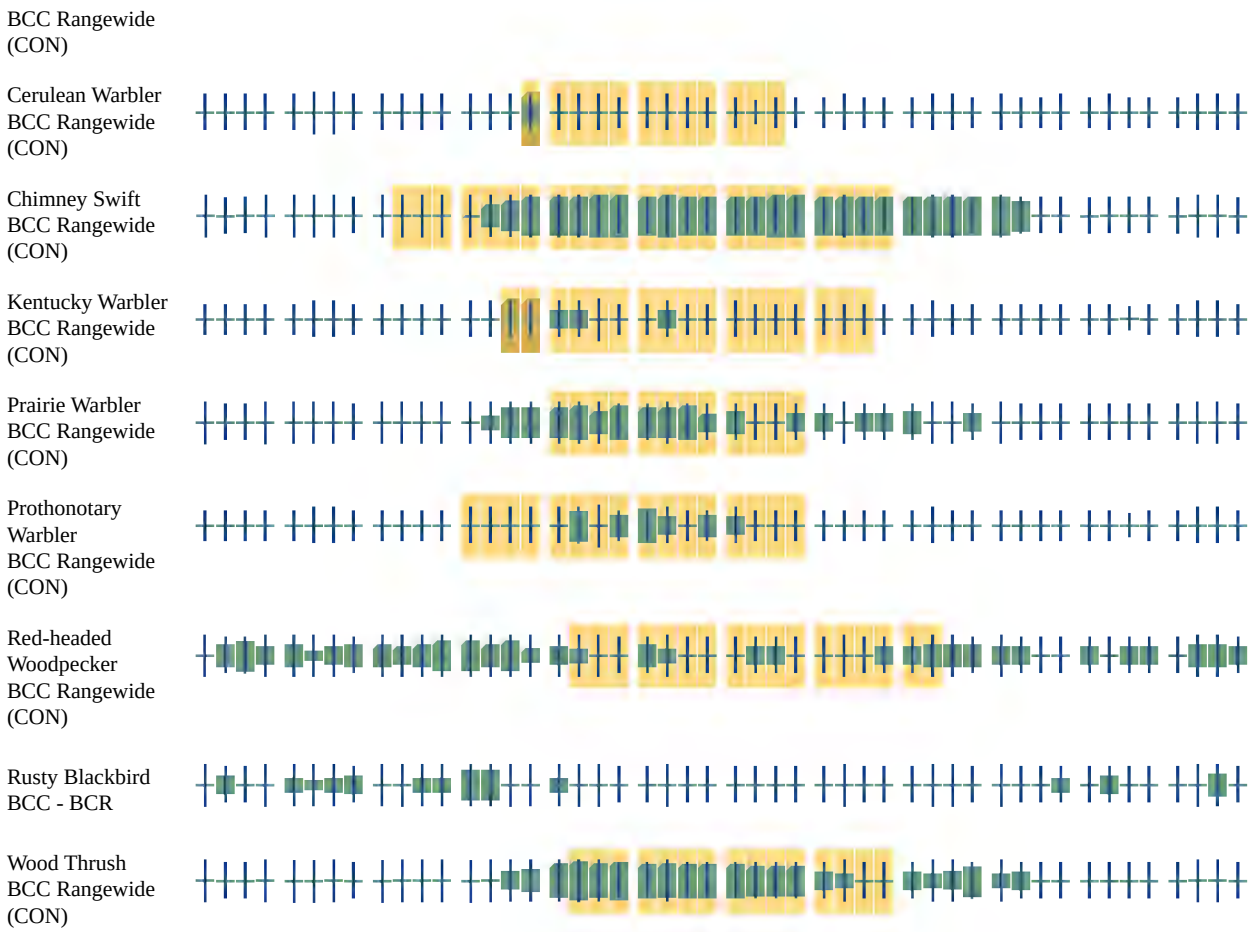
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

No Data (–)
A week is marked as having no data if there were no survey events for that week.

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





Additional information can be found using the following links:

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

MIGRATORY BIRDS FAQ

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

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

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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

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

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

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

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

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

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

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

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

IPAC USER CONTACT INFORMATION

Agency: RES
Name: Colin Zehrer
Address: 1408 B Roseneath Road
Address Line 2: Suite B
City: Richmond
State: VA
Zip: 23230
Email czehrer@res.us
Phone: 8043506411

Rusty Patched Bumble Bee Map

3/2/2023

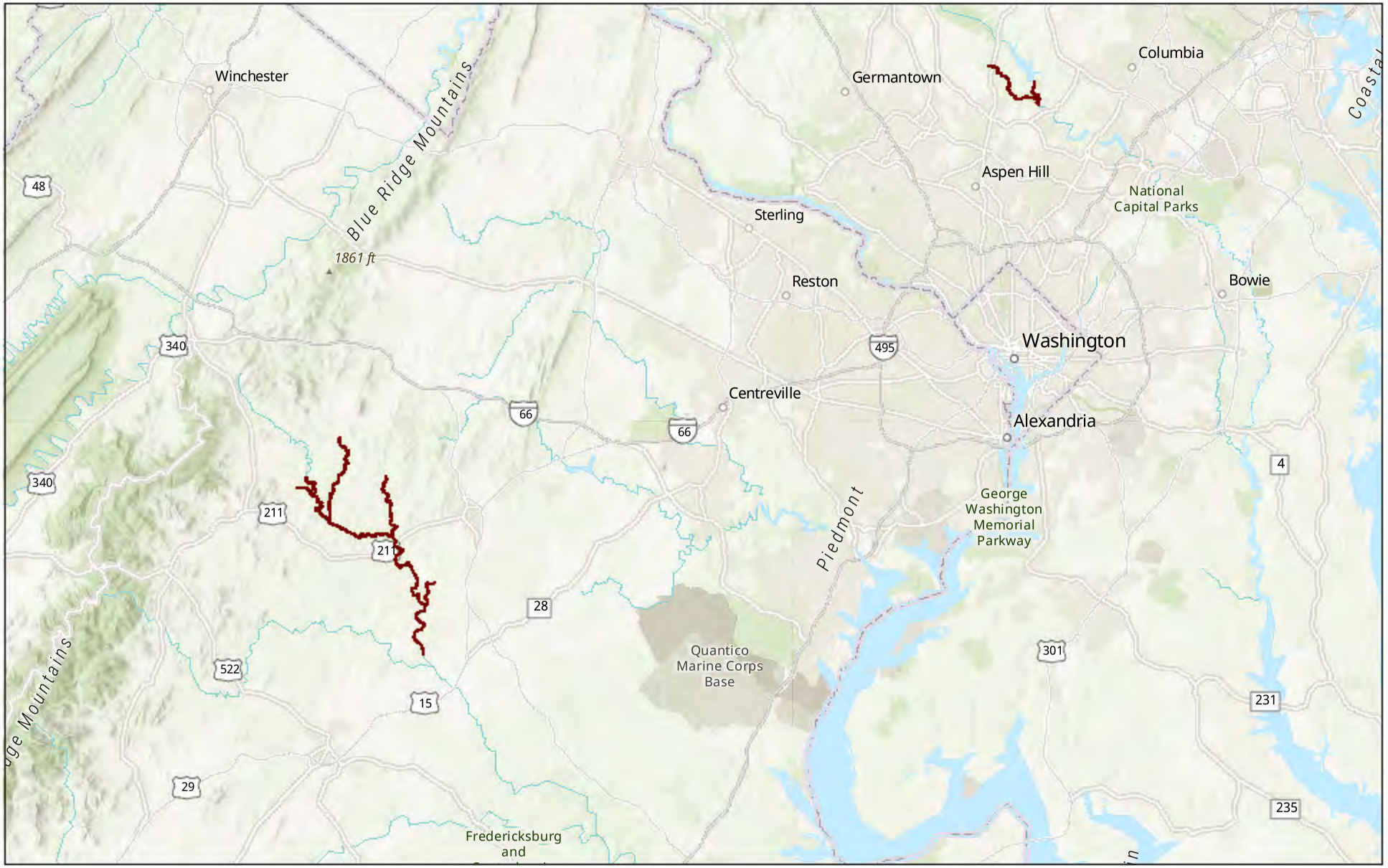
1:432,742

0 2.75 5.5 11 mi

0 4.5 9 18 km

Earthstar Geographics

USFWS Critical Habitat



3/2/2023

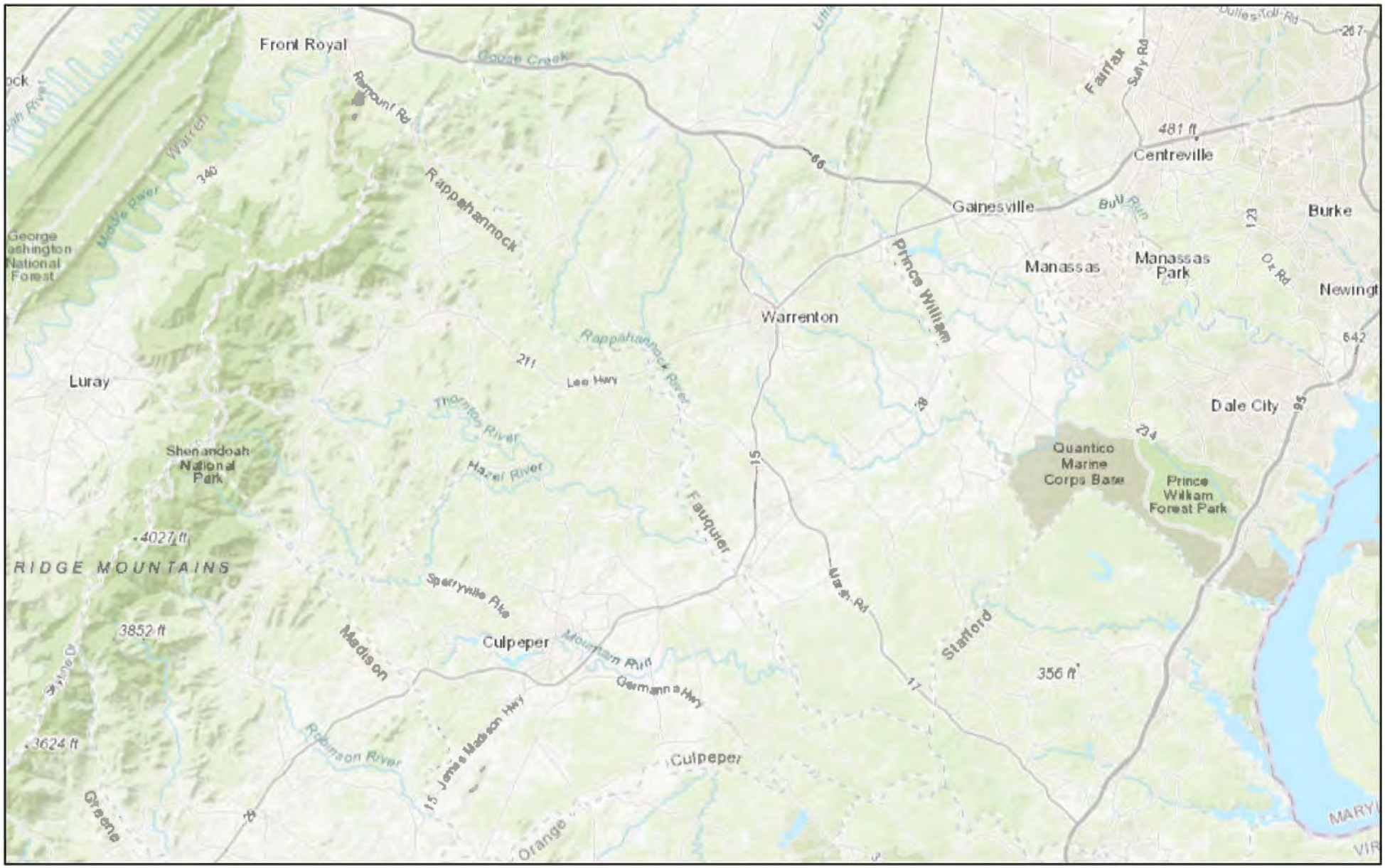
1:848,391

0 5 10 20 mi

0 5 10 20 km

Esri, CGIAR, USGS, County of Prince William, Fairfax County, VA, VGIN, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

NLEB Locations and Roost Trees



3/2/2023, 2:18:42 PM

1:577,791

0 3.75 7.5 15 mi

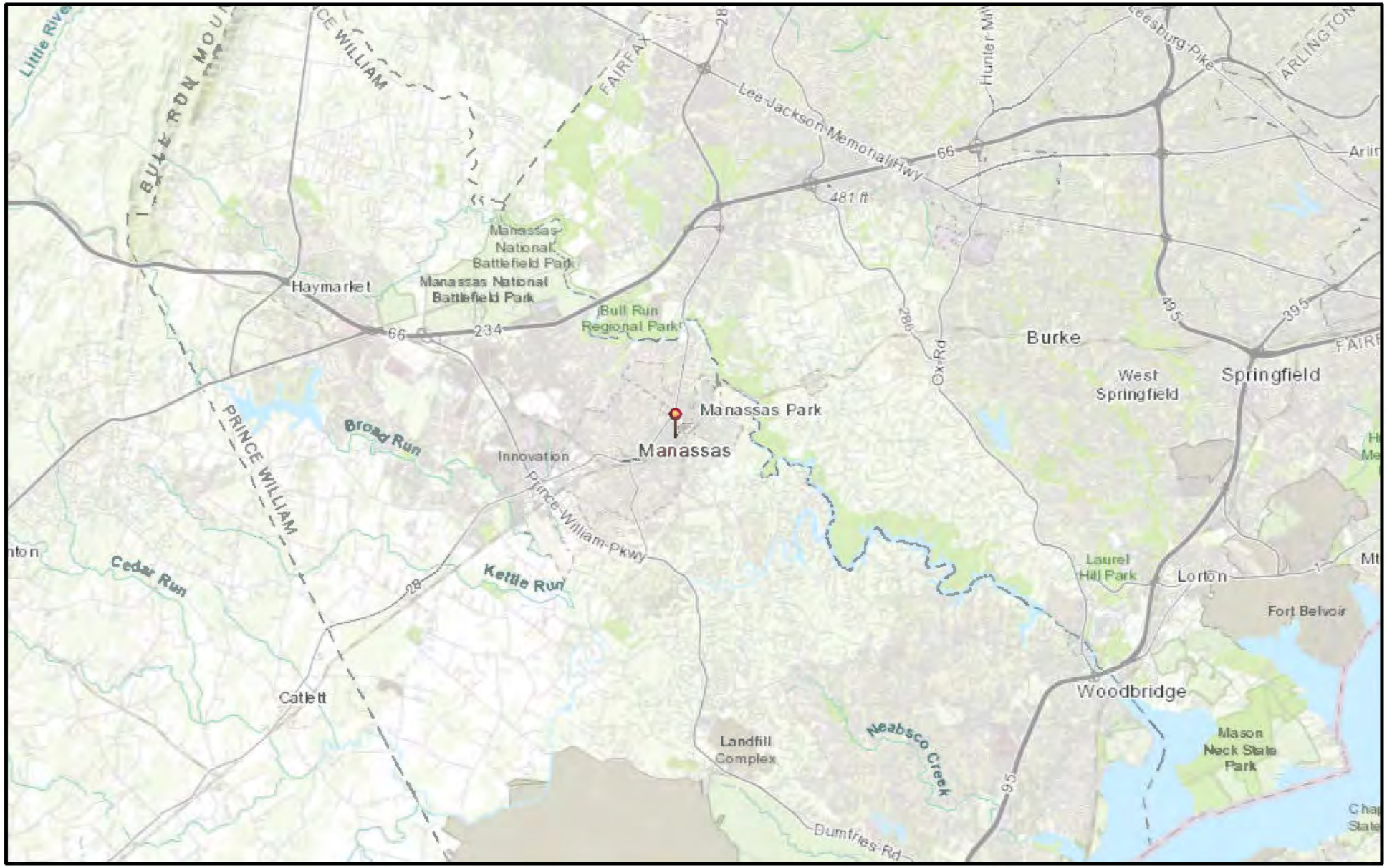
0 5 10 20 km

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

VA Dept. Game & Inland Fisheries

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

Little Brown Bat and Tricolored Bat WH and Roost Trees



7/12/2022, 2:02:21 PM

1:288,895

0 2 4 8 mi

0 3 6 12 km

County of Prince William, Fairfax County, VA, VITA, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS

Dept. Game and Inland Fisheries

County of Prince William, Fairfax County, VA, VITA, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS |

VaFWIS Search Report Compiled on 3/2/2023, 2:05:53 PM

Help

Known or likely to occur within a **2 mile buffer around line beginning 38.7797000 -77.3976999** in **059 Fairfax County, 153 Prince William County, 683 Manassas City, 685 Manassas Park City, VA**

View Map of Site Location

736 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 33) (33 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
050022	FTST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
060029	FTST	IIa	Lance, yellow	Elliptio lanceolata	Yes	BOVA,SppObs,HU6
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050027	FPSE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes	BOVA,TEWaters,Habitat,SppObs,HU6
030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Potential	BOVA,Habitat,HU6
040096	ST	Ia	Falcon, peregrine	Falco peregrinus		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
040379	ST	Ia	Sparrow, Henslow's	Centronyx henslowii		BOVA,HU6
100155	ST	Ia	Skipper, Appalachian grizzled	Pyrgus wyandot		BOVA,HU6
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100079	FC	IIIa	Butterfly, monarch	Danaus plexippus		BOVA
030063	CC	IIIa	Turtle, spotted	Clemmys guttata		BOVA,HU6
030012	CC	IVa	Rattlesnake, timber	Crotalus horridus		BOVA

010077		Ia	Shiner, bridle	Notropis bifrenatus		BOVA
040040		Ia	Ibis, glossy	Plegadis falcinellus		BOVA,HU6
040306		Ia	Warbler, golden-winged	Vermivora chrysoptera		BOVA
100248		Ia	Fritillary, regal	Speyeria idalia idalia		BOVA,HU6
040213		Ic	Owl, northern saw-whet	Aegolius acadicus		BOVA,HU6
040052		IIa	Duck, American black	Anas rubripes		BOVA,HU6
040033		IIa	Egret, snowy	Egretta thula		BOVA
040029		IIa	Heron, little blue	Egretta caerulea caerulea		BOVA
040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040181		IIa	Tern, common	Sterna hirundo		BOVA,HU6
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA,HU6
040140		IIa	Woodcock, American	Scolopax minor	Potential	BOVA,BBA,HU6
060071		IIa	Lampmussel, yellow	Lampsilis cariosa		BOVA
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA
040304		IIc	Warbler, Swainson's	Limnothlypis swainsonii		BOVA,HU6
100154		IIc	Butterfly, Persius duskywing	Erynnis persius persius		BOVA,HU6
100166		IIc	Skipper, Dotted	Hesperia attalus slossonae		HU6

To view **All 736 species** View 736

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

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Widlife Action Plan Conservation Opportunity Ranking:

a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Impediments to Fish Passage

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (11 Reaches)

View Map of All Threatened and Endangered Waters

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Broad Run (015607)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (016525)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (019494)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (021994)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (022362)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (022431)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (023568)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (024722)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes

Broad Run (024825)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (027949)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Broad Run (029210)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Species Observations (152 records - displaying first 20 , 6 Observations with Threatened or Endangered species)

View Map of All Query Results Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
55402	SppObs	Aug 21 1998	BEATY, WINTERRINGER, ZIMMERMAN, MAIR, JONES, DORSEY, CHEN, , AND GILBERT, VIRGINIA COOPERATIVE FISH AND WILDLIFE RESEARCH UNIT	6	FTSE	I	Yes
55694	SppObs	Aug 21 1998	Braven B. Beaty and Richard J. Neves, Virginia Cooperative Fish and Wildlife Unit, VA Tech	6	FTSE	I	Yes
3602	SppObs	Sep 24 1991	Div. Natural Heritage	4	FTSE	I	Yes
315311	SppObs	Sep 16 2005	D. Neves, J. Jones, A. Liberty, H. Dan, J. Schmerfeld, T. Bolton	2	FTST	II	Yes
5952	SppObs	Aug 24 1993	Stevenson, P. H.	8	SE	I	Yes
5949	SppObs	Aug 23 1993	Stevenson, P. H.	9	SE	I	Yes
633230	SppObs	Oct 20 2015	Rick Browder; Gabriel Darkwah	3		III	Yes

610933	SppObs	Jun 6 2010	Anthony; Bulmer	10		III	Yes
605908	SppObs	May 28 2009	Mark; Causey	1		III	Yes
317212	SppObs	Aug 18 2006	Christine Geist	1		III	Yes
317201	SppObs	Jun 23 2006	Christine Geist	1		III	Yes
300217	SppObs	May 22 2001	Mark F. Causey, Ken H. Bass, Liam J. McGranaghan	1		III	Yes
300220	SppObs	May 21 2001	Mark F. Causey, Ken H. Bass, Liam J. McGranaghan	1		III	Yes
4815	SppObs	Jan 1 1900	Erika Wilson	1		III	Yes
634402	SppObs	Jul 11 2020	Brett Ostby; Braven Beaty; Caitlin Carey	4		IV	Yes
631125	SppObs	Sep 20 2019	Brett Ostby; Braven Beaty	7		IV	Yes
631124	SppObs	Sep 20 2019	Brett Ostby; Braven Beaty	7		IV	Yes
631107	SppObs	Aug 9 2019	Brett Ostby; Braven Beaty	5		IV	Yes
633790	SppObs	May 25 2016	Todd Rimkus; Mark Rimkus	2		IV	Yes
610934	SppObs	Jun 7 2010	Anthony; Bulmer	8		IV	Yes

Displayed 20 Species Observations

Selected 152 Observations View all 152 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species (10 Reaches)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Broad Run (20700102)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
Buckhall Branch (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Castle Creek (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Johnny Moore Creek (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes

Maple Branch (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Occoquan River (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Old Mill Branch (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Popes Head Creek (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
tributary (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
tributary (20700102)	SE	060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes
tributary (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
tributary (20700102)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Virginia Breeding Bird Atlas Blocks (10 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
52193	Fairfax, CW	44		III	Yes
52195	Fairfax, SW	36		III	Yes
50196	Gainesville, SE	74		III	Yes
51182	Independent Hill, NE	76		III	Yes
51181	Independent Hill, NW	1			Yes
51194	Manassas, CE	1			Yes
51193	Manassas, CW	76		II	Yes
51196	Manassas, SE	15		II	Yes
51195	Manassas, SW	1			Yes
50182	Nokesville, NE	84		II	Yes

Public Holdings:

N/A

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

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
059	Fairfax	559	FESE	I
153	Prince William	483	FESE	I
683	Manassas City	372	FTSE	I
685	Manassas Park City	371	FTSE	I

USGS 7.5' Quadrangles:
Nokesville
Gainesville
Independent Hill
Manassas
Fairfax

USGS NRCS Watersheds in Virginia:

N/A

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

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
PL34	Broad Run-Rocky Branch	59	FTSE	I
PL41	Occoquan River-Occoquan Reservoir-Lake Jackson	56		I
PL44	Middle Bull Run	72	FTSE	I
PL46	Lower Bull Run	69	ST	I
PL47	Occoquan River/Occoquan Reservoir	67	ST	I

Compiled on 3/2/2023, 2:05:54 PM I1464483.0 report=all searchType= L dist= 3218 poi= 38.7797000 -77.3976999 siteDD= 38.7797023 -77.3977103;38.7784945 -77.3973874;;38.7781260 -77.3999027;;38.7778170 -77.4020544;;38.7774189 -77.4048982;;38.7766023 -77.4067915;;38.7757324 -77.4087164;;38.7750717 -77.4114642;;38.7745555 -77.4134001;;38.7744808 -77.4155218;;38.7752598 -77.4174269;;38.7761408 -77.4192455;;38.7769350 -77.4209792;;38.7770684 -77.4235824;;38.7777530 -77.4256832;;38.7788154 -77.4275445;;38.7793836 -77.4295181;;38.7789591 -77.4320433;;38.7775926 -77.4339148;;38.7756988 -77.4347687;;38.7737093 -77.4344367;;38.7717339 -77.4347912;;38.7699333 -77.4358463;;38.7679493 -77.4377353;;38.7659914 -77.4397444;;38.7651958 -77.4404731;;38.7638291 -77.4427388;;38.7625101 -77.4447612;;38.7612405 -77.4466874;;38.7599973 -77.4487120;;38.7587242 -77.4506442;;38.7574628 -77.4526415;;38.7566622 -77.4538562;;38.7558445 -77.4550985;;38.7550431 -77.4561294;;38.7540480 -77.4578093;;38.7526265 -77.4603246;;38.7521120 -77.4615987;;38.7516757 -77.4630213;;38.7513134 -77.4643392;;38.7510992 -77.4653116;;38.7509005 -77.4664431;;38.7507324 -77.4675331;;38.7506147 -77.4680202;;38.7500534 -77.4690286;;38.7499151 -77.4701121;;38.7497570 -77.4715967;;38.7495346 -77.4733621;;38.7494833 -77.4740604;;38.7498193 -77.4753492;;38.7495590 -77.4769354;;38.7494080 -77.4781888;;38.7491614 -77.4802428;;38.7490202 -77.4814008;;38.7488035 -77.4828515;;38.7485865 -77.4840936;;38.7483356 -77.4854305;;38.7480622 -77.4868043;;38.7477495 -77.4881822;;38.7472570 -77.4899600;;38.7464769 -77.4927671;;38.7456328 -77.4953712;;38.7447107 -77.4978780;;38.7437227 -77.5003058;

PixelSize=64; Anadromous=0.022331; BBA=0.040541; BECAR=0.019617; Bats=0.019735; Buffer=0.224709; County=0.064233; HU6=0.054015; Impediments=0.020432; Init=0.26647; PublicLands=0.026322; Quad=0.033037; SppObs=0.333665; TEWaters=0.032058; TierReaches=0.052782; TierTerrestrial=0.03439; Total=1.361296; Tracking_BOVA=0.286652; Trout=0.022173; huva=0.02892

Site Location

38,46,48.9 -77,23,51.7
is the Search Point

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

Show Search Area
(•) Yes ( ) No
2 Search distance miles buffer

Display at center	Search Point is not at map center

Base Map Choices
Topography

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

Map Overlay Legend

T & E Waters
Federal
State

Predicted Habitat WAP Tier I & II
Aquatic
Terrestrial

Trout Waters
Class I - IV
Class V - VI

Anadromous Fish Reach
Confirmed
Potential

Impediment

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

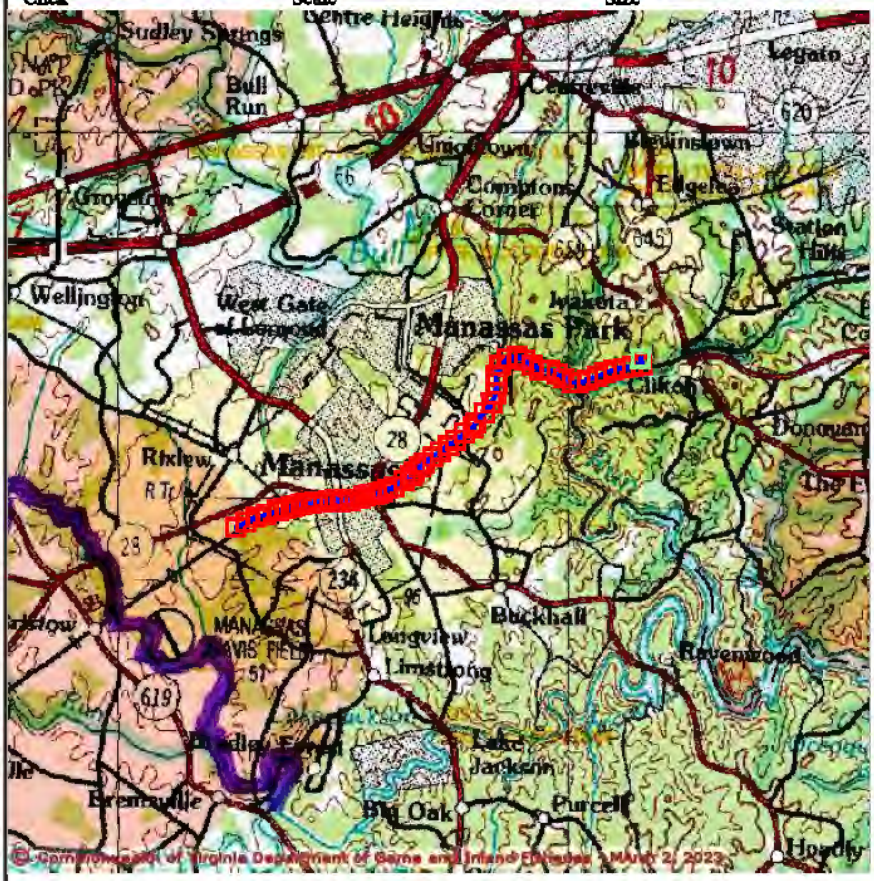
2 mile radius Search Area

Bald Eagle Concentration Areas and Roosts

Virginia Fish and Wildlife Information Service

Refresh Browser Page

Map Click Pan | Map Scale In Zoom Out | Screen Size Small Size Big | Help



N

2.5 0 2.5 5 7.5 10 Kilometers
2 0 2 4 6 8 Miles

Point of Search 38,46,46.9 -77,23,51.7
Map Location 38,45,42.1 -77,26,55.7

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

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

Map projection is UTM Zone 18 NAD 1983 with left 277631 and top 4302782. Pixel size is 25. . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 19200 meters east to west by 19200 meters north to south for a total of 368.6 square kilometers. The map display represents 63002 feet east to west by 63002 feet north to south for a total of 142.3 square miles.

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

map assembled 2023-03-02 14:15:39 (qa/qc March 21, 2016 12:20 - tn=1464483.0 dist=3218
I)
$poi=38.7797000 -77.3976999

Habitat Predicted for WAP Tier I and II Species where Turtle, wood (030062) observed

38,46,46.9 -77,23,51.7
is the Search Point

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

Show Search Area
(•) Yes ( ) No
2 Search distance miles buffer

Display at center	Search Point is not at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, TierReaches

Map Overlay Legend

Predicted Habitat WAP Tier I & II
Aquatic
Terrestrial

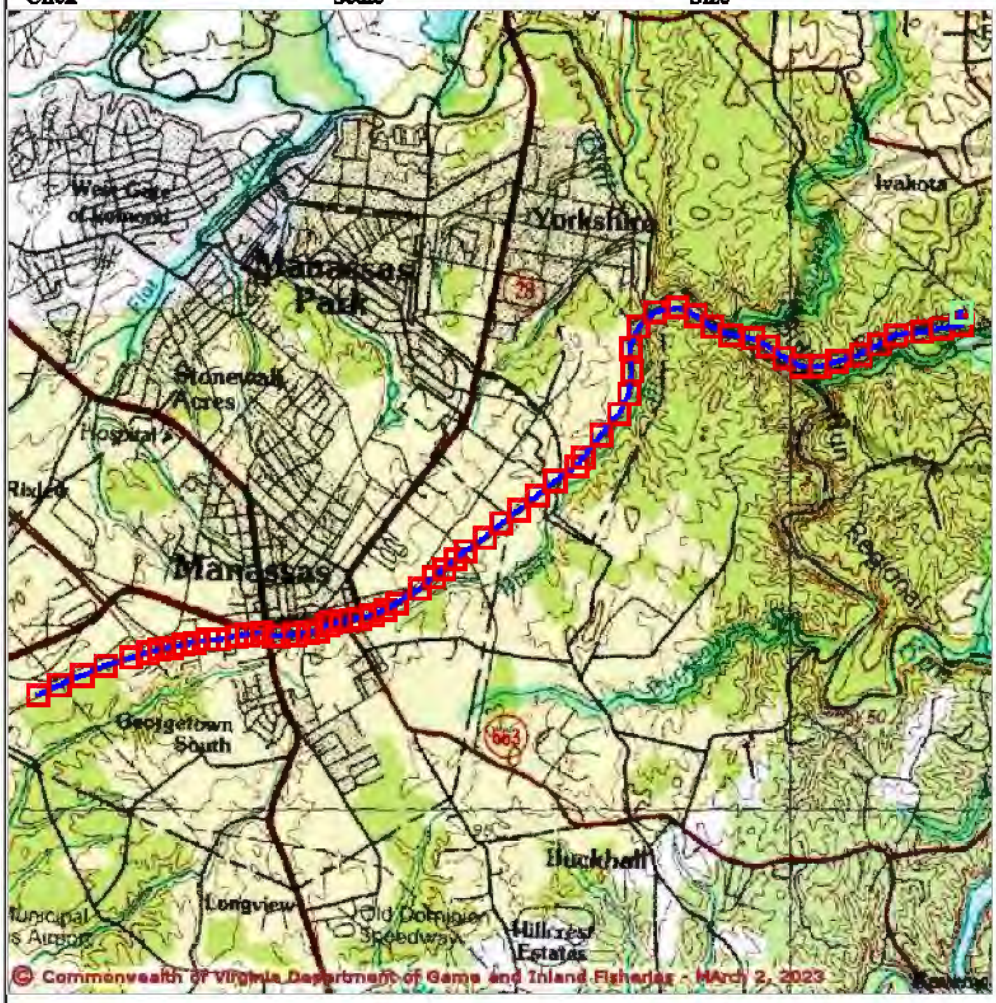
Position Rings 1 mile and 1/4 mile at the Search Point

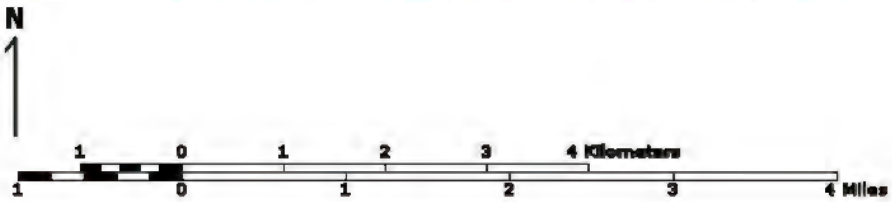
2 mile radius Search Area

Virginia Fish and Wildlife Information Service

back | Refresh Browser Page

Map Click: Pan | Map Scale: In Zoom Out | Screen Size: Small Size Big | Help





Point of Search 38,46,46.9 -77,23,51.7
Map Location 38,45,42.1 -77,26,55.7

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

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

Map projection is UTM Zone 18 NAD 1983 with left 282431 and top 4297982. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5

square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
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All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2023-03-02 14:07:51 (qa/qc March 21, 2016 12:20 - tn=1464483.1 dist=3218
I)
$poi=38.7797000 -77.3976999

4 Species Observations where Lance, yellow (060029) observed

38,46,46.9 -77,23,51.7 is the Search Point

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

Show Search Area
(•) Yes ( ) No
2 Search distance miles buffer

Display at center	Search Point is not at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, SppObs

Map Overlay Legend

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

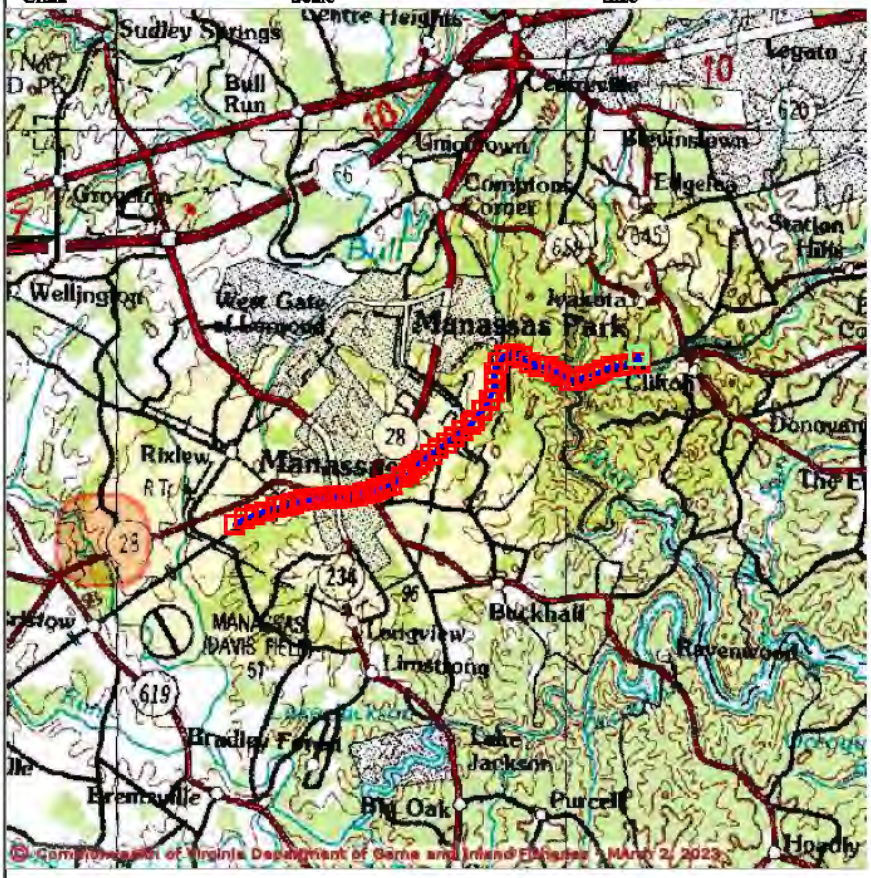
2 mile radius Search Area

Data Observation Site

Virginia Fish and Wildlife Information Service

Refresh Browser Page

Map Click Pan | Map Scale In Zoom Out | Screen Size Small Size Big | Help



Point of Search 38,46,46.9 -77,23,51.7
Map Location 38,45,42.1 -77,26,55.7

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

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

Map projection is UTM Zone 18 NAD 1983 with left 277631 and top 4302782. Pixel size is 25. .
Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 19200 meters east to west by 19200 meters north to south for a total of 368.6 square kilometers. The map display represents 63002 feet east to west by 63002 feet north to south for a total of 142.3 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
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map assembled 2023-03-02 14:06:50 (qa/qc March 21, 2016 12:20 - tn=1464483.1 dist=3218
I)
$poi=38.7797000 -77.3976999

5 Species Observations where Floater, brook (060006) observed

38,46,46.9 -77,23,51.7 is the Search Point

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

Show Search Area
(•) Yes ( ) No
2 Search distance miles buffer

Display at center	Search Point is not at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, SppObs

Map Overlay Legend

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

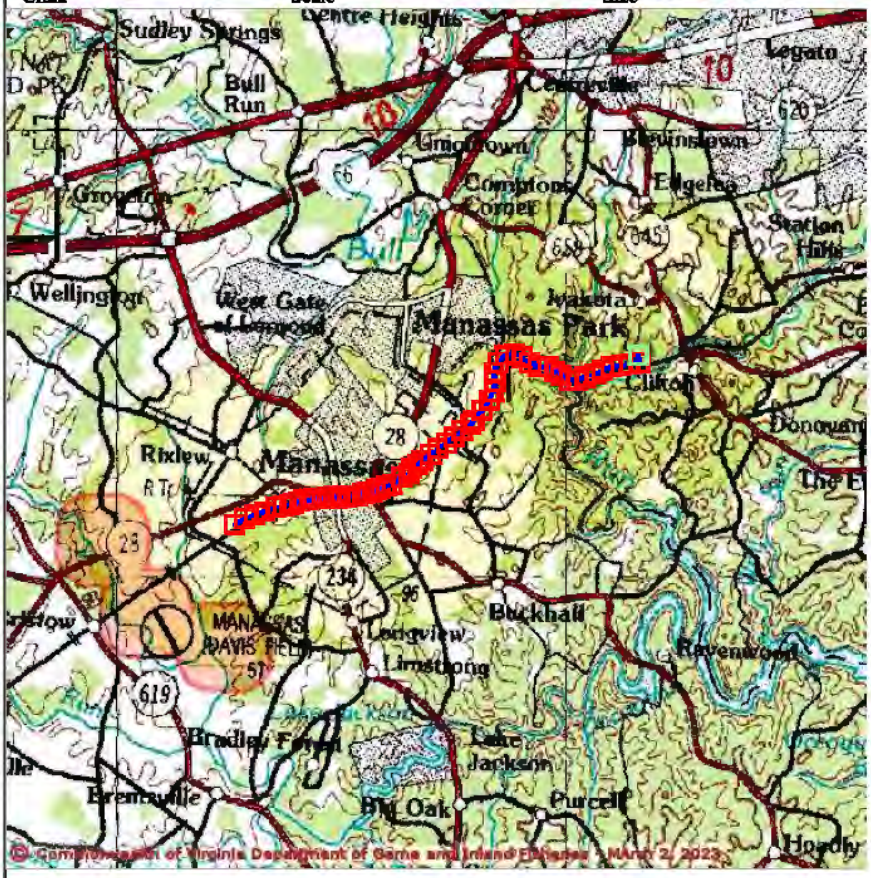
2 mile radius Search Area

Data Observation Site

Virginia Fish and Wildlife Information Service

Refresh Browser Page

Map Click Pan | Map Scale In Zoom Out | Screen Size Small Size Big | Help



Point of Search 38,46,46.9 -77,23,51.7
Map Location 38,45,42.1 -77,26,55.7

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

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

Map projection is UTM Zone 18 NAD 1983 with left 277631 and top 4302782. Pixel size is 25. . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 19200 meters east to west by 19200 meters north to south for a total of 368.6 square kilometers. The map display represents 63002 feet east to west by 63002 feet north to south for a total of 142.3 square miles.

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Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2023-03-02 14:07:27 (qa/qc March 21, 2016 12:20 - tn=1464483.1 dist=3218
I)
$poi=38.7797000 -77.3976999

Natural Heritage Resources

Your Criteria

Federal Legal Status: LE - Listed endangered,LT - Listed threatened

State Legal Status: LE - Listed endangered,LT - Listed threatened

Watershed (8 digit HUC): 02070010 - Middle Potomac-Anacostia-Occoquan

Subwatershed (12 digit HUC): PL34 - Broad Run-Rocky Branch

Search Run: 3/2/2023 14:14:11 PM

Result Summary

Total Species returned: 2

Total Communities returned: 0

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Middle Potomac-Anacostia-Occoquan								
Broad Run-Rocky Branch								
BIVALVIA (MUSSELS)								
Brook Floater	Alasmidonta varicosa	Alasmidonta varicosa	G3	S1	None	LE	13	Y
VASCULAR PLANTS								
Torrey's Mountain-mint	Pycnanthemum torreyi	Pycnanthemum torreyi	G2	S2	SOC	LT	20	Y

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an information request.

To Contribute information on locations of natural heritage resources, please fill out and submit a rare species sighting form.

Natural Heritage Resources

Your Criteria

Federal Legal Status: LE - Listed endangered,LT - Listed threatened

State Legal Status: LE - Listed endangered,LT - Listed threatened

Watershed (8 digit HUC): 02070010 - Middle Potomac-Anacostia-Occoquan

Subwatershed (12 digit HUC): PL46 - (Lower) Bull Run-Popes Head Creek

Search Run: 3/2/2023 14:25:23 PM

Result Summary

Total Species returned: 1

Total Communities returned: 0

Click scientific names below to go to NatureServe report.

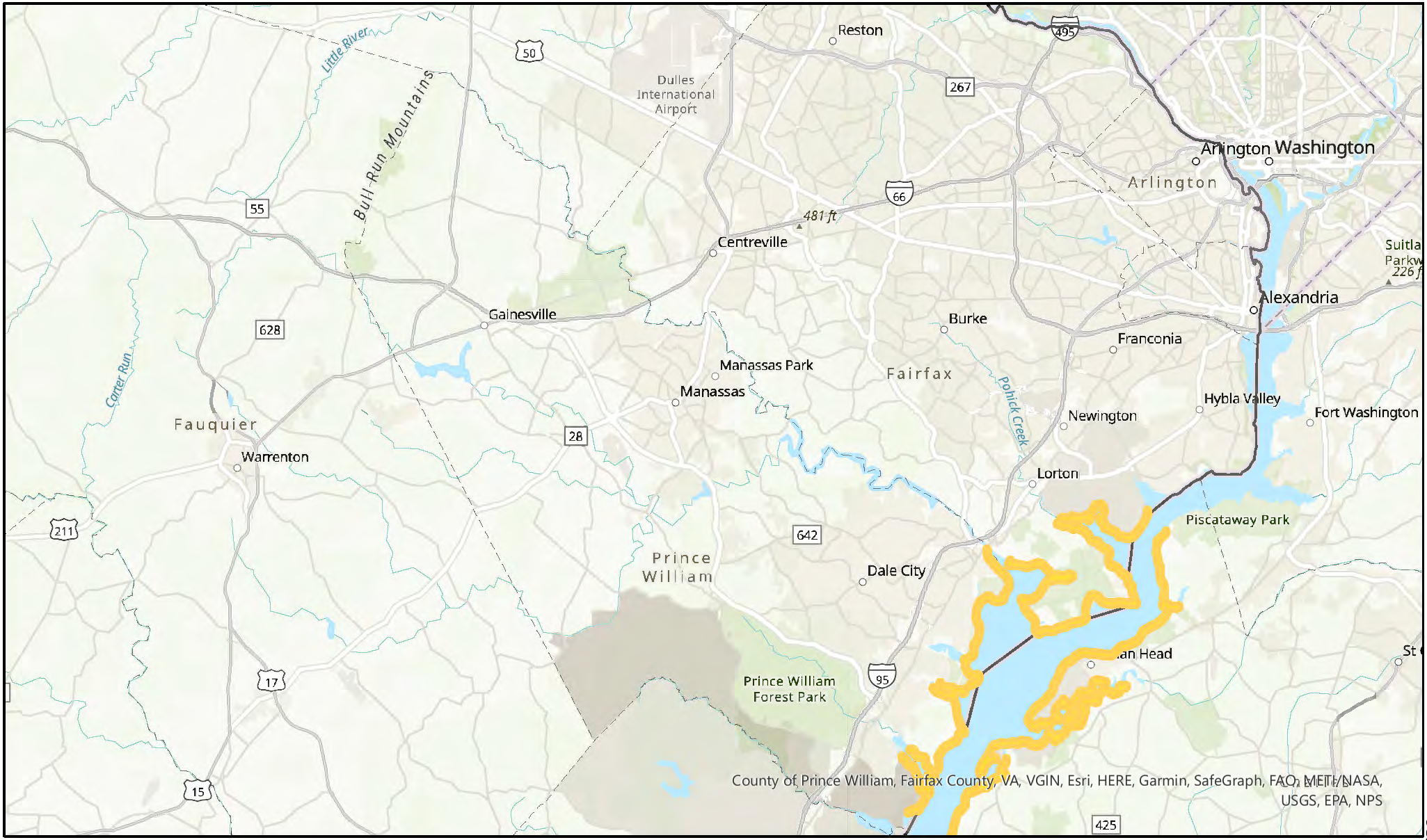
Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Middle Potomac-Anacostia-Occoquan								
(Lower) Bull Run-Popes Head Creek								
INVERTEBRATE								
Rusty-patched Bumblebee	Bombus affinis	Bombus affinis	G2	S1	LE	LE	55	Y

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an information request.

To Contribute information on locations of natural heritage resources, please fill out and submit a rare species sighting form.



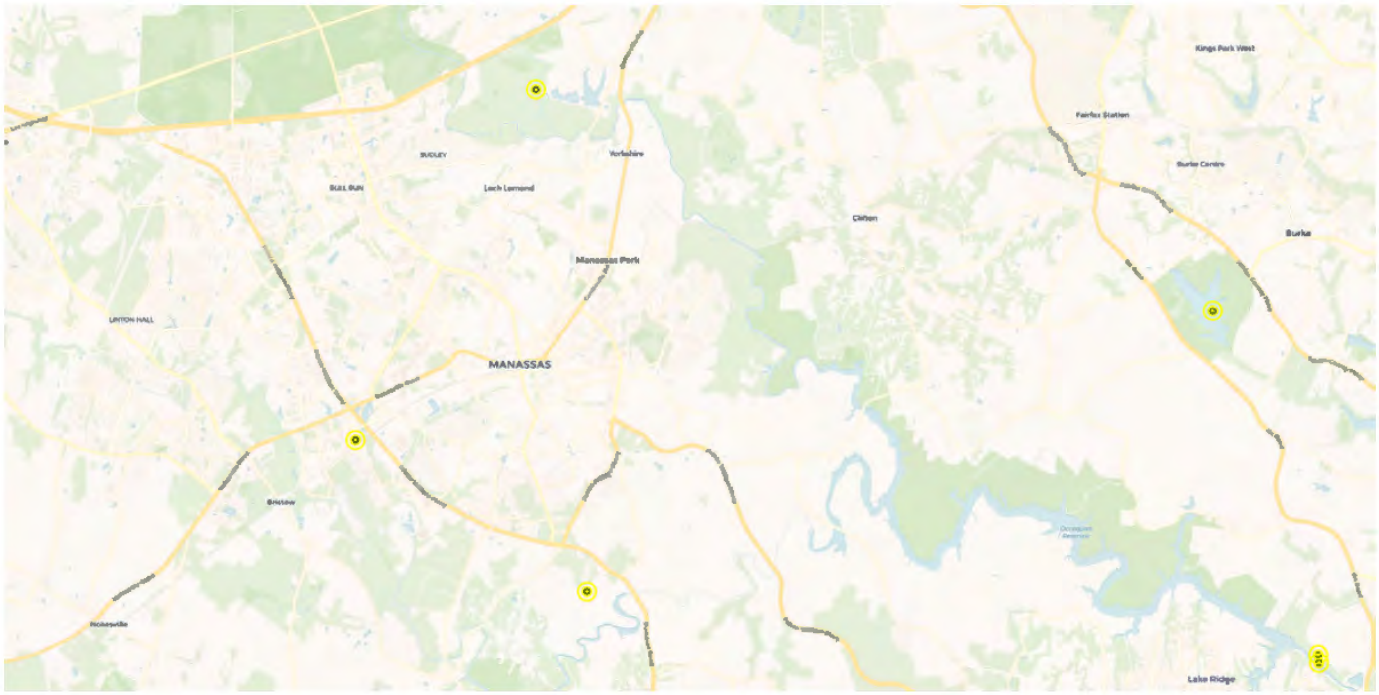
Bald Eagle Concentration Areas - Virginia

December 15 to March 15

May 15 to August 31 and December 15 to March 15

0 4 8 16 Miles

CCB Mapping Portal



Layers: VA Eagle Nest Locator, VA Eagle Nest Buffers, Eagle Roosts, Eagle Roost Polygons, Eagle Roost Buffers

Map Center [longitude, latitude]: [-77.42425918579102, 38.763921924022775]

Map Link:
https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&layer=VA+Eagle+Nest+Buffers&layer=Eagle+Roosts&layer=Eagle+Roost+Polygons&layer=Eagle+Roost+Buffers&zoom=13&lat=38.763921924022775&lng=-77.42425918579102&legend=legend_tab_59557df6-c07b-11e5-a485-0e31c9be1b51&base=Street+Map+%28OSM%2FCarto%29

Report Generated On: 03/02/2023

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

October 27, 2022

Colin Zehrer
Resource Environmental Solutions, LLC
1408 B Roseneath Road
Richmond, VA 23230

Re: PRJ103811, Line 2011 230kV Partial Rebuild Project

Dear Mr. Zehrer:

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

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

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

Due to the potential for this site to support populations of diabase plants, DCR recommends an inventory for the resources in the section of the study area pictured in the map below (Figure 1). With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

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

Please note this project spans Bull Run, which has been designated as a scenic river in the state of Virginia.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

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

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

A fee of $95.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 24th Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Amy Martin at (804-367-2211) or amy.martin@dwr.virginia.gov.

Should you have any questions or concerns, please contact me at 804-225-2429. Thank you for the opportunity to comment on this project.

Sincerely,

Tyler Meader

Tyler Meader
Natural Heritage Locality Liaison

Literature Cited

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

Figure 1.


PRJ103811, Line 2011 230kV Partial Rebuild Project-
Recommended Diabase Survey Area
Project Footprint
DCR
Virginia Department of Conservation & Recreation
0 0.075 0.15 0.3 Miles
Map created by DCR-DNH. October 2022

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

August 13, 2019

Mr. Jason E. Williams
Director Environmental Services
Dominion Energy
5000 Dominion Boulevard
Glen Allen, VA 23060

Transmitted electronically: jason.e.william@dominionenergy.com

Subject: Dominion Energy (Electric Transmission) – Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management (AS&S for ESC and SWM)

Dear Mr. Williams:

The Virginia Department of Environmental Quality ("DEQ") hereby approves the Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management for Dominion Energy (Electric Transmission) dated "May 29, 2019". This coverage is effective from August 13, 2019 to August 12, 2020.

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

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

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

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

vi: Acreage of disturbance for project;
vii: Project start and finish date; and
viii: Any variances/exceptions/waivers associated with this project.

3. Project tracking of all regulated land disturbing activities (LDA) must be submitted to the DEQ on a bi-annual basis. Project tracking records shall contain the same information as required in the two week e-notifications for each regulated LDA.
4. Erosion & Sediment Control and Stormwater Management plan review and approval must be conducted by DEQ-Certified plan reviewers and documented in writing.

To ensure an efficient information exchange and response to inquiries, the DEQ Central Office is your primary point of contact. Central Office staff will coordinate with our Regional Office staff as appropriate.

Thank you very much for your submission and continued efforts to conserve and protect Virginia's precious natural resources.

Sincerely,

Jaime B. Robb

Jaime B. Robb, Manager
Office of Stormwater Management

Cc: Amelia Boschen, *Amelia.h.boschen@dominionenergy.com*
Elizabeth Hester, *Elizabeth.l.hester@dominionenergy.com*
Stacey Ellis, *Stacey.t.ellis@dominionenergy.com*

Case Decision Information:
As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

REDACTED

REPORT >

Pre-Application Analysis of Cultural Resources for the Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

LOCATION > Prince William and Fairfax Counties, Virginia

DATE> OCTOBER 2022

PREPARED FOR >
Dominion Energy

PREPARED BY >
Dutton + Associates, LLC

PROJECT REVIEW # >

Dutton + Associates
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

SCC Pre-Application Analysis of Cultural Resources for the Line #2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Prince William and Fairfax Counties, Virginia

***PREPARED FOR*:**
DOMINION ENERGY
10900 NUCKOLS ROAD, 4TH FLOOR
GLEN ALLEN, VA 23060

***PREPARED BY*:**
DUTTON + ASSOCIATES, LLC
1115 Crowder Drive
Midlothian, Virginia 23236
804.644.8290

PRINCIPAL INVESTIGATOR:
Robert J. Taylor, Jr. M.A.

October 2022

ABSTRACT

In October 2022, Dutton + Associates, LLC (D+A) completed a Pre-Application Analysis (analysis) of cultural resources for the Line #2011 230 kV Partial Rebuild Project (Clifton to Winters Branch) in Prince William and Fairfax Counties, Virginia. The effort serves as a follow-up to the previously coordinated Pre-Application Analysis (analysis) of cultural resources for the Line #2011 Extension from Cannon Branch to Winters Branch Project (D+A 2021/ VDHR File No. 2021-4980), and therefore this effort includes the portion of the project extending from Cannon Branch to Clifton. The analysis was performed for Dominion Energy Virginia (Dominion) in support of a State Corporation Commission (SCC) application. The analysis was conducted in accordance with Virginia Department of Historic Resources' (VDHR) guidance titled Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (January 2008) and Commonwealth of Virginia State Corporation Commission Division of Public Utility Regulation Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia (August 2017).

The Line #2011 230kV Partial Rebuild Project (Clifton to Winters Branch) entails the rebuild of approximately 7.5 miles of existing 230kV transmission line and new build of approximately 1.5 mile of transmission line stretching through Prince William County, Fairfax County, and the City of Manassas, Virginia. The rebuild extends from the existing Cannon Branch Substation to the existing Clifton Substation and is being conducted in order to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards. To strengthen system reliability and provide better service, the conductor, or wire, on this length of existing transmission line must be replaced with a new, stronger material capable of carrying a higher amount of electric current, or ampacity. Because this new wire is made of different, heavier material than the existing one, the structures that support the conductor must also be replaced. The new build extends roughly 1.5 miles from the Cannon Branch Substation to the Winters Branch Substation. The new build length of the project was previously coordinated with the VDHR (File No. 2021-4980) and is therefore not included in this study.

As part of the rebuild portion of the project, extending from Cannon Branch to Clifton, Dominion proposes to replace the existing structures and rebuild the lines to current 230kV standards. The existing structures are monopoles that average 110 feet in height and include both weathering steel and galvanized finished. They will be replaced with monopole structures of similar configuration that will average 115-feet in height and all have weathering streel finish. The structures will generally be replaced on a one-to-one basis near the same locations. All permanent improvements associated with the rebuild will take place within existing right-of-way (ROW) and will not require any additional vegetative clearing.

The background research conducted as part of this analysis was consistent with VDHR guidance and designed to identify all previously recorded National Historic Landmarks (NHL) located within 1.5-miles of the proposed project or closer, all National Register of Historic Places (NRHP)-listed properties, battlefields, and historic landscapes located within 1-mile of the proposed project or closer, all historic properties considered eligible for listing in the NRHP located within 0.5-miles of the proposed project or closer, and all archaeological sites located

directly within the proposed project area. Historic properties include architectural and archaeological (terrestrial and underwater) resources, historic and cultural landscapes, battlefields, and historic districts. For each historic property within the defined tiers, a review of existing documentation and a field reconnaissance was undertaken to assess each property's significant character-defining features, as well as the character of its current setting. Following identification of historic properties, D+A assessed the potential for impacts to any identified properties as a result of the proposed project. Specific attention was given to determining whether or not construction related to the project could introduce new visual elements into the property's viewshed or directly impact the property through construction, which would either directly or indirectly alter those qualities or characteristics that qualify the historic property for listing in the NRHP.

Review of the VDHR VCRIS inventory records revealed a total of five-hundred-seventy-eight (578) previously recorded architectural resources are located within 1.5 mile of the project area. Of these, there are no (0) NHLs located within 1.5 mile of the proposed project or closer, fourteen (14) properties listed in the NRHP located within 1.0 mile or closer of the project, four (4) battlefields located within 1.0 mile or closer of the project, no (0) historic landscapes within 1.0 mile or closer of the project, and four (4) properties that have been determined eligible or potentially eligible for listing in the NRHP within 0.5 mile or closer of the project. Of these resources, one (1) of the NRHP-listed properties, three (3 battlefields, and one (1) NRHP-eligible property are directly crossed by the project alignment. VCRIS also revealed that portions, but not all, of the project area have been subject to previous Phase I survey and eleven (11) previously recorded archaeological site is located directly within or adjacent to the project ROW (within 100 feet of the centerline). One of these sites has been determined not eligible for listing in the NRHP and the rest have not been formally evaluated for listing in the NRHP by the VDHR.

Inspection of and from these resources found that most are located within the vicinity of the City of Manassas and the associated urban and suburban areas. As such, the setting of most resources already includes a wide variety of nonhistoric features including dense development and modern infrastructure. The existing project transmission line and multiple structures are currently visible from many of the resources, particularly those in close proximity to or crossed by the project. Meanwhile, the line and structures tend to be partially to completely screened from resources set further away due to the development and vegetation patterns in the area. Because the line is to rebuilt with replacement structures generally in the same locations and the same or only minimal increase in height, there will not be a substantial, or in most cases perceptible change in visibility as a result of the project. ***It is therefore D+A's opinion that based upon the definition of impacts above, the proposed Line #2011 230 kV Partial Rebuild Project (Clifton to Winters Branch) – Rebuild Portion, will have no more than a minimal impact on any architectural resources that are designated an NHL, listed in the NRHP, or determined eligible or potentially eligible for listing.***

Potential impacts summary for architectural resources.

VDHR #	*Resource Name, Address*	*NRHP-Status*	*Distance from Project*	*Recommended Impact*
029-0410	*Union Hills Historic District*	*NRHP-Eligible*	*Directly Crossed*	*Minimal*
029-5006	*Battery Hill Redoubt, Fort "A"*	*NRHP-Listed*	*~0.53 Mile*	*No Impact*

VDHR #	Resource Name, Address	NRHP-Status	Distance from Project	Recommended Impact
029-5117	Blackburn's Ford Battlefield	NRHP-Eligible	~0.57 Mile	No Impact
076-0016	Signal Hill	NRHP-Listed	~0.74 Mile	Minimal
076-0061	Bennett School	NRHP-Eligible	~0.17	Minimal
076-0238	Orange and Alexandria Railroad Bridge Piers	NRHP-Listed	Directly Crossed	Minimal
076-5036	Bristoe Station Battlefield	Potentially NRHP-Eligible	Directly Crossed	Minimal
076-5080	Prince William County Courthouse	NRHP-Listed	~0.16 Mile	Minimal
076-5190	Second Battle of Manassas	Potentially NRHP-Eligible	Directly Crossed	Minimal
076-5335	First Battle of Manassas	Potentially NRHP-Eligible	Directly Crossed	Minimal
152-0001	Conner House	NRHP-Listed	~0.17 Mile	Minimal
152-5001	Louisiana Brigade Winter Camp	NRHP-Listed	~0.75 Mile	No Impact
155-0001	Liberia	NRHP-Listed	~0.74 Mile	No Impact
155-0010	Jennie Dean Memorial Site	NRHP-Listed	~0.06 Mile	Minimal
155-0021	Annaburg	NRHP-Listed	~0.28 Mile	Minimal
155-0107	Pickeral House	NRHP-Eligible	~0.13 Mile	No Impact
155-0141	Old Manassas Water Tower	NRHP-Listed	~0.16 Mile	Minimal
155-0161	Manassas Historic District	NRHP-Listed	Directly Crossed	Minimal
155-0162	Manassas Cemetery and Confederate Cemetery in Manassas	Potentially NRHP-Eligible		Minimal
155-5002	Mayfield Fortification	NRHP-Listed	~0.17 Mile	Minimal
155-5020	Cannon Branch Fort	NRHP-Listed	~0.9 Mile	No Impact
194-0003	Clifton Historic District	NRHP-Listed	~0.47 Mile	No Impact

With regards to archaeology, discrete portions of the project ROW have been subject to survey, although other portions of have not been previously surveyed. As a result of previous survey, a total of eleven (11) previously recorded sites are located directly within or adjacent to the project ROW (within 100 feet of the centerline). Of these, one (1) has been determined not eligible and the rest have not been formally evaluated. No archaeological field work was conducted as part of this effort and the previously recorded site within or adjacent to the project ROW was not visited or assessed at this time. ***It is therefore D+A's opinion that unsurveyed portions of the project ROW be surveyed and identified sites be assessed for impacts.***

Summary of potential impacts summary for archaeological resources.

VDHR#/ Description	NRHP Status	Proximity to Project Area	Impacts
44FX0407/ prehistoric unknown	Not Evaluated	Directly Crossed	TBD
44FX0953/ early-woodland camp, 19th century earthworks	Not Evaluated	Directly Crossed	TBD
44FX1737/ middle-archaic camp	Not Evaluated	Directly Crossed	TBD
44FX1852/ prehistoric unknown, 19th century road trace	Not Evaluated	Adjacent	TBD
44FX1885/ 19th century gold mine and road	Not Evaluated	Directly Crossed	TBD
44FX1886/ historic unknown	Not Evaluated	Adjacent	TBD
44FX1888/ 19th century bridge	Not Evaluated	Adjacent	TBD

VDHR#/ Description	*NRHP Status*	*Proximity to Project Area*	*Impacts*
44FX1892/ historic unknown	*Not Evaluated*	*Directly Crossed*	*TBD*
44FX2324/ 19th century other	*Not Evaluated*	*Directly Crossed*	*TBD*
44PW0512/ Civil War earthworks and 20th century school	*Not Evaluated*	*Adjacent*	*TBD*
44PW1087/ temporary camp	*DHR Staff: Not Eligible*	*Directly Crossed*	*TBD*

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1. INTRODUCTION

In October 2022, Dutton + Associates, LLC (D+A) completed a Pre-Application Analysis (analysis) of cultural resources for the Line #2011 230 kV Partial Rebuild Project (Clifton to Winters Branch) in Prince William and Fairfax Counties, Virginia (Figure 1-1). The effort serves as a follow-up to the previously coordinated *Pre-Application Analysis (analysis) of cultural resources for the Line #2011 Extension from Cannon Branch to Winters Branch Project* (D+A 2021/ VDHR File No. 2021-4980), and therefore this effort includes the portion of the project extending from Cannon Branch to Clifton. The analysis was performed for Dominion Energy Virginia (Dominion) in support of a State Corporation Commission (SCC) application. The analysis was conducted in accordance with Virginia Department of Historic Resources' (VDHR) guidance titled *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (January 2008) and Commonwealth of Virginia State Corporation Commission Division of Public Utility Regulation *Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia* (August 2017).

This analysis was performed at a level that meets the purpose and intent of VDHR and the SCC's guidance. It provides information on the presence of previously recorded National Historic Landmark (NHL) properties located within a 1.5-mile buffer area established around the project area, properties listed on the National Register of Historic Places (NRHP), battlefields, and historic landscapes located within a 1-mile buffer around the project area, and properties previously determined eligible for listing in the NRHP located within a 0.5-mile buffer area around the project area, and previously identified archaeological resources directly within the project area. This analysis will not satisfy Section 106 identification and evaluation requirements in the event federal permits or licenses are needed; however, it can be used as a planning document to assist in making decisions under Section 106 as to whether further cultural resource identification efforts may be warranted.

This report contains a research design which describes the scope and methodology of the analysis, discussion of previously identified historic properties, and an assessment of potential impacts. D+A Senior Architectural Historian Robert J. Taylor, Jr. M.A. served as Principal Investigator and oversaw the general course of the project and supervised all aspects of the work. Copies of all notes, maps, correspondence, and historical research materials are on file at the D+A main office in Midlothian, Virginia.

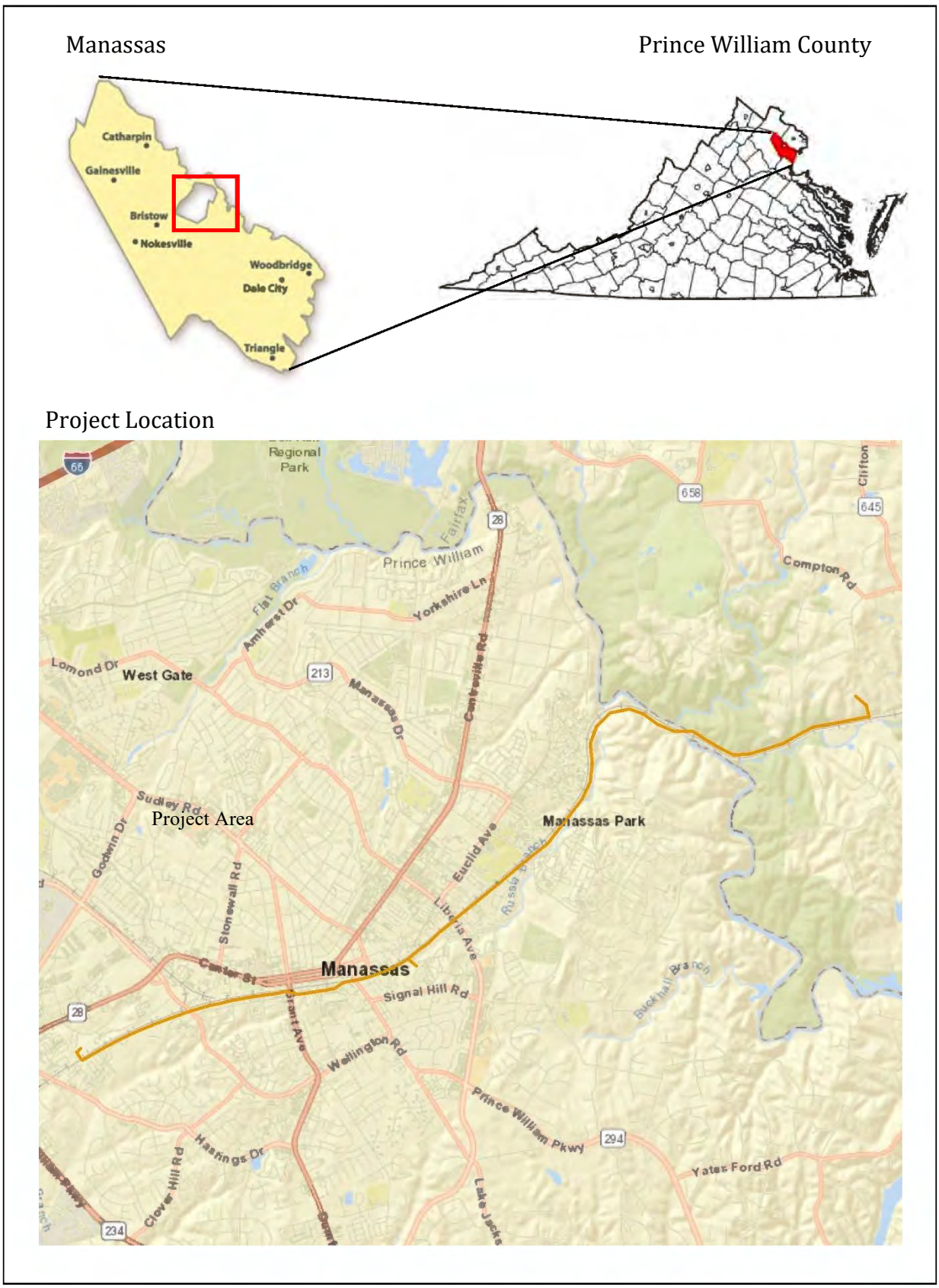

Figure 1-1: Project Area general location

2. PROJECT DESCRIPTION

The Line #2011 230kV Partial Rebuild Project (Clifton to Winters Branch) entails the rebuild of approximately 7.5 miles of existing 230kV transmission line and new build of approximately 1.5 mile of transmission line stretching through Prince William County, Fairfax County, and the City of Manassas, Virginia (Figure 2-1). The rebuild extends from the existing Cannon Branch Substation to the existing Clifton Substation and is being conducted in order to maintain reliable service for the overall growth in the area and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards. To strengthen system reliability and provide better service, the conductor, or wire, on this length of existing transmission line must be replaced with a new, stronger material capable of carrying a higher amount of electric current, or ampacity. Because this new wire is made of different, heavier material than the existing one, the structures that support the conductor must also be replaced. The new build extends roughly 1.5 miles from the Cannon Branch Substation to the Winters Branch Substation. The new build length of the project was previously coordinated with the VDHR (File No. 2021-4980) and is therefore not included in this study.

As part of the rebuild portion of the project, extending from Cannon Branch to Clifton, Dominion proposes to replace the existing structures and rebuild the lines to current 230kV standards. The existing structures are monopoles that average 110 feet in height and include both weathering steel and galvanized finished. They will be replaced with monopole structures of similar configuration that will average 115-feet in height and all have weathering streel finish (Table 2-1 and Figure 2-2). The structures will generally be replaced on a one-to-one basis near the same locations. All permanent improvements associated with the rebuild will take place within existing right-of-way (ROW) and will not require any additional vegetative clearing (Figures 2-3).

Table 2-1: Existing and proposed structure information.

Structure Number	Existing Height (ft)	Proposed Height (ft)
Str 2011-02	120	120
Str 2011-03	120	120
Str 2011-04	115	120
Str 2011-05	115	120
Str 2011-06	105	110
Str 2011-07	100	105
Str 2011-08	80	85
Str 2011-09	95	100
Str 2011-10	120	125
Str 2011-11	115	120
Str 2011-12	100	100
Str 2011-13	120	120
Str 2011-14	90	95
Str 2011-15	125	125
Str 2011-16	95	95
Str 2011-17	110	110

Structure Number	Existing Height (ft)	Proposed Height (ft)
Str 2011-18	95	105
Str 2011-19	120	125
Str 2011-20	120	120
Str 2011-21	90	90
Str 2011-22	95	95
Str 2011-23	120	120
Str 2011-24	125	125
Str 2011-25	120.333	130
Str 2011-26	120	140
Str 2011-27	130	130
Str 2011-28	130	140
Str 2011-29	135	140
Str 2011-30	110	110
Str 2011-31	115	115
Str 2011-32	130	130
Str 2011-33	130	130
Str 2011-34	110	125
Str 2011-35	115.167	115
Str 2011-36	115	115
Str 2011-37	120.667	120
Str 2011-38	107	120
Str 2011-39	116	115
Str 2011-40	132	125
Str 2011-41	111	115
Str 2011-42	114	115
Str 2011-43	95	105
Str 2011-44	99	125
Str 2011-45	95	105
Str 2011-46	97	105
Str 2011-46A (new)	N/A	100
Str 2011-47	80	115
Str 2011-48	100	115
Str 2011-49	95	95
Str 2011-50	65	80
Str 2011-51	60	80
Str 2011-53	105	105
Str 2011-54	120	120
Str 2011-55	120	125
Str 2011-56	129	120
Str 2011-57	115	125
Str 2011-58	115	120

Structure Number	Existing Height (ft)	Proposed Height (ft)
Str 2011-59	115	120
Str 2011-60	115	120
Str 2011-61	115	115
Str 2011-62	115	120
Str 2011-63	110	130
Str 2011-64	110	115
Str 2011-65	115	120
Str 2011-66	115	115
Str 2011-67	120	115
Min	**60**	**80**
Max	**132**	**140**
Average	**110**	**115**

Figure 2-1: Project Alignment General Location. Source: Dominion Energy

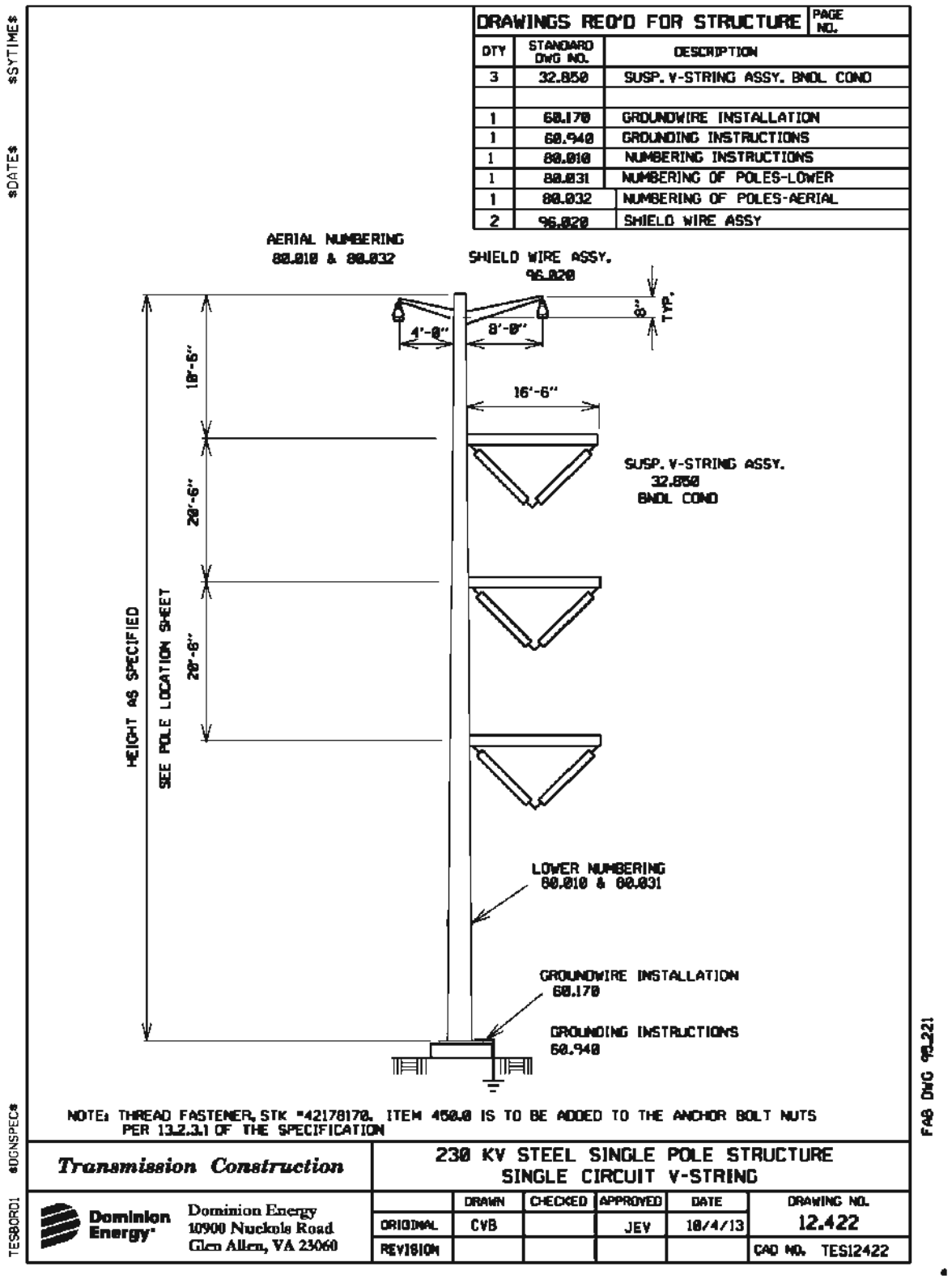

Figure 2-2: Detail of typical existing and proposed structures within ROW. Source: Dominion Energy Virginia

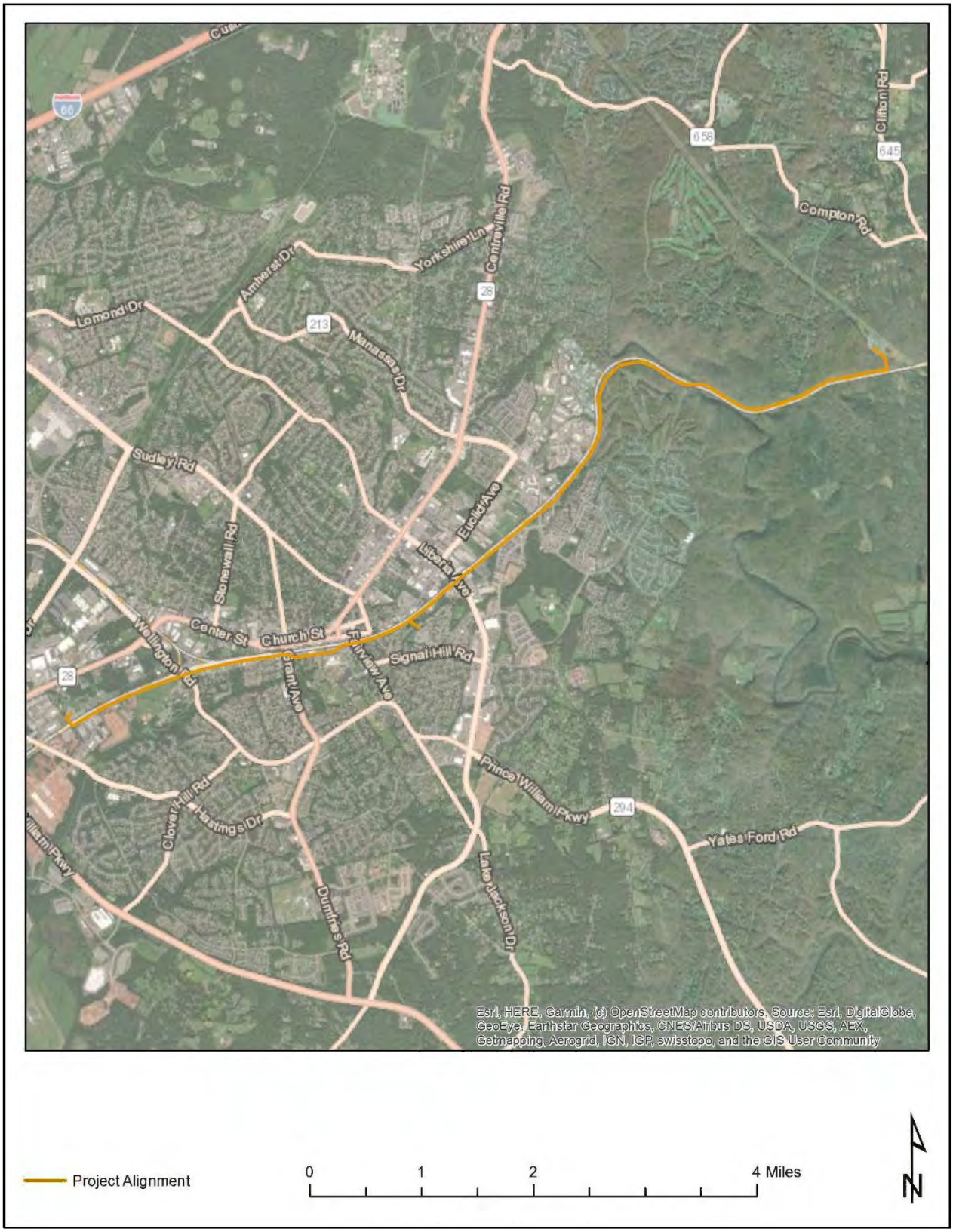

Figure 2-3: Line #2011 230kV Project, Cannon Branch-Clifton Rebuild Portion Alignment.

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3. RESEARCH DESIGN

The intent of this effort was to identify all known historic properties within the vicinity of the proposed project area in order to assess them for potential impacts brought about by the project. Historic properties include architectural and archaeological (terrestrial and underwater) resources, historic and cultural landscapes, battlefields, and historic districts. For each previously recorded historic property, an examination of property documentation, current aerial photography, and a field reconnaissance was undertaken to assess each property's integrity of feeling, setting, and association, and to provide photo documentation of the property including views toward the proposed project. The D+A personnel who directed and conducted this survey meet the professional qualification standards of the Department of the Interior (48 FR 44738-9).

ARCHIVAL RESEARCH

In September 2022, D+A conducted archival research with the goal of identifying all previously recorded historic properties and any additional historic property locations referred to in historic documents and other archives, as well as consultation with local informants and other professionals with intimate knowledge of the project area as appropriate. Background research was conducted at the VDHR and on the internet and included the following sources:

- VDHR Virginia Cultural Resource Information System (VCRIS) site files; and
- National Park Service (NPS), American Battlefield Protection Program (ABPP), maps and related documentation.

Data collection was performed according to VDHR guidance in *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (January 2008) and was organized in a multi-tier approach. As such, the effort was designed to identify all previously recorded NHL's located within 1.5-miles of the proposed project area, all historic properties listed in the NRHP, battlefields, and historic landscapes located within 1-mile of the project area, all historic properties previously determined eligible for listing in the NRHP located within 0.5-mile of the project area, and all properties located directly within the project area.

FIELD RECONNAISSANCE

Field reconnaissance included visual inspection of those previously recorded historic properties identified within the defined study tiers. Visual inspection included digital photo documentation of each property's existing conditions including its setting and views toward the proposed project. Photographs were taken of primary resource elevations, general setting, and existing viewsheds. All photographs were taken from public right-of-way or where property access was granted. No subsurface archaeological testing was conducted as part of this effort.

ASSESSMENT OF POTENTIAL IMPACTS

Following identification and field inspection of historic properties, D+A assessed each resource for potential impacts brought about by the proposed project. Assessment of impacts was conducted

through a combination of field inspection, digital photography, review of topography and aerial photography. The overall increase in structure height between the existing and proposed does not meet the threshold of a "substantial increase" as outlined by the VDHR in *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (January 2008), however, photo simulation was conducted, from resources and vantage points where the change in structure design may result in a change in visibility.

When assessing impacts, D+A considered those qualities and characteristics that qualify the property for listing and whether the project has the potential to alter or diminish the integrity of the property and its associated significance. Specific attention was given to determining whether or not the proposed project would introduce new visual elements into a property's viewshed, which would either directly or indirectly alter those qualities or characteristics that qualify the historic property for listing in the NRHP. Identified impacts were characterized as severe, moderate, minimal, or none in accordance with the following guidance:

- **None** – Project is not visible from the property
- **Minimal** – Occur within viewsheds that have existing transmission lines, locations where there will only be a minor change in tower height, and/or views that have been partially obstructed by intervening topography and vegetation.
- **Moderate** – Include viewsheds with expansive views of the transmission line, more dramatic changes in the line and tower height, and/or an overall increase in the visibility of the route from the historic properties.
- **Severe** – Occur within viewsheds that do not have existing transmission lines and where the views are primarily unobstructed, locations where there will be a dramatic increase in tower visibility due to the close proximity of the route to historic properties, and viewsheds where the visual introduction of the transmission line is a significant change in the setting of the historic properties.

REPORT PREPARATION

The results of the archival resource, field inspection, and analysis were synthesized and summarized in a summary report accompanied by maps, illustrations, and photographs as appropriate. All research material and documentation generated by this project is on file at D+A's office in Midlothian, Virginia.

4. ARCHIVES SEARCH

This section includes a summary of efforts to identify previously known and recorded cultural resources within the tiered project buffers. It includes lists, maps, and descriptive data on all previously conducted cultural resource surveys, and previously recorded architectural resources and archaeological sites according to the VDHR archives and VCRIS database.

PREVIOUSLY SURVEYED AREAS

VDHR and VCRIS records indicate that there have been thirty-eight (38) prior Phase I cultural resource surveys within 1-mile of the project area, including six (6) of which that overlap with or include portions of the project alignment. These surveys are at a minimum archaeological in nature, although some include architectural resources as well. The six surveys that include portions of the project area were conducted as part of a linear transportation projects, utility projects, development projects, and a targeted site study. As a result of these surveys, several discrete portions of the project ROW have been subject to Phase I archaeological identification, however, other portions remain unsurveyed. The six previously conducted cultural resource surveys that includes portions of the project alignment are listed in Table 4-1 and are illustrated in Figure 4-1.

Table 4-1: Previously conducted cultural resource surveys that include the project alignment. Source: VDHR.

VDHR Survey #	Title	Author	Date
PW-012	The Phase I Survey of the Proposed Park Development in the Signal Hill and Union Mill Tracts City of Manassas Park, Prince William County, Virginia	Thomas E. McGarry and Associates	1983
PW-043	The Search for Tudor Hall: A Phase I & Phase II Archaeological Survey. Manassas, Virginia	Fairfax County Archaeology Survey	1989
PW-066	A Phase I Cultural Resources Survey of the Proposed Route 776 Widening, City of Manassas and Prince William County, Virginia	(College of) William and Mary Center for Archaeological Research	1992
PW-140	Phase I Archaeological Survey and Phase II Archaeological Testing of Sites 44PW1087 and 44PW1088 at the Manassas Park Parking Facility	Parsons Engineering Science (Parsons/Parson Management Consultants)	2000
PW-415	Phase I Archaeological and Architectural Survey of the Proposed Cannon Branch to Clover Hill 230kV Transmission Line, Prince William County, Virginia	Dutton & Associates	2012
PW-552	Addendum Phase IB Cultural Resources Survey of the Virginia Railway Express (VRE) Broad Run Expansion Project, Prince William County, Virginia	Dovetail Cultural Resource Group, LLC	2018

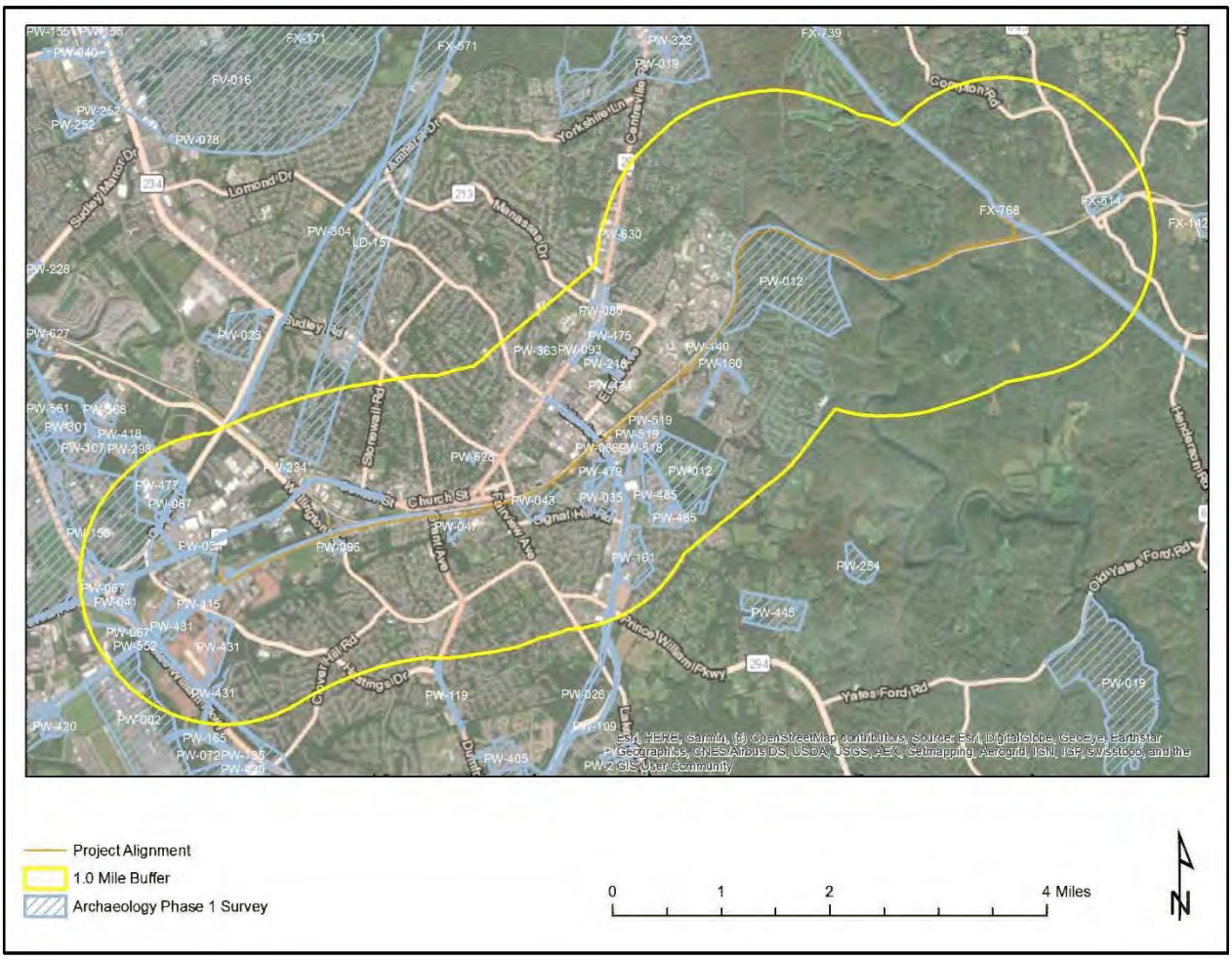

Figure 4-1: Previously conducted surveys within 1-mile of the project area. Source: VCRIS

ARCHAEOLOGICAL SITES

Review of the VDHR VCRIS records reveals there are one-hundred-eighty-two (182) previously recorded archaeological sites within one mile of the project area. These include prehistoric quarries, lithic scatters, and camps; as well as historic domestic sites, farmsteads, industrial sites, transportation related sites, earthworks, and cemeteries. Of these, four (4) have been formally listed in the NRHP, four (4) have been determined eligible or potentially eligible for listing in the NRHP, seven (7) have been determined not eligible for listing, and the remaining sites have not been formally evaluated. Eleven (11) of these sites are located directly within or adjacent to the project ROW (within 100 feet of the centerline). Of these, one (1) has been determined not eligible for listing in the NRHP and the rest have not been formally evaluated.

Table 4-2 lists the previously recorded archaeological resources within one-mile of the project area. Figure 4-2 illustrates the locations of the previously recorded sites within one mile of the project study area and Figure 4-3 details the location of the site within or adjacent to the project ROW.

Table 4-2: Previously recorded archaeological resources within one mile of the project area. Bold font denotes resources is listed or eligible for the NRHP. Orange highlight denotes site is located within or crossed by the project ROW.

VDHR #	Type	Temporal Association	NRHP Status
44FX0129	Quarry, steatite	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 4th quarter (1875 - 1899), 20th Century: 1st half (1900 - 1949)	Not Evaluated
44FX0195	Camp, base, Lithic workshop	Woodland (1200 B.C. - 1606 A.D.)	Not Evaluated
44FX0262	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX0340	Dwelling, single, Mill, Post office, Railroad	18th Century: 2nd half (1750 - 1799), 19th Century (1800 - 1899)	Not Evaluated
44FX0407	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX0506	Fort	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX0529	Camp, Earthworks	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX0529	Camp, Earthworks	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX0953	Camp, Earthworks, Military base/facility, Military camp	Early Woodland (1200 B.C. - 299 A.D.), 19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX1234	Cemetery	19th Century: 2nd half (1850 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44FX1443	Quarry, steatite	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX1444	Military camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX1445	Earthworks, Military camp	No data	Not Evaluated
44FX1446	Military camp, Quarry, steatite	19th Century: 2nd half (1850 - 1899), 20th Century: 1st quarter (1900 - 1924)	Not Evaluated
44FX1447	Dwelling, single	19th Century: 2nd half (1850 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44FX1448	Camp, Earthworks, Military camp	Antebellum Period (1830 - 1860), Civil War (1861 - 1865)	Not Evaluated
44FX1449	Camp, temporary, Earthworks, Quarry	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 2nd half (1850 - 1899), 20th Century (1900 - 1999), 20th Century: 1st quarter (1900 - 1924)	Not Evaluated
44FX1450	Farmstead	20th Century (1900 - 1999)	Not Evaluated
44FX1452	Dwelling, single	19th Century: 4th quarter (1875 - 1899), 20th Century: 1st quarter (1900 - 1924)	Not Evaluated
44FX1453	Dwelling, single	No data	Not Evaluated
44FX1454	Grave/burial	Reconstruction and Growth (1866 - 1916)	Not Evaluated
44FX1455	Barn	20th Century: 1st quarter (1900 - 1924)	Not Evaluated
44FX1456	No Data	No data	Not Evaluated
44FX1457	Cemetery, Farmstead	19th Century (1800 - 1899), 19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX1458	Dwelling, single	20th Century (1900 - 1999)	Not Evaluated
44FX1733	Dwelling, single	19th Century (1800 - 1899)	Not Evaluated
44FX1734	Camp, temporary	Pre-Contact	Not Evaluated

VDHR #	Type	Temporal Association	NRHP Status
44FX1735	Other	19th Century (1800 - 1899)	Not Evaluated
44FX1736	Camp, temporary	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX1737	Camp, temporary	Middle Archaic (6500 - 3001 B.C.)	Not Evaluated
44FX1843	Lithic quarry	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX1844	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX1849	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX1850	Lithic quarry	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX1851	Camp	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 2nd/3rd quarter (1825 - 1874)	Not Evaluated
44FX1852	Road	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 4th quarter (1875 - 1899)	Not Evaluated
44FX1853	No Data	Historic/Unknown	Not Evaluated
44FX1854	No Data	Historic/Unknown, Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX1855	Military base/facility	Historic/Unknown, Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century (1800 - 1899)	Not Evaluated
44FX1874	Other	Historic/Unknown	Not Evaluated
44FX1875	Trash scatter	No data	Not Evaluated
44FX1877	Other	Indeterminate	Not Evaluated
44FX1878	Quarry, steatite	Historic/Unknown, Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FX1879	Other	20th Century (1900 - 1999)	Not Evaluated
44FX1880	Other	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX1881	Cemetery	Historic/Unknown	Not Evaluated
44FX1882	Other	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX1883	Mill	No data	Not Evaluated
44FX1884	Other	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX1885	Mine, gold, Road	19th Century: 3rd quarter (1850 - 1874), 20th Century: 2nd quarter (1925 - 1949)	Not Evaluated
44FX1886	Other	Historic/Unknown	Not Evaluated
44FX1887	Other	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX1888	Bridge	19th Century: 2nd half (1850 - 1899), 20th Century: 1st quarter (1900 - 1924)	Not Evaluated
44FX1889	Farmstead	19th Century: 2nd half (1850 - 1899), 20th Century: 1st half (1900 - 1949)	Not Evaluated
44FX1890	Farmstead	19th Century: 2nd half (1850 - 1899)	Not Evaluated
44FX1891	Dwelling, single, Other	19th Century: 3rd quarter (1850 - 1874), 19th Century: 4th quarter (1875 - 1899)	Not Evaluated
44FX1892	No Data	Historic/Unknown	Not Evaluated
44FX1893	Railroad bed	19th Century: 2nd half (1850 - 1899), 20th Century: 1st quarter (1900 - 1924)	Not Evaluated
44FX1894	Earthworks	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX1967	Cemetery	19th Century: 2nd half (1850 - 1899)	Not Evaluated
44FX1968	Cemetery	Historic/Unknown	Not Evaluated
44FX1969	Quarry, steatite	Historic/Unknown	Not Evaluated
44FX1970	No Data	Historic/Unknown	Not Evaluated
44FX2307	Camp	Paleo-Indian (15000 - 8501 B.C.), Middle Archaic (6500 - 3001 B.C.), Late Woodland (1000 - 1606)	Not Evaluated
44FX2313	Other	20th Century: 2nd/3rd quarter (1925 - 1974)	Not Evaluated

VDHR #	Type	Temporal Association	NRHP Status
44FX2314	Other	20th Century: 1st quarter (1900 - 1924), 20th Century: 2nd quarter (1925 - 1949)	Not Evaluated
44FX2324	Other	19th Century: 2nd/3rd quarter (1825 - 1874), 19th Century: 4th quarter (1875 - 1899)	Not Evaluated
44FX2338	Camp	19th Century (1800 - 1899)	Not Evaluated
44FX2339	Cemetery	Historic/Unknown	Not Evaluated
44FX2340	Camp, Railroad	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2709	Military camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2710	Military camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2711	Military camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2712	Earthworks	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2713	Road	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2714	Military camp, Road	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2715	Military camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2718	Earthworks	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2720	Road	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2722	Military camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2752	Road	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2758	Military base/facility	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2759	Other	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX2763	Camp	Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)	Not Evaluated
44FX2772	Dwelling, single	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44FX3685	Cemetery	19th Century: 2nd/3rd quarter (1825 - 1874)	Not Evaluated
44PW0081	Farmstead	18th Century: 4th quarter (1775 - 1799), 19th Century (1800 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW0138	**Earthworks**	**19th Century: 3rd quarter (1850 - 1874)**	**NRHP Listing, VLR Listing**
44PW0139	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0140	Camp, Camp, temporary	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW0141	Other	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW0142	Camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW0143	Camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW0226	**Earthworks**	**Civil War (1861 - 1865)**	**NRHP Listing, VLR Listing**
44PW0227	**Earthworks**	**19th Century: 3rd quarter (1850 - 1874)**	**NRHP Listing, VLR Listing**
44PW0437	Other	Middle Archaic Period (6500 - 3001 B.C.)	Not Evaluated
44PW0438	Cemetery, Dwelling, single, Outbuilding, Well	Colony to Nation (1751 - 1789), Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945)	Not Evaluated
44PW0492	No Data	Historic/Unknown, Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0493	No Data	Historic/Unknown, Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0494	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated

VDHR #	Type	Temporal Association	NRHP Status
44PW0495	Road	18th Century: 2nd half (1750 - 1799), 19th Century (1800 - 1899), 20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW0505	**Military camp, School**	**19th Century: 2nd half (1850 - 1899), 19th Century: 3rd quarter (1850 - 1874), 20th Century: 1st half (1900 - 1949)**	**NRHP Listing, VLR Listing**
44PW0506	Barn	20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW0507	Cemetery, Dwelling, single	19th Century (1800 - 1899)	Not Evaluated
44PW0512	Earthworks, School	Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1988), Post Cold War (1989 - Present)	Not Evaluated
44PW0513	No Data	19th Century: 2nd half (1850 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW0514	Earthworks	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW0515	Camp, temporary, Military camp	Late Archaic (3000 - 1201 B.C.), 19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW0516	Camp, temporary	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0517	Other	19th Century (1800 - 1899)	Not Evaluated
44PW0518	Camp, temporary, Military camp	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW0519	Military camp	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW0520	Camp	Civil War (1861 - 1865)	Not Evaluated
44PW0521	No Data	19th Century: 2nd/3rd quarter (1825 - 1874)	Not Evaluated
44PW0522	Cemetery	Historic/Unknown	Not Evaluated
44PW0523	Dwelling, single	19th Century (1800 - 1899)	Not Evaluated
44PW0524	Camp, temporary	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0526	Other	No data	Not Evaluated
44PW0527	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0528	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0529	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0530	Other	Historic/Unknown, Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0531	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0532	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0533	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0534	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0535	Barn	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945)	Not Evaluated
44PW0536	Dwelling, single	19th Century: 2nd half (1850 - 1899), 20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW0537	Other	19th Century: 2nd/3rd quarter (1825 - 1874)	Not Evaluated
44PW0538	Other	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0539	Earthworks	Civil War (1861 - 1865)	Not Evaluated
44PW0540	Earthworks	Civil War (1861 - 1865)	Not Evaluated
44PW0856	Camp	19th Century (1800 - 1899)	Not Evaluated
44PW0857	Dwelling, single	19th Century: 4th quarter (1875 - 1899)	Not Evaluated
44PW0858	Lithic workshop	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0859	Lithic workshop, Quarry	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated

VDHR #	Type	Temporal Association	NRHP Status
44PW0860	Camp	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0861	Camp	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW0862	Camp	No data	Not Evaluated
44PW0863	Earthworks	19th Century (1800 - 1899)	Not Evaluated
44PW1087	Camp, temporary	No data	DHR Staff: Not Eligible
44PW1088	Quarry	Indeterminate	DHR Staff: Not Eligible
44PW1092	Trash scatter	20th Century: 2nd/3rd quarter (1925 - 1974)	DHR Staff: Not Eligible
44PW1093	Camp	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	DHR Staff: Not Eligible
44PW1094	**Camp, Camp, temporary**	**Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century: 2nd/3rd quarter (1825 - 1874)**	**DHR Staff: Potentially Eligible**
44PW1095	**Military camp**	**19th Century: 2nd/3rd quarter (1825 - 1874)**	**DHR Staff: Potentially Eligible**
44PW1096	**Camp**	**20th Century: 2nd/3rd quarter (1925 - 1974)**	**DHR Staff: Potentially Eligible**
44PW1205	No Data	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1208	Lithic workshop	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1390	Lithic scatter	Middle Archaic (6500 - 3001 B.C.), Early Woodland (1200 B.C. - 299 A.D.)	Not Evaluated
44PW1391	Lithic scatter	Middle Archaic (6500 - 3001 B.C.)	Not Evaluated
44PW1392	Dwelling, multiple	20th Century (1900 - 1999)	Not Evaluated
44PW1560	Dwelling, single	20th Century: 3rd quarter (1950 - 1974)	DHR Staff: Not Eligible
44PW1561	Dwelling, single	20th Century: 1st half (1900 - 1949)	DHR Staff: Not Eligible
44PW1615	Dwelling, single	19th Century: 4th quarter (1875 - 1899)	Not Evaluated
44PW1748	Farmstead	19th Century (1800 - 1899), 20th Century (1900 - 1999)	Not Evaluated
44PW1751	Dwelling, single	19th Century: 4th quarter (1875 - 1899), 20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW1780	Trash pit	19th Century: 4th quarter (1875 - 1899)	Not Evaluated
44PW1781	Earthworks	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated
44PW1782	Trash scatter	19th Century (1800 - 1899)	Not Evaluated
44PW1783	Lithic scatter, Trash scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 19th Century (1800 - 1899)	Not Evaluated
44PW1784	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1785	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1786	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1787	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1788	Road	20th Century: 1st half (1900 - 1949)	Not Evaluated
44PW1789	Earthworks, Military camp, Other	19th Century: 3rd quarter (1850 - 1874)	Not Evaluated

VDHR #	Type	Temporal Association	NRHP Status
44PW1790	Trash scatter	19th Century: 4th quarter (1875 - 1899), 20th Century: 1st quarter (1900 - 1924)	Not Evaluated
44PW1791	Lithic scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1925	Camp, temporary	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44PW1941	**Farmstead**	**Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)**	**DHR Evaluation Committee: Eligible**
44PW1942	Dwelling, single, Farmstead	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	Not Evaluated
44PW1943	Trash scatter	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)	Not Evaluated
44PW1946	Dwelling, single	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	DHR Staff: Not Eligible
44PW1990	Military camp	Civil War (1861 - 1865)	Not Evaluated
44PW2025	Artifact scatter	Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945)	Not Evaluated
44PW2035	Artifact scatter	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	Not Evaluated
44PW2063	Earthworks	Civil War (1861 - 1865)	Not Evaluated
44PW2074	Lithic scatter	Pre-Contact	Not Evaluated
44PW2075	Lithic scatter	Pre-Contact	Not Evaluated
44PW2101	Dwelling, single, Other	Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)	Not Evaluated

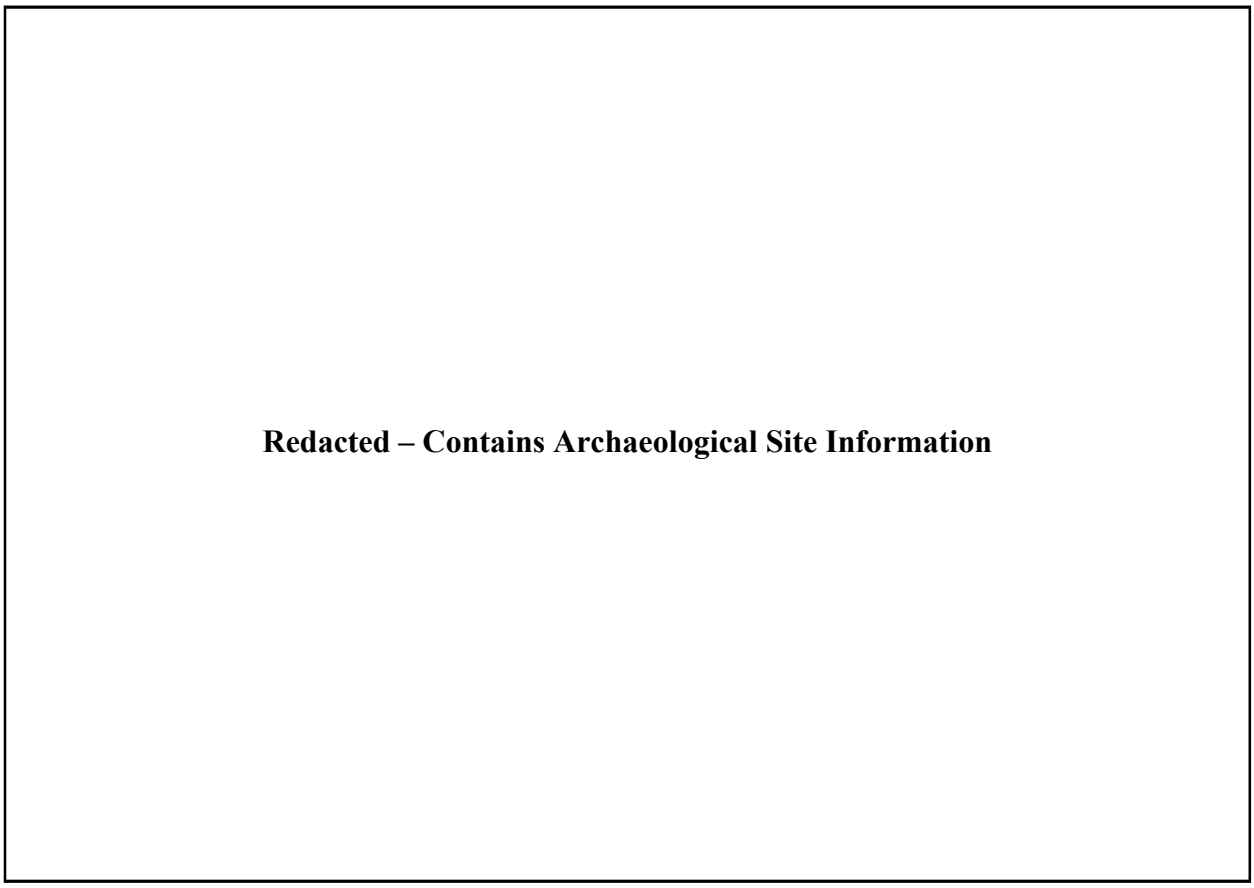

Figure 4-2: Previously recorded archaeological resources located within 1- mile of project area. Source: VCRIS

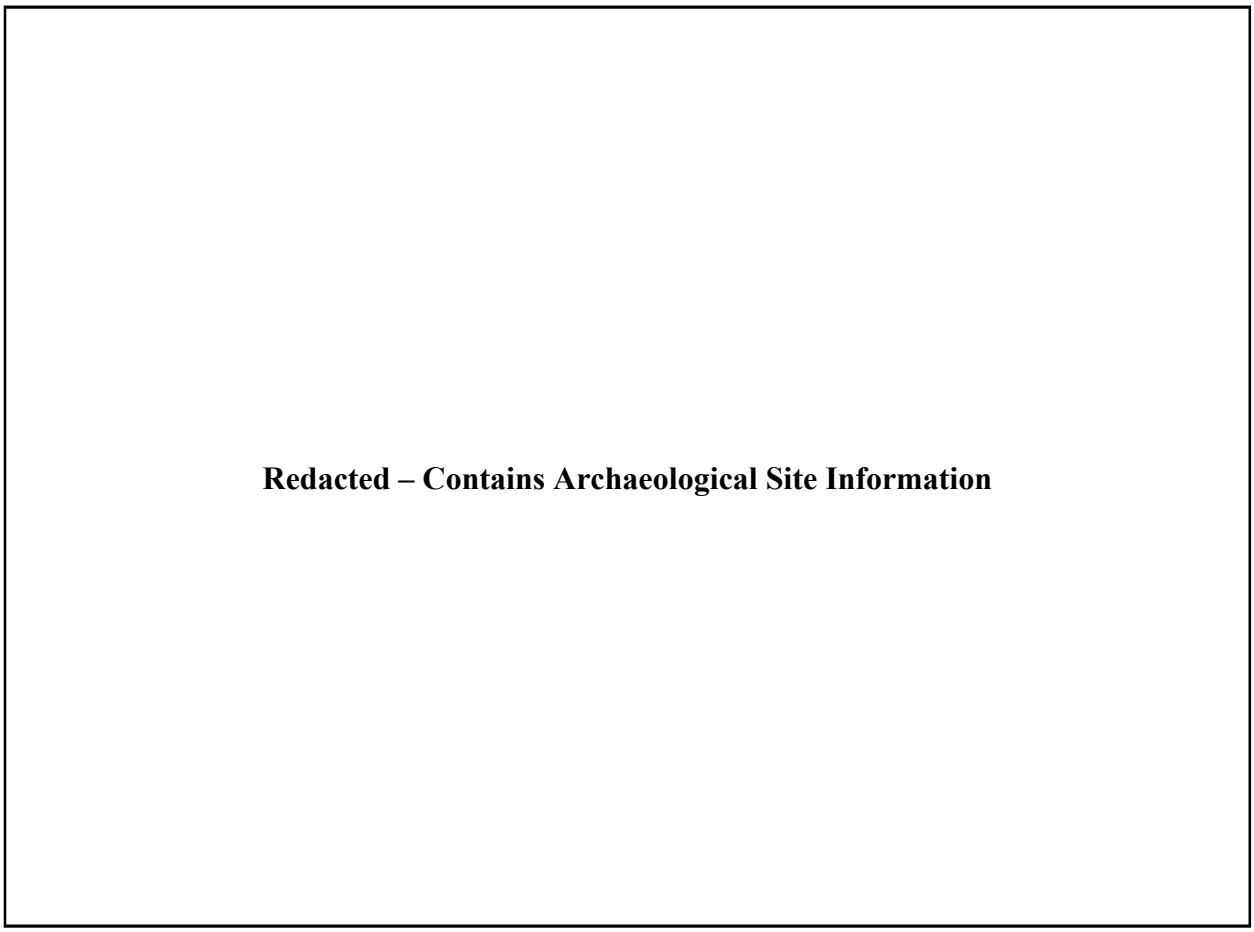

Figure 4-3: Detail of previously recorded archaeological resources within or adjacent to the project ROW. Source: VCRIS

ARCHITECTURAL RESOURCES

Review of the VDHR VCRIS inventory records revealed a total of five-hundred-seventy-eight (578) previously recorded architectural resources are located within 1.5 mile of the project area. Of these, there are no (0) NHLs located within 1.5 mile of the proposed project or closer, fourteen (14) properties listed in the NRHP located within 1.0 mile or closer of the project, four (4) battlefields located within 1.0 mile or closer of the project, no (0) historic landscapes within 1.0 mile or closer of the project, and four (4) properties that have been determined eligible or potentially eligible for listing in the NRHP within 0.5 mile or closer of the project. Of these resources, one (1) of the NRHP-listed properties, three (3 battlefields, and one (1) NRHP-eligible property are directly crossed by the project alignment.

Table 4-3 lists all NHLs, NRHP-listed, and NRHP-eligible resources within their respective buffered tiers. A map of all previously recorded architectural resources within 1.5 mile of the project area is depicted in Figure 4-4 and a map of considered resources within their respective study tiers is included in Figure 4-5.

Table 4-3: Previously recorded cultural resources within their respective tiered buffer zones for the Line #2011 230kV Partial Rebuild Project (Clifton to Winters Branch) as specified in the VDHR Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia

Buffer(miles)	Considered Resources	VDHR #	Description
1.5	National Historic Landmarks	None	None
1.0	National Historic Landmarks	None	None
	National Register- Listed	029-5006	A Fort, Battery Hill Redoubt, Camp Early (Historic/Current), Balmoral Greens (Current), Confederate Fortifications Historic Site (Current), Union Mills (Historic)
		076-0016	Rosebury Farm (Historic), Signal Hill (Historic), Wilcoxen Farm (Historic), Wilcoxen Signal Station (Historic)
		152-5001	Camp Carondelet (Historic), Louisiana Brigade Winter Camp (NRHP Listing)
		155-0001	Brick House (Descriptive), Liberia (Current Name), Liberia (NRHP Listing), Weir House (Historic)
		155-5020	Cannon Branch Fort (Historic), The Wakeman Site (Historic)
	Battlefields	029-5117	Blackburn's Ford Battlefield (Historic), Bull Run (Historic)
	Historic Landscapes	None	None
0.5	National Historic Landmarks	None	None
	National Register- Listed	076-0238	Orange and Alexandria Railroad Bridge Piers (Historic)
		076-5080	Old Manassas Courthouse (Historic), Prince William County Courthouse (Historic/Current)
		152-0001	Blooms House (Historic), Conner House (NRHP Listing)
		155-0010	Jennie Dean Memorial Site (Historic), Manassas Industrial School for Colored Youth (NRHP Listing)
		155-0021	Annaburg (NRHP Listing), Annaburg Manor (Current), Manassas Manor

			(Historic), Portner House (Historic), Portner Mansion (Historic)
		155-0141	1914 Manassas Water Tower (Descriptive), Manassas Water Tower (NRHP Listing), Old Manassas Water Tower (Historic)
		155-5002	Mayfield Fortification (Historic/Current)
		194-0003	Clifton Historic District (NRHP Listing)
	Battlefields	None	None
	Historic Landscapes	None	None
	National Register-Eligible	076-0061	Old Bennett (Historic), Bennett Building (Historic), Bennett School (Current), Manassas Agricultural School (Historic)
		155-0107	Pickeral House (Historic)
		155-0162	Cemetery, 9317 Center Street (Function/Location), Manassas Cemetery and Confederate Cemetery in Manassas (Historic)
0.0 (ROW)	National Historic Landmarks	None	None
	National Register- Listed	155-0161	Manassas Historic District (NRHP Listing)
	Battlefields	076-5036	Bristoe Station Battlefield (Historic), Bull Run Bridge (Historic), Kettle Run Battlefield (Historic), Manassas Station Operations Battlefield (Historic), Union Mills (Historic)
		076-5190	Battle of Gainesville (Historic), Brawner's Farm (Historic), Groveton (Historic), Manassas Plains (Historic), Second Battle of Bull Run (Historic/Current), Second Battle of Manassas (Historic/Current)
		076-5335	Brawner's Farm (Historic), First Battle of Bull Run (Historic), First Battle of Manassas (Historic), Gainesville (Historic), Groveton (Historic), Manassas Plains (Historic)

	Historic Landscapes	None	None
	National Register-Eligible	029-0410	Union Hills Historic District

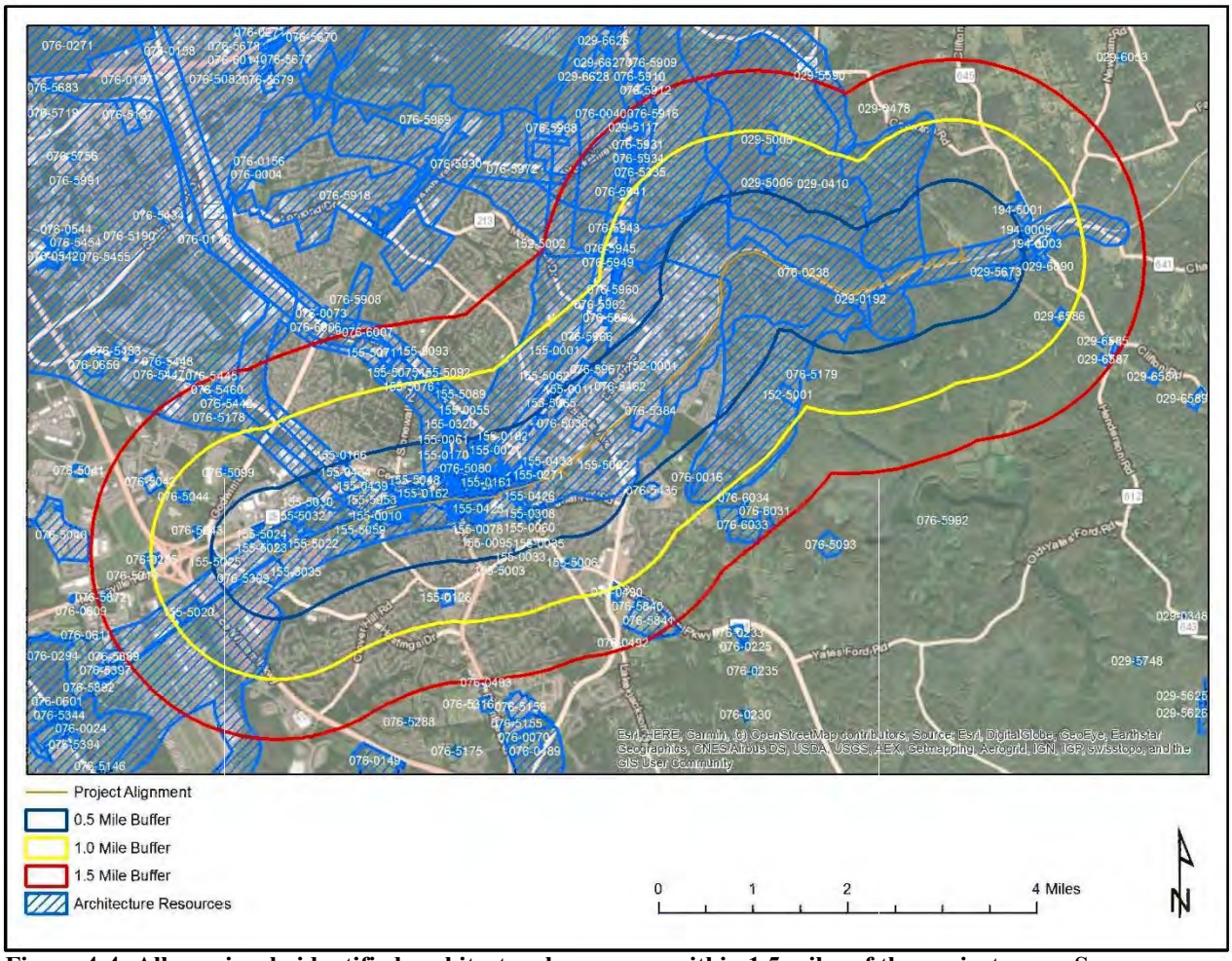

Figure 4-4: All previously identified architectural resources within 1.5 miles of the project area. Source: VCRIS

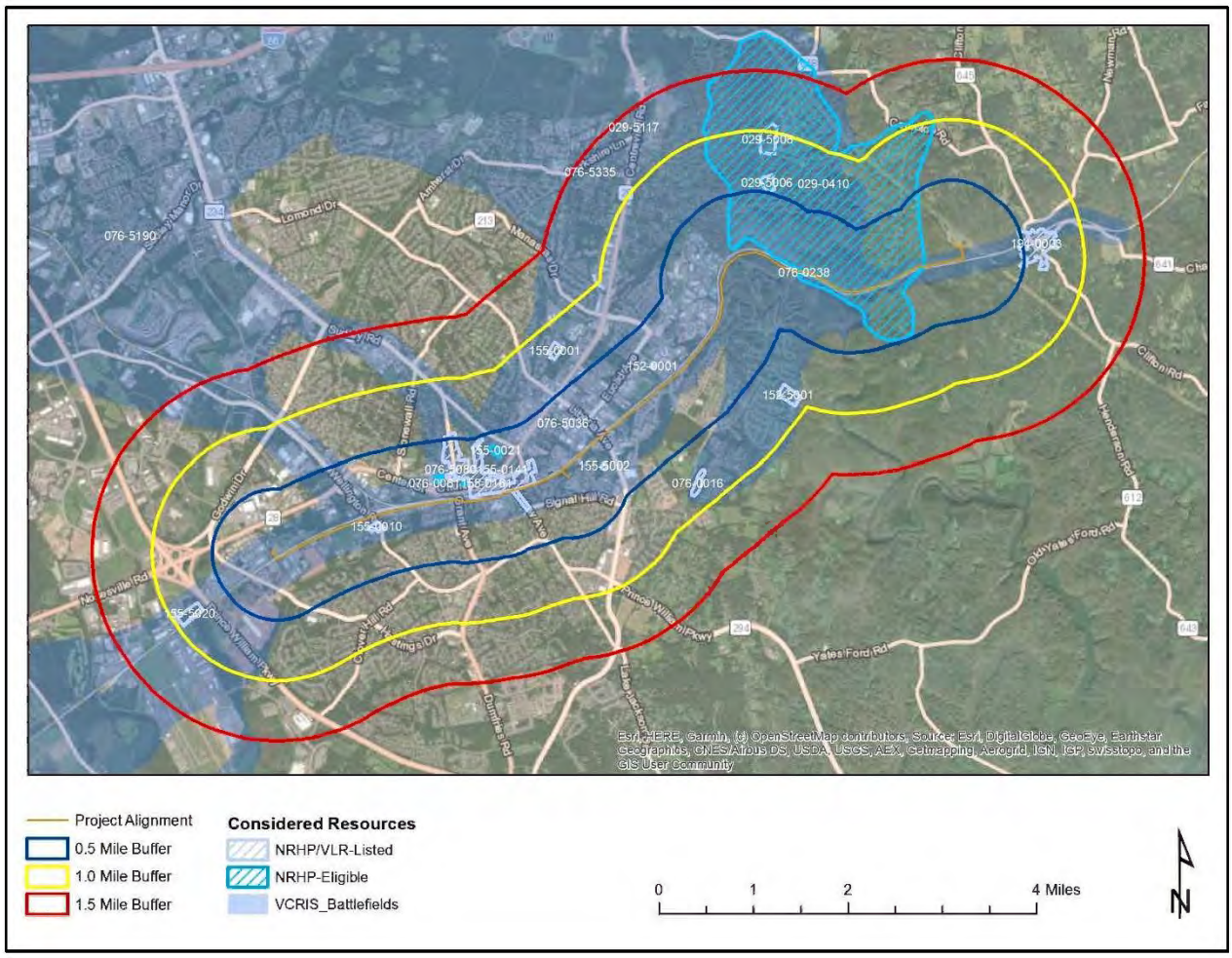

Figure 4-5: Considered architectural resources within their respective tiers around the project area. Source: VCRIS

NPS AMERICAN BATTLEFIELD PROTECTION PROGRAM (ABPP)

A review of the National Park Service (NPS) ABPP records reveals that the project area is located within one mile of portions of five defined battlefields, including the Blackburns Ford Battlefield, First Manassas Battlefield, Manassas Station Operations Battlefield, Second Manassas Battlefield, and Bristoe Station Battlefield. Table 4-4 lists the battlefields within one mile and identifies portions of each battlefield directly crossed by the project and within one mile. Figure 4-6 illustrates the location of each battlefield in relation to the project area.

Table 4-4: ABPP Battlefields within one mile and proximity to battlefield tiers

ABPP #	Battlefield Name	Study Area	Core Area	Potential National Register Area
VA004	Blackburns Ford	Within One Mile	Within One Mile	Within One Mile
VA005	First Manassas	Crossed by Project Alignment	Within One Mile	Crossed by Project Alignment
VA024	Manassas Station Operations	Crossed by Project Alignment	Crossed by Project Alignment	Crossed by Project Alignment

ABPP #	Battlefield Name	Study Area	Core Area	Potential National Register Area
VA026	Second Manassas	Within One Mile	Crossed by Project Alignment	Within One Mile
VA040	Bristoe Station	Within One Mile	Within One Mile	Within One Mile

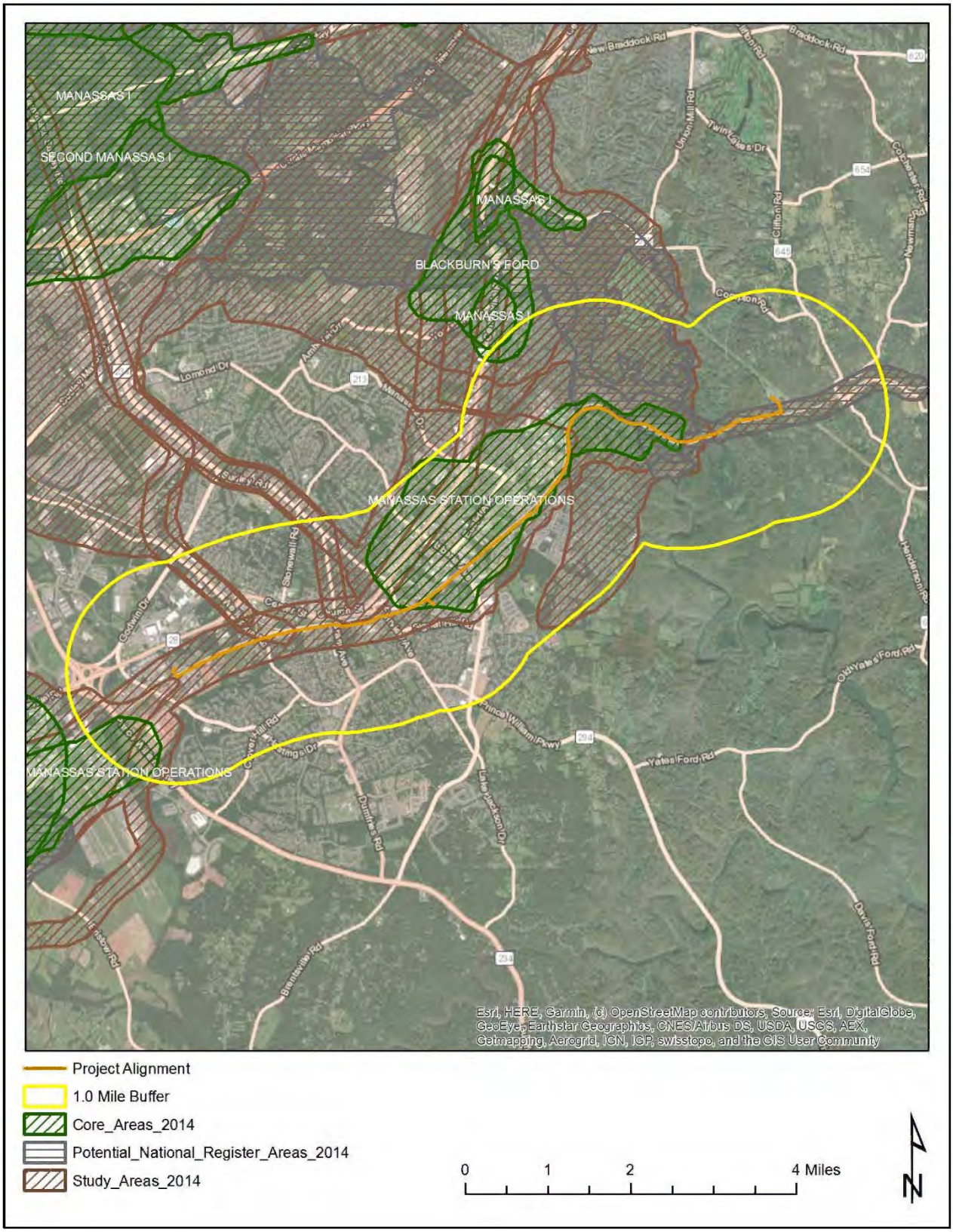

Figure 4-6: ABPP-delineated battlefield areas within one mile of the project. Source: VCRIS

5. RESULTS OF FIELD RECONNAISSANCE

In accordance with the VDHR guidelines for assessing impacts of proposed electric transmission lines on historic resources, previously recorded historic architectural properties that meet criteria for consideration located within 1.5 mile, 1.0 mile, or 0.5 mile of the project area (Table 5-1) were field verified for existing conditions and photo documented. Inspection and analysis of the setting around the resource and views towards the project alignment were also investigated to assess potential impacts. The results of the field reconnaissance for each resource are organized by NRHP-status, and summarized in the following pages.

Previously recorded archaeological sites located directly within the project ROW were not field inspected or subject to assessment at this time.

Table 5-1: Considered Architectural Resources within their Respective Tiered Buffer Zones for the Line #2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

VDHR #	Resource Name	NRHP-Status	Distance from Project
029-0410	Union Hills Historic District	NRHP-Eligible	Directly Crossed
029-5006	Battery Hill Redoubt, Fort "A"	NRHP-Listed	~0.53 Mile
029-5117	Blackburn's Ford Battlefield	NRHP-Eligible	~0.57 Mile
076-0016	Signal Hill	NRHP-Listed	~0.74 Mile
076-0061	Bennett School	NRHP-Eligible	~0.17
076-0238	Orange and Alexandria Railroad Bridge Piers	NRHP-Listed	Directly Crossed
076-5036	Bristoe Station Battlefield	Potentially NRHP-Eligible	Directly Crossed
076-5080	Prince William County Courthouse	NRHP-Listed	~0.16 Mile
076-5190	Second Battle of Manassas	Potentially NRHP-Eligible	Directly Crossed
076-5335	First Battle of Manassas	Potentially NRHP-Eligible	Directly Crossed
152-0001	Conner House	NRHP-Listed	~0.17 Mile
152-5001	Louisiana Brigade Winter Camp	NRHP-Listed	~0.75 Mile
155-0001	Liberia	NRHP-Listed	~0.74 Mile
155-0010	Jennie Dean Memorial Site	NRHP-Listed	~0.06 Mile
155-0021	Annaburg	NRHP-Listed	~0.28 Mile
155-0107	Pickeral House	NRHP-Eligible	~0.13 Mile
155-0141	Old Manassas Water Tower	NRHP-Listed	~0.16 Mile
155-0161	Manassas Historic District	NRHP-Listed	Directly Crossed
155-0162	Manassas Cemetery and Confederate Cemetery in Manassas	Potentially NRHP-Eligible	~0.03 Mile
155-5002	Mayfield Fortification	NRHP-Listed	~0.17 Mile
155-5020	Cannon Branch Fort	NRHP-Listed	~0.9 Mile
194-0003	Clifton Historic District	NRHP-Listed	~0.47 Mile

NATIONAL REGISTER OF HISTORIC PLACES – LISTED PROPERTIES
Located within 1.0 Mile of the Project or Closer

Battery Hill Redoubt/ "A" Fort, Barlmoral Greens Avenue (VDHR ID# 029-5006)

The Battery Hill Redoubt, also known as "A" Fort, was a Confederate fortification in Union Mills, Virginia. It was constructed during the Civil War between 1861-1862. The fortification includes an A-shaped earthwork and a smaller redoubt. The site is situated on a plateau between Johnny Moore Creek to the east and the confluence of Little Rocky Run and Bull Run to the west. The fortification was built by Confederate General Joseph E. Johnston's army during the winter of 1861-1862 after the First Battle of Manassas. This redoubt was part of a line of Confederate fortifications that ran from Centreville to Dumfries. Due to its historical significance as a Civil War-era fortification, the site was listed in the NRHP in 1998.

The Battery Hill Redoubt property consists of two discontiguous parcels located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the Battery Hill Redoubt resource boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. As most of resource and associated features are located on private property, field inspection was limited to public ROW along the perimeter of the property. The Battery Hill Redoubt site is located northeast of Manassas within a golf club and residential community north of the central length of the project alignment. The project alignment extends in a generally east-west orientation through the landscape to the south, roughly 0.53 mile away from the southern portion of the resource and 0.82 mile away from the northern portion.

A site visit to the resource found that the boundaries are located within a wooded area on private property associated with the Westfields Golf Club. The northern portion is enclosed by a chain link fence while the southern portion appears to be unfenced. The two portions of the resource are bounded by Balmoral Greens Avenue to the west and by a golf course and suburban single-family homes to the north, east, and south. Due to the thick wooded area in which the resource is located, visibility of the site is limited to several narrow breaks in the vegetation along the driveway to the Westfields Golf Club.

As part of the project, structures along the project alignment to the south will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the property, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from public ROW in the vicinity of the resource found that none of the existing structures on the project alignment are visible due to topography and vegetation. The landscape between the site and the project alignment slopes steeply down to Bull Run Creek and is thickly wooded. The existing structures within the vicinity to be replaced as part of this project range from 95- to 125-feet in height and the proposed replacement structures will likewise range from 95- to 125-feet in height. As such, the heights of the individual proposed structures may vary slightly from their existing configuration, although none will be any taller than the existing structures. As such, it is anticipated that the intervening topography and vegetation will continue to completely screen visibility of the replacement structures from the Battery Hill Redoubt. This was confirmed

by photo simulation from multiple vantages that depicts all structures remaining screened beneath the intervening terrain and vegetation. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which does not include any of the existing project structures, nor will it include views of any replacement structures, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose ***no impact*** to Battery Hill Redoubt, Fort "A".

Figure 5-1 depicts the location of Battery Hill Redoubt in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-2 through 5-5 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-6 through 5-11 provide photo simulation from the resource.

Figure 5-1: Location of Battery Hill Redoubt, Fort "A" in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-2: Photo location 1- Representative view of Battery Hill Redoubt from Cannon Fort Drive, facing north.

Figure 5-3: Photo location 2- View from Battery Hill Redoubt (No project structures visible), facing south.

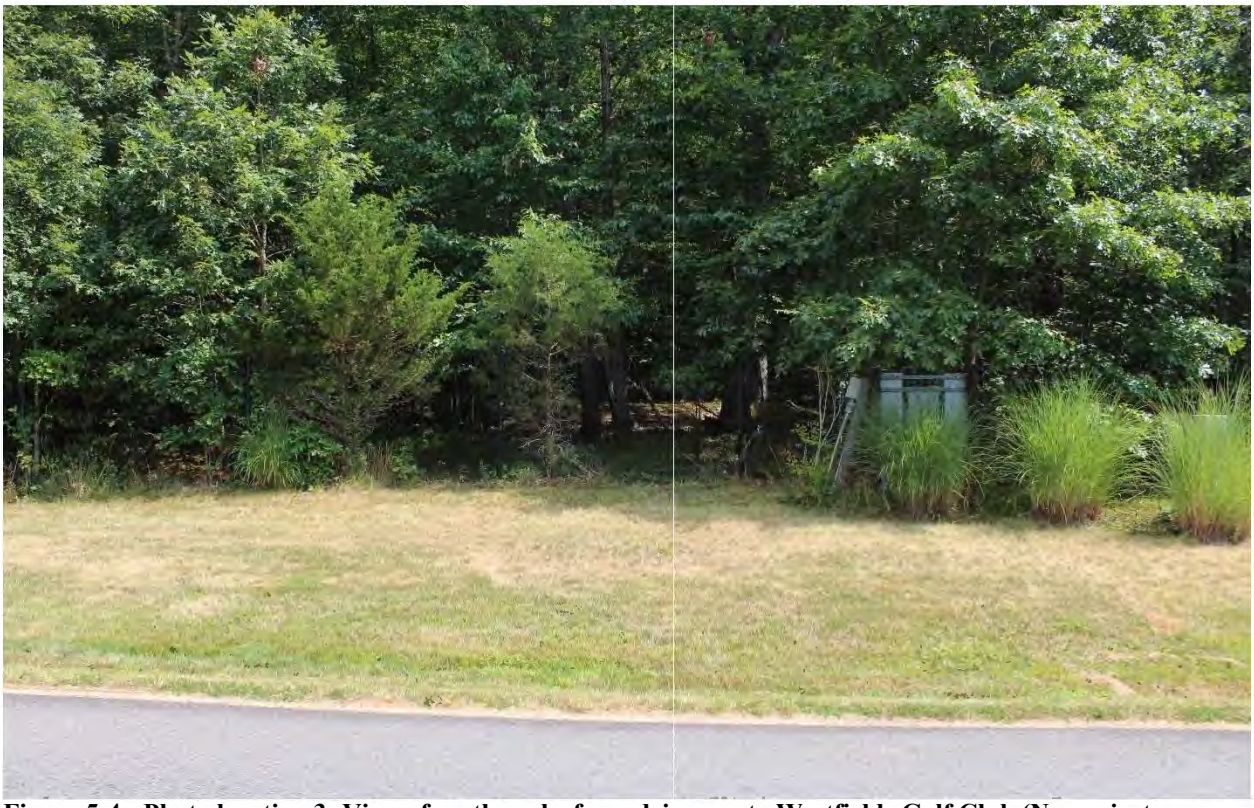

Figure 5-4: Photo location 3- View of earthworks from driveway to Westfields Golf Club (No project structures visible), facing south.

Figure 5-5: Photo location 4- View from Balmoral Greens Avenue at Westfields Golf Club (no project structures visible), facing south.

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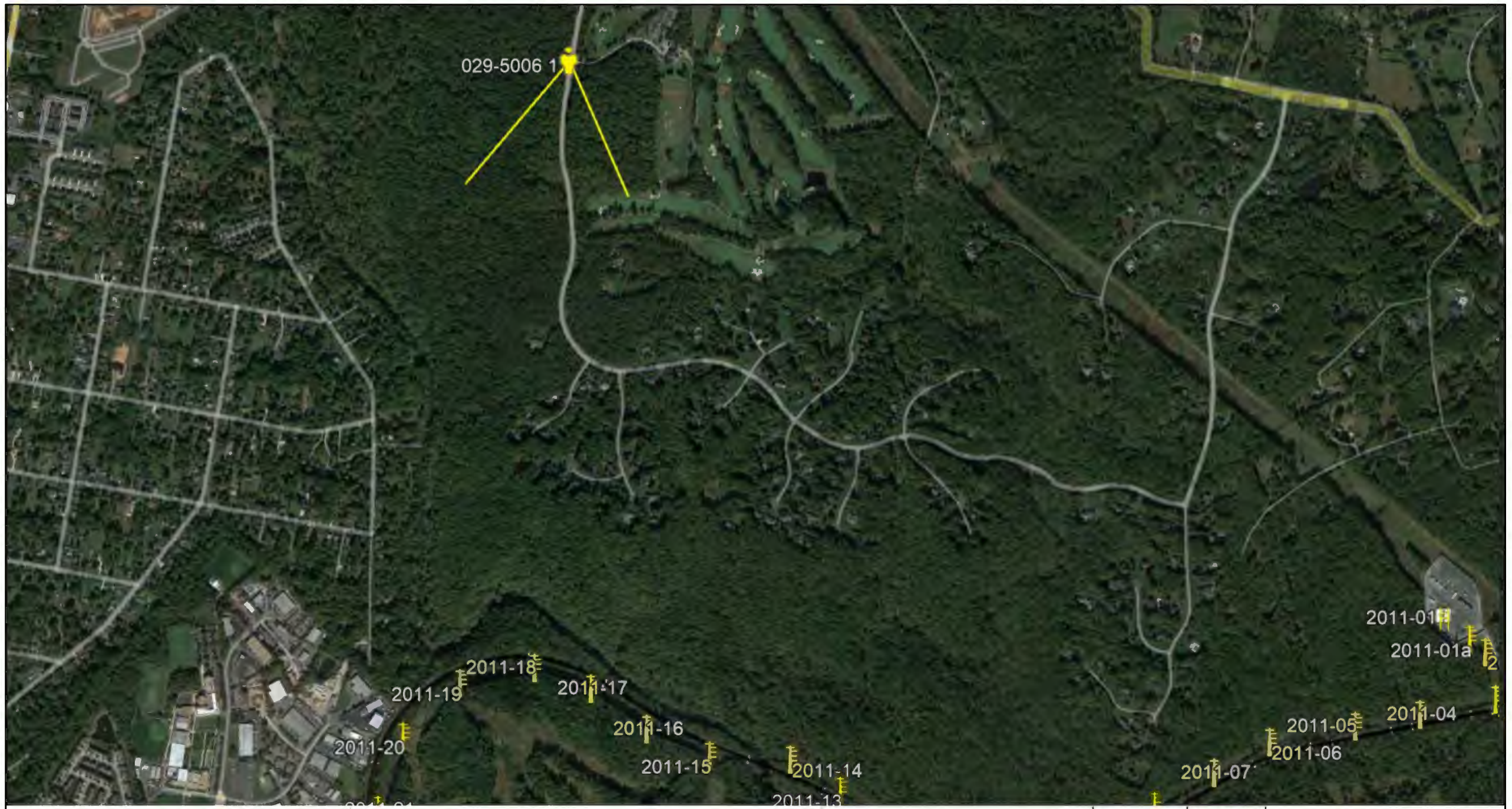

Structure	Distance (ft)	Height (ft)
Str 2011-14	6955	96.5
Str 2011-15	6726	126.5
Str 2011-16	6380	96.5
Str 2011-17	5955	111.5
Str 2011-18	5765	106.5
Str 2011-19	5991	126.5
Str 2011-20	6600	121.5

Figure 5-6: Battery Hill Redoubt Simulation 1 – Simulation location, direction of view, and structures modeled from entrance to Westfields Golf Club. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 029-5006 1**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-7: Battery Hill Redoubt Simulation 1 – Existing view from entrance to Westfields Golf Club. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: 029-5006 1	Proposed View (Location of towers not visible are overlaid with yellow tower icon)
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-8: Battery Hill Redoubt Simulation 1 – Proposed view from entrance to Westfields Golf Club – (Structures not visible shown in yellow). Source: GTTE, LLC

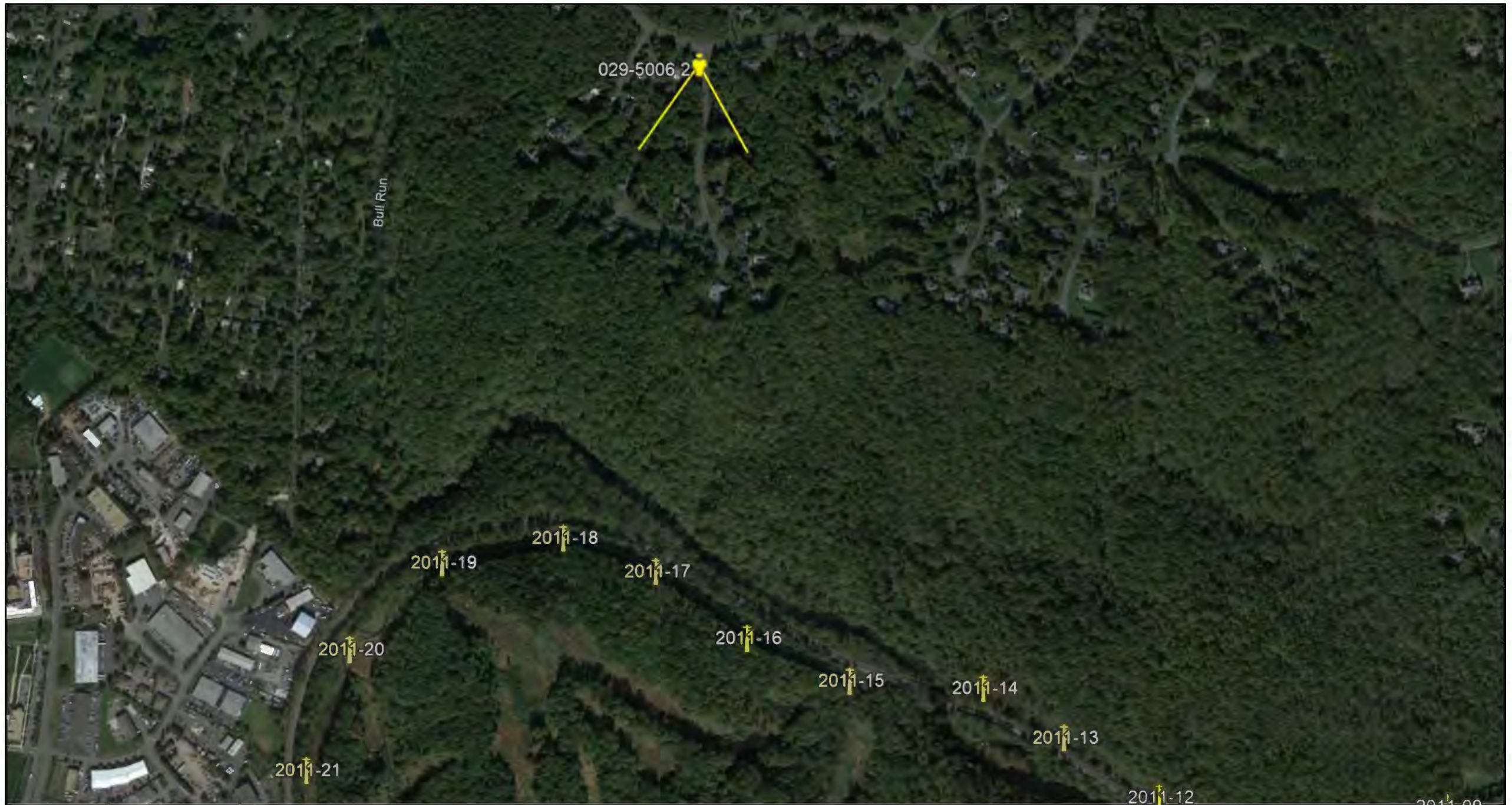

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 029-5006 2

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-14	3980	96.5
Str 2011-15	3691	126.5
Str 2011-16	3340	96.5
Str 2011-17	2953	111.5
Str 2011-18	2855	106.5
Str 2011-19	3254	126.5
Str 2011-20	3963	121.5

Figure 5-9: Battery Hill Redoubt Simulation 2 – Simulation location, direction of view, and structures modeled from Balmoral Greens Avenue. Source: GTTE, LLC

Figure 5-10: Battery Hill Redoubt Simulation 2 – Existing view from Balmoral Greens Avenue. Source: GTTE, LLC

Figure 5-11: Battery Hill Redoubt Simulation 2 – Proposed view from Balmoral Greens Avenue – (Structures not visible shown in yellow). Source: GTTE, LLC

Signal Hill (VDHR ID# 076-0016)

Signal Hill is located on Signal Hill Road and Manassas Drive approximately one mile east of the historic Manassas Junction. Situated on the highest ridge of the Manassas area, the site is composed of a fortification that served as a signaling station during the Civil War. The station was used by Union and Confederates forces during the First and Second Battles of Manassas. The fortification originally covered the ridge top and consisted of seven artillery emplacements and a series of rifle pits. The site is significant due to its role as a communication center during the First and Second Battles of Manassas. As a result, the site was listed in the NRHP in 1989.

The Signal Hill site is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the Signal Hill resource boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. As the site boundaries and associated features are not publicly-accessible, field inspection was conducted from a memorial and interpretative kiosk area along public ROW to the west. The Signal Hill site is located east of Manassas within a suburban area east of the central length of the project alignment. The project alignment extends in a generally northeast-southwest orientation through the landscape to the west, roughly 0.74 mile away at its nearest point.

A site visit to the resource found that the boundaries are located within a wooded area atop a ridge setback from the road. A pull-off and small parking area with a memorial and interpretive kiosk are situated off Signal View Drive, near the northern end of the resource boundary. It is bounded by residential neighborhoods to the south, east, and north, and a public park is set across the road to the west. Due to the thick woods around and within the resource, visibility from the road is limited to the wooded ridge itself, but no associated features can be seen.

As part of the project, structures along the project alignment to the west will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the resource, however, because some of the the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the interpretative kiosk pull-off and public ROW in the vicinity of the resource found that several of the existing structures on the project alignment are visible above the treeline in the distance. Much of the landscape between the site and the project alignment is wooded and/or developed which screens views of structures as they extend further to the north and south, however, the large cleared field for the public park directly across the street from the site allow more distant views in that direction where the several visible structures are set. The existing structures within the vicinity to be replaced as part of this project range from 110- to 135-feet in height and the proposed replacement structures will range from 110- to 140-feet in height. As such, the heights of most of the individual proposed structures will remain the same, although some may vary or increase in height slightly from their existing configuration. As such, it is anticipated visibility will remain similar, with structures that are currently visible remaining as such, while the intervening vegetation will continue to screen visibility of those structures that are not currently visible.

Because the structures that are currently visible will generally remain the same height or increase in height by 5 feet or less, the change will not be perceptible at the distance they are set. This was confirmed by photo simulation from the interpretive kiosk that depicts similar visibility of currently visible structures with no new visibility of any structures currently screened. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which already includes visibility of several structures in the distance, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to Signal Hill.

Figure 5-12 depicts the location of Signal Hill in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-13 through 5-15 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-16 through 5-18 provide photo simulation from the resource.

Figure 5-12: Location of Signal Hill in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-13: Photo location 1- Representative view of Signal Hill and memorial from Signal View Drive, facing southeast.

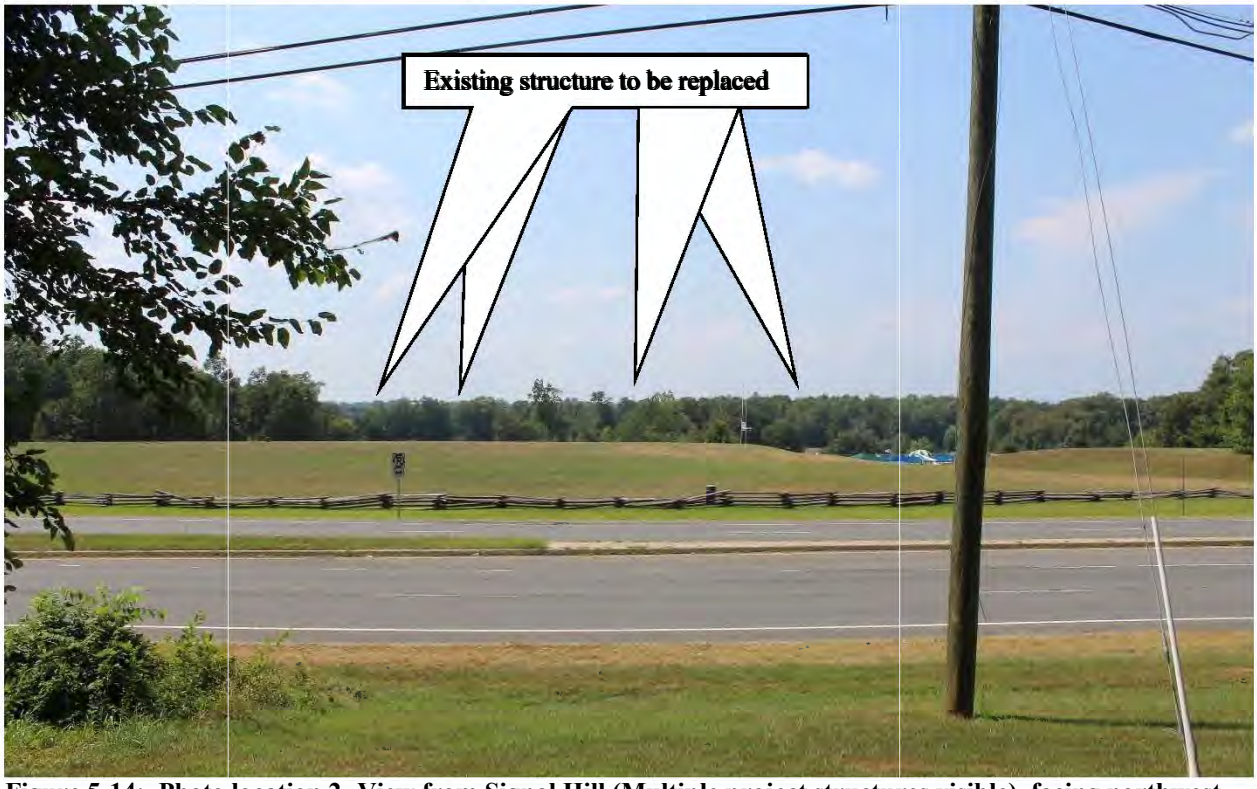

Figure 5-14: Photo location 2- View from Signal Hill (Multiple project structures visible), facing northwest.

Figure 5-15: Photo location 3- View from Signal Hill (No project structures visible), facing north.

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Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 076-0016

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-30	3767	111.5
Str 2011-31	3853	116.5
Str 2011-32	4044	131.5
Str 2011-33	4354	131.5
Str 2011-34	4596	126.5
Str 2011-35	4868	116.5
Str 2011-36	5149	116.5
Str 2011-37	5552	121.5
Str 2011-38	5933	120.0

Figure 5-16: Signal Hill Simulation 1 – Simulation location, direction of view, and structures modeled from interpretive kiosk. Source: GTTE, LLC

Figure 5-17: Signal Hill Simulation 1 – Existing view from interpretive kiosk. Source: GTTE, LLC

Figure 5-18: Signal Hill Simulation 1 – Proposed view from interpretive kiosk – (Visible structures shown as they would appear. Structures not visible shown in yellow). Source: GTTE, LLC

Orange & Alexandria Railroad Bridge Piers (VDHR ID# 076-0238)

Two sandstone bridge piers are located on either side of Bull Run near Union Mills. The piers are remnants of the railroad bridge over Bull Run that was part of the Orange & Alexandria (O&A) Railroad during the early-to-mid-nineteenth century. During the Civil War, the bridge was burned at least seven times between 1861 and 1865 due to consistent fighting around the town of Manassas. The railroad over Bull Run played a major part in the First and Second Battles of Manassas, as well as the Battle of Bristoe Station. Due to their historical associations, the piers were listed in the NRHP in 1989.

The O&A Railroad Piers are located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the resource boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. Although the existing railroad bridge is not accessible, field inspection was conducted from a public hiking trail that extends along the shore of Bull Run Creak that crosses beneath the bridge and adjacent to the pier on the east side of the crossing. The O&A Railroad Piers are located northeast of Manassas within the Hemlock Overlook Regional Park. The project alignment extends in a generally east-west orientation through the landscape immediately adjacent to and above the railroad bridge.

A site visit to the resource found that the historic piers are set on each side of Bull Run Creek within what is now a large municipal park. While the current railroad bridge is inaccessible, a public hiking trail borders the east side of the creek and extends beneath the bridge as it crosses the creek. Due to the woods throughout the park and bordering the railroad corridor, visibility of the bridge and piers is generally limited to the immediate vicinity while the slopes and vegetation bordering the creek quickly screen views from further distances.

As part of the project, structures along the project alignment to each side of the railroad bridge will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the resource, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the hiking trail in the vicinity of the piers and bridge found that from the south side, the conductor (transmission line) may be seen as it is suspended over the bridge, however, the trees and topography prevent visibility of the existing structures. From the north side of the bridge, two existing structures west of the crossing are visible, however, structures to the east are screened by the bluff bordering the creek and the angle of view. The existing structures in the vicinity of the resource to be replaced as part of this project range from 90- to 125-feet in height and the proposed replacement structures will range from 95- to 125-feet in height. As such, one of the individual proposed structures will be increased in height by 5 feet, while the rest will remain at the same height. As such, it is anticipated visibility will remain similar, with the two structures that are currently visible remaining as such with one slightly taller, while the intervening vegetation will continue to screen visibility of those structures that are not currently visible. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from

the resource which already includes visibility of several structures from a discrete vantage point, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the O&A Railroad Piers.

Figure 5-19 depicts the location of the O&A Railroad Piers in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-20 through 5-23 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area.

Figure 5-19: Location of O&A Railroad Piers in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-20: Photo location 1- Representative view of existing bridge from hiking trail along Bull Run Creek (conductor visible above bridge but no project structures visible), facing north.

Figure 5-21: Photo location 2- View from trail on south side of bridge (Conductor visible above bridge, but no project structures visible), facing northwest

Figure 5-22: Photo location 3- View from trail on north side of bridge (Two project structures visible), facing west.

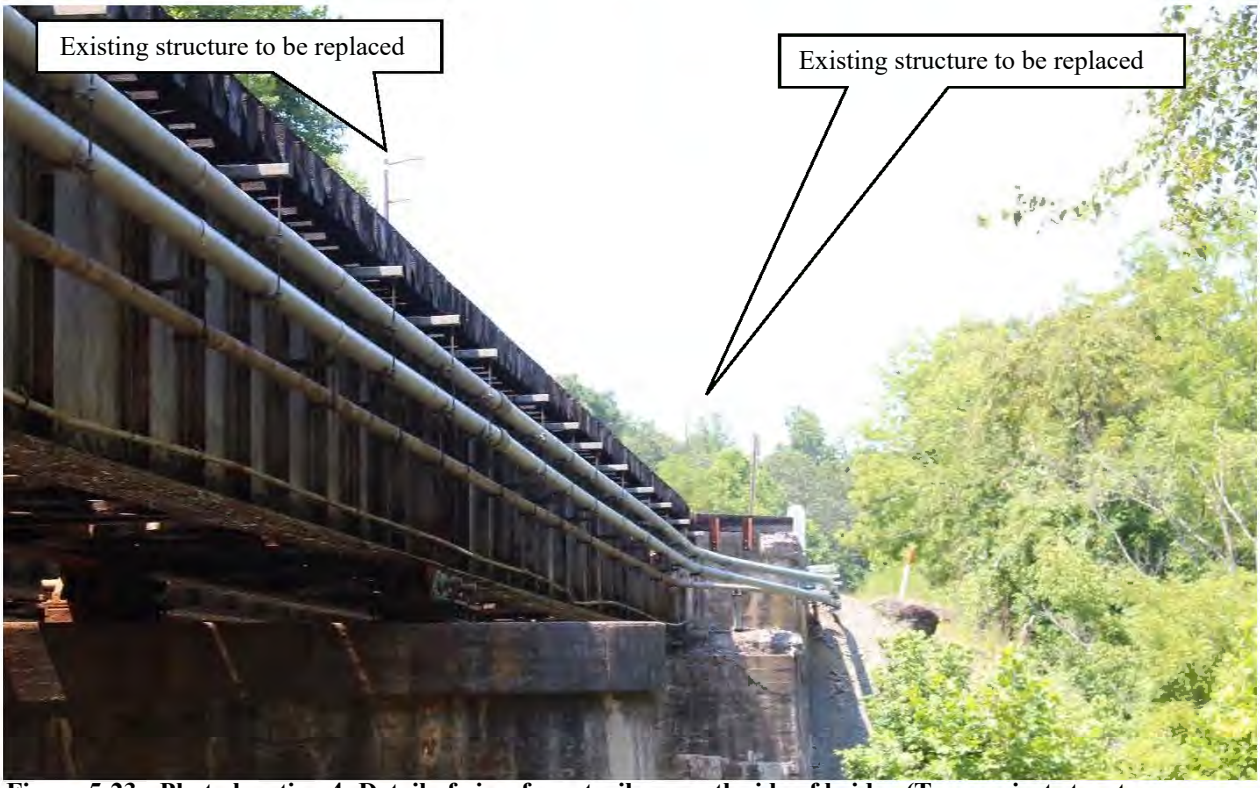

Figure 5-23: Photo location 4- Detail of view from trail on north side of bridge (Two project structures visible), facing west.

Old Manassas Courthouse (VDHR ID# 076-5080)

The Old Manassas Courthouse, currently known as the Prince William County Courthouse, is a rare example of a late-Victorian, Romanesque-style building constructed in 1893. It was designed by architects James C. Teague and Philip Thorton Mayre. A matching jail was originally constructed with the courthouse but was demolished in 1986. The construction of the county's fifth courthouse was prompted by the county seat's move to Manassas, an important railroad junction, in 1872. The courthouse remained in use until 1984, when a new courthouse opened nearby. The building was restored and reopened to the public in 2001. It currently remains as an example of Romanesque architecture and represents the history of Manassas as an evolving crossroads town after the Civil War. As a result, the courthouse was listed as a contributing resource to the Manassas Historic District in 1988.

The Prince William County Courthouse is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the resource boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. Field inspection was conducted from public ROW and sidewalks bordering the front and side of the property. The Prince William County Courthouse is located within the urban core of Manassas. The project alignment extends in a generally east-west orientation through the landscape to the south (front) of the property, roughly 0.16 mile away at its nearest point.

A site visit to the resource found that the courthouse remains set on an urban block and is bordered by dense development. The courthouse building is set back from the road and sidewalk on a grassy lawn with a larger addition and parking lot to the west side. Due to the development patterns and urban nature of the area, visibility of the building is unobstructed from the roads in front of and bordering the property, as well as within a block away, but is screened from view by other buildings beyond the adjacent block.

As part of the project, structures along the project alignment in the vicinity of the property will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing, although an existing substation just south of the property will not be rebuilt as part of the effort. As such, there will be no direct impact to the resource, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the roads and sidewalks bordering the property found that several existing structures may be seen through gaps in the adjacent development from discrete vantage points, however, visibility is fleeting and becomes screened with just a slight change in vantage. The most unobstructed views are directly across the street from the front of the building where two existing structures are visible. One of these structures plus an additional structure are also visible from the east side of the building. From this vantage, an existing substation may be seen down the road, however, this will not be rebuilt as part of the project and the adjacent structures leading into the substation are both screened by development. The existing structures in the vicinity of the resource to be replaced as part of this project range from 60- to 129-feet in height and the proposed

replacement structures will range from 90- to 125-feet in height. As such, several of the individual proposed structures may be increased in height while others will remain the same height, or in some cases be decreased in height. Overall, the tallest replacement structures will be roughly 4 feet shorter than the tallest existing structure. As such, it is anticipated visibility will remain similar, with visibility of several structures through gaps in adjacent buildings from discrete vantages, while the intervening development will continue to screen visibility of most structures that are not currently visible. Of the structures that will be visible, the minimal change/reduction in height will not likely be perceptible. This was confirmed by photo simulation from the front of the property that depicts currently visible structures remaining as such with only a minimal change in visibility. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which already includes limited visibility of several structures from discrete vantage points, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Prince William County Courthouse.

Figure 5-24 depicts the location of Prince William County Courthouse in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-25 through 5-30 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-31 through 5-36 provide photo simulation from the resource.

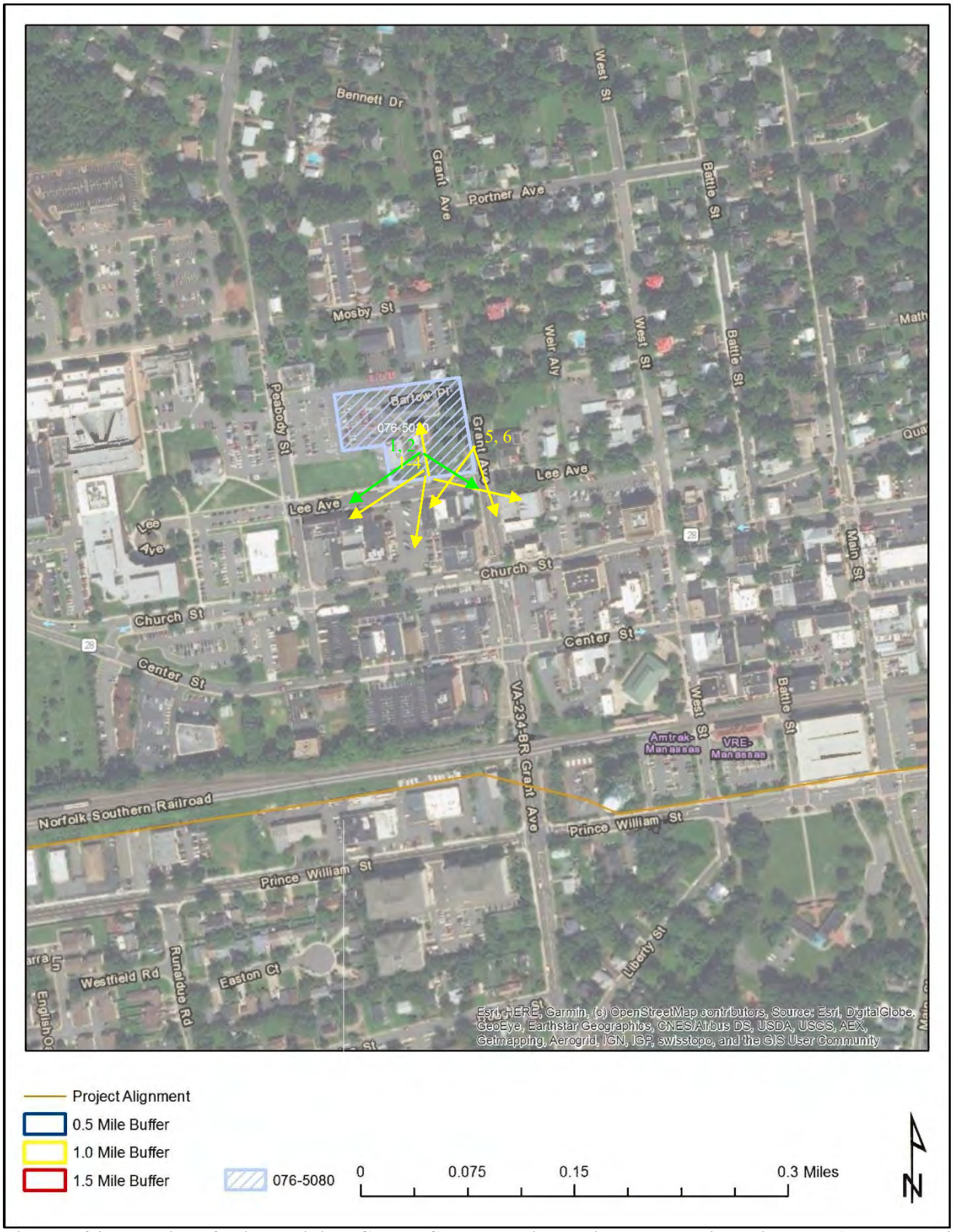

Figure 5-24: Location of Prince William County Courthouse in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-25: Photo location 1- Representative view of Prince William County Courthouse front facade, facing north.

Figure 5-26: Photo location 2- View from front of property (No project structures visible), facing southeast.

Figure 5-27: Photo location 3- View from front of property (Two project structures visible), facing south.

Figure 5-28: Photo location 4- View from front of property (No project structures visible), facing southwest.

Figure 5-29: Photo location 5- View from west side of property (Two project structures visible), facing southwest.

Figure 5-30: Photo location 6- View from east side of property (Existing substation visible but no project structures visible), facing south.

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 076-5080 A

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-45	2461	105.0
Str 2011-46	2300	105.0
Str 2011-46A	2358	101.5
Str 2011-47	2149	115.0
Str 2011-48	1873	115.0
Str 2011-49	1469	95.0
Str 2011-50	1250	80.0
Str 2011-51	1160	80.0

Figure 5-31: Prince William County Courthouse Simulation 1 – Simulation location, direction of view, and structures modeled from front lawn to southeast. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 076-5080 A**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-32: Prince William County Courthouse Simulation 1 – Existing view from front lawn to southeast. Source: GTTE, LLC

Figure 5-33: Prince William County Courthouse Simulation 1 – Proposed view from front lawn to southeast – (Structures not visible shown in yellow). Source: GTTE, LLC

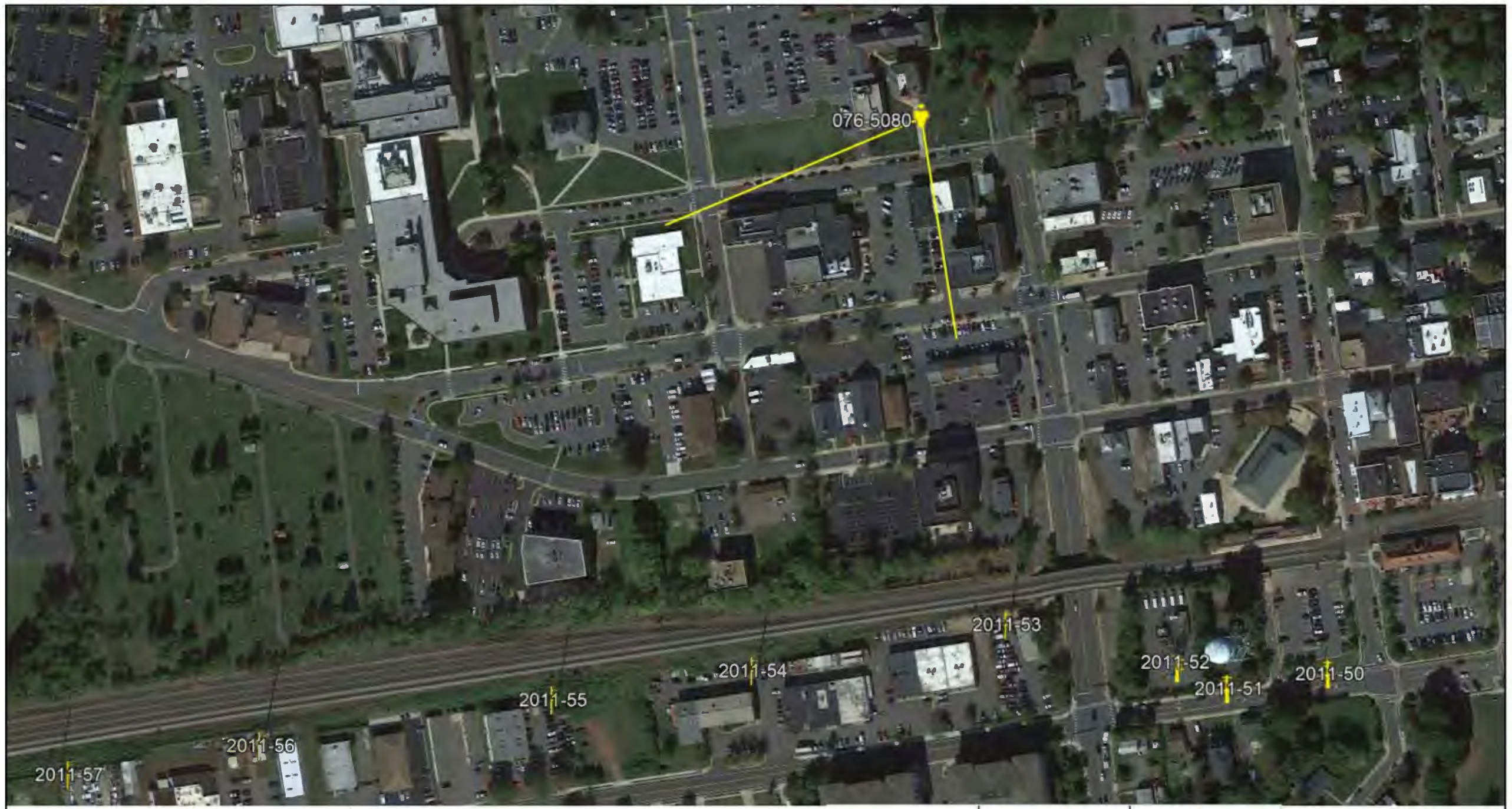

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 076-5080 B

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-54	1039	120.0
Str 2011-55	1247	125.0
Str 2011-56	1654	120.0
Str 2011-57	1958	125.0

Figure 5-34: Prince William County Courthouse Simulation 2 – Simulation location, direction of view, and structures modeled from front lawn to southwest. Source: GTTE, LLC

Figure 5-35: Prince William County Courthouse Simulation 2 – Existing view from front lawn to southwest. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild | **Location: 076-5080 B** | **Proposed View**
(Location of towers not visible are overlaid with yellow tower icon)

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-36: Prince William County Courthouse Simulation 2 – Proposed view from front lawn to southeast – (Two visible structures shown as they would appear. Structures not visible shown in yellow). Source: GTTE, LLC

Conner House (VDHR ID# 152-0001)

The Conner House, also known as the Blooms House, is a Federal-style building constructed circa 1810. It likely served as an overseer's house during the antebellum period. During the Civil War, the house served as headquarters for Confederate General Joseph E. Johnston from July to November 1861, as well as a hospital during the First and Second Battles of Manassas. After the war, the house was owned by a prominent family in Prince William County, the Conner family. The building remains as one of few remaining antebellum homes in Manassas. Due to its historical and architectural significance, the house was individually listed in the NRHP in 1981.

The Conner House is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the resource boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. Field inspection was conducted from the yard in front of the home as well as public ROW bordering the property to the west. The Conner House is located within a suburban area just north of Manassas. The project alignment extends in a generally northeast-southwest orientation through the landscape to the east (rear) of the property, roughly 0.17 mile away at its nearest point.

A site visit to the resource found that the house remains on a small grassy plot bordered by modern development. It is set atop a slight knoll with Conner Drive just to the west side, a parking lot and commercial building to the front, and a larger parking lot associated with a high-density residential complex downhill to the south and east side. Due to the open nature of the parking lots and road bordering the property, the home is visible from a good distance to the north and south, and views outward are also generally open and unobstructed.

As part of the project, structures along the project alignment in the vicinity of the property will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the resource, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from Conner Road to the front of the property revealed that several existing structures may be seen downhill to the rear and side of the building, while additional structures can be seen across an open athletic field across the road from the property to the west. Inspection from the homesite found that vegetation in the immediate vicinity screens many of the structures although several may be seen as they extend away to the northeast. The existing structures in the vicinity of the resource to be replaced as part of this project range from 110- to 135-feet in height and the proposed replacement structures will range from 110- to 140-feet in height. As such, several of the individual proposed structures may be increased in height slightly while others will remain the same height. Overall, the tallest replacement structure will be only 5 feet taller than the tallest existing structure. As such, it is anticipated visibility will remain similar, with visibility of several structures across open field and spanning the road in the vicinity. This was confirmed by photo simulation from the property in two directions that depicts a slight change in configuration and visibility of several structures that are already visible with no visibility of any additional structures.

Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which already includes visibility of several structures that are seen amongst and across extensive nonhistoric development within a compromised setting. It is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Conner House.

Figure 5-37 depicts the location of the Conner House in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-38 through 5-42 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-43 through 5-48 provide photo simulation from the resource.

Figure 5-37: Location of Conner House in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-38: Photo location 1- Representative view of Conner House front facade, facing east.

Figure 5-39: Photo location 2- View from Conner Drive to front of property (One project structure visible), facing southeast.

Figure 5-40: Photo location 3- View from Conner Drive to front of property (Several project structures visible), facing south.

Figure 5-41: Photo location 4- View from Conner Drive at driveway to property (One project structure visible), facing southeast.

Figure 5-42: Photo location 5- View from side yard of house (One project structure visible), facing northeast.

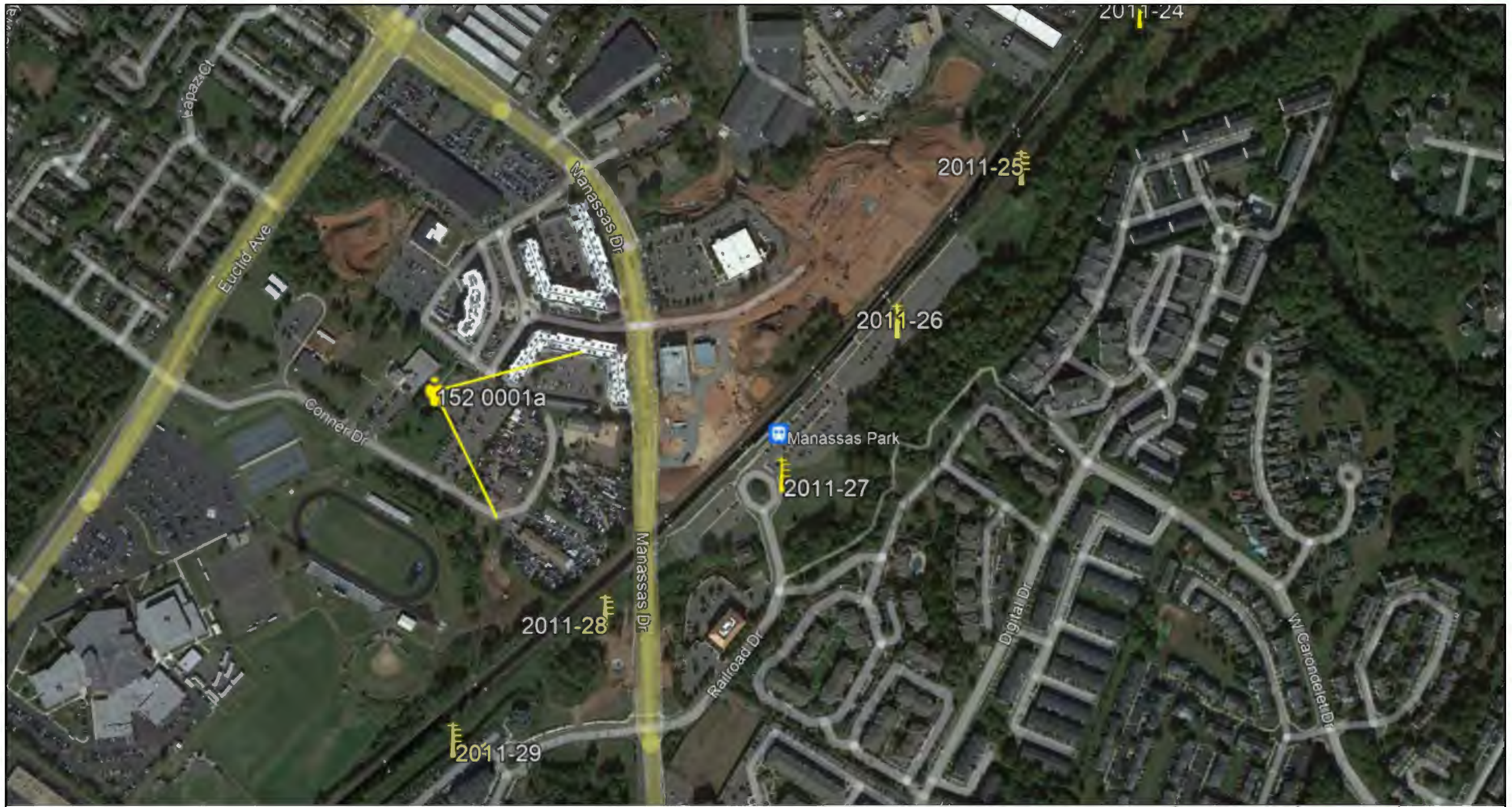

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 152 0001a

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-26	1747	141.5
Str 2011-27	1333	131.5
Str 2011-28	1037	141.5

Figure 5-43: Connor House Simulation 1 – Simulation location, direction of view, and structures modeled from front of home. Source: GTTE, LLC

Figure 5-44: Conner House Simulation 1 – Existing view from front of home. Source: GTTE, LLC

Figure 5-45: Conner House Simulation 1 – Proposed view from front of home – (Visible structures shown as they would appear). Source: GTTE, LLC

Structure	Distance (ft)	Height (ft)
Str 2011-30	1666	111.5
Str 2011-31	2290	116.5
Str 2011-32	2963	131.5
Str 2011-33	3638	131.5

Figure 5-46: Conner House Simulation 2 – Simulation location, direction of view, and structures modeled from side of home. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: 152-0001b	Existing View
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-47: Conner House Simulation 2 – Existing view from front of home. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 152-0001b**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-48: Conner House Simulation 2 – Proposed view from front of home – (Visible structures shown as they would appear). Source: GTTE, LLC

Louisiana Brigade Winter Camp (VDHR ID# 152-5001)

Camp Carondelet, also known as the Louisiana Brigade Winter Camp, was the site of a Confederate military camp during the Civil War. The site is located about one mile south of Bull Run and was used by a brigade of Louisiana soldiers in the Confederate Army during the winter of 1861-1862. Today, the site consists of the remnants of a number of huts and chimney stacks. Due to the site's historical associations as a Civil War encampment, it was listed in the NRHP in 1989.

The Louisiana Brigade Winter Camp consists of a wooded preservation area parcel located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the resource boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. The Louisiana Brigade Winter Camp parcel is set within the boundaries of a local school and park and is therefore open to public and inspection was conducted from the vicinity and throughout the preservation area. The site is located northeast of Manassas within a suburban area east of the central length of the project alignment. The project alignment extends in a generally northeast-southwest orientation through the landscape to the west of the site, roughly 0.75 mile away before it bends to a more east-west orientation to the north of the site, roughly 0.95 mile away.

A site visit to the resource found that the recorded boundaries coincide with a wooded preservation area and park adjacent to the Manassas Park Elementary School. The wooded area is bordered by the school and an athletic field to the south and west and residential neighborhoods to the north and east. Access to the preservation area is by a stairway and walking path from the school property. Due to being bordered by residential development on two sides, visibility of the site is limited to within the school property, although the woods prevent visibility of any of the landscape or earthwork features within.

As part of the project, structures along the project alignment to the west and north will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the site, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the school parking lot and athletic field adjacent to the site found that despite the clearing in this area, none of the existing structures on the project alignment are visible above or through the intervening vegetation and development. Inspection from the walking trails within the preservation area found that the thick woods throughout the site prevent any views beyond the site. The existing structures in the vicinity of the site to be replaced as part of this project range from 120- to 125-feet in height and the proposed replacement structures will likewise range from 120- to 140-feet in height. As such, the heights of the individual proposed structures may vary slightly from their existing configuration, with some remaining in the same height and some increasingly in height slightly. As such, it is anticipated that the intervening topography and vegetation will continue to completely screen visibility of the replacement structures from the Louisiana Brigade Winter Camp site and vicinity. This was confirmed by photo simulation from the field adjacent to

the preservation area that depicts all structures remaining screened beneath the intervening terrain and vegetation. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which does not include any of the existing project structures, nor will it include views of any replacement structures, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose ***no impact*** to Louisiana Brigade Winter Camp.

Figure 5-49 depicts the location of the Louisiana Brigade Winter Camp in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-50 through 5-55 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-56 through 5-58 provide photo simulation from the resource.

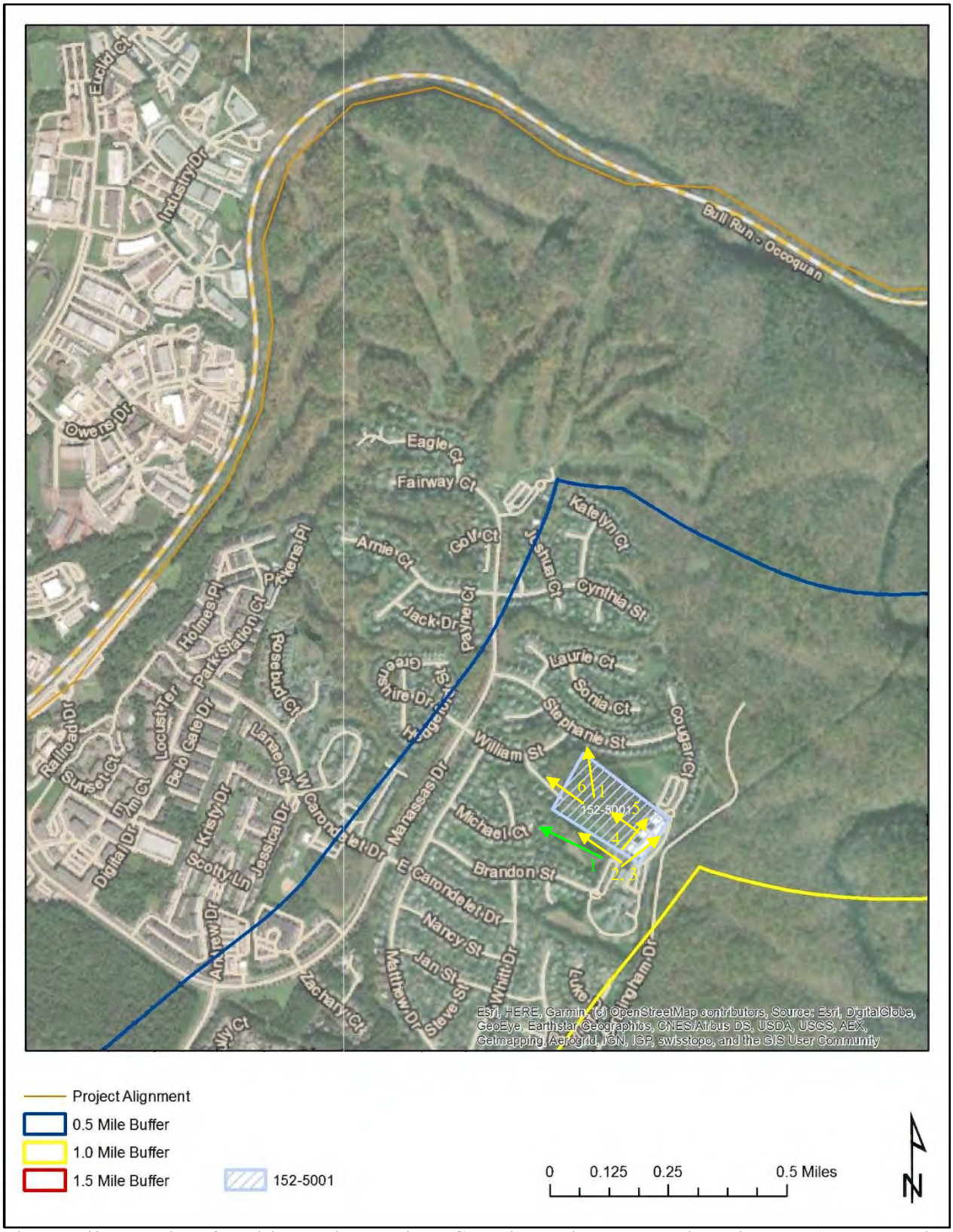

Figure 5-49: Location of Louisiana Brigade Winter Camp in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-50: Photo location 1- Representative view of landscape within preservation area, facing east.

Figure 5-51: Photo location 2- View of setting and modern school adjacent to the preservation area, facing east.

Figure 5-52: Photo location 3- View from recreational field adjacent to wooded preservation area (No project structures visible), facing northwest.

Figure 5-53: Photo location 4- View of entrance to preservation area from school walkway (no project structures visible), facing north.

Figure 5-54: Photo location 5- View from entry to walking trails within preservation area (no project structures visible), facing northwest.

Figure 5-55: Photo location 6- View from walking trail within preservation area (no project structures visible), facing northwest.

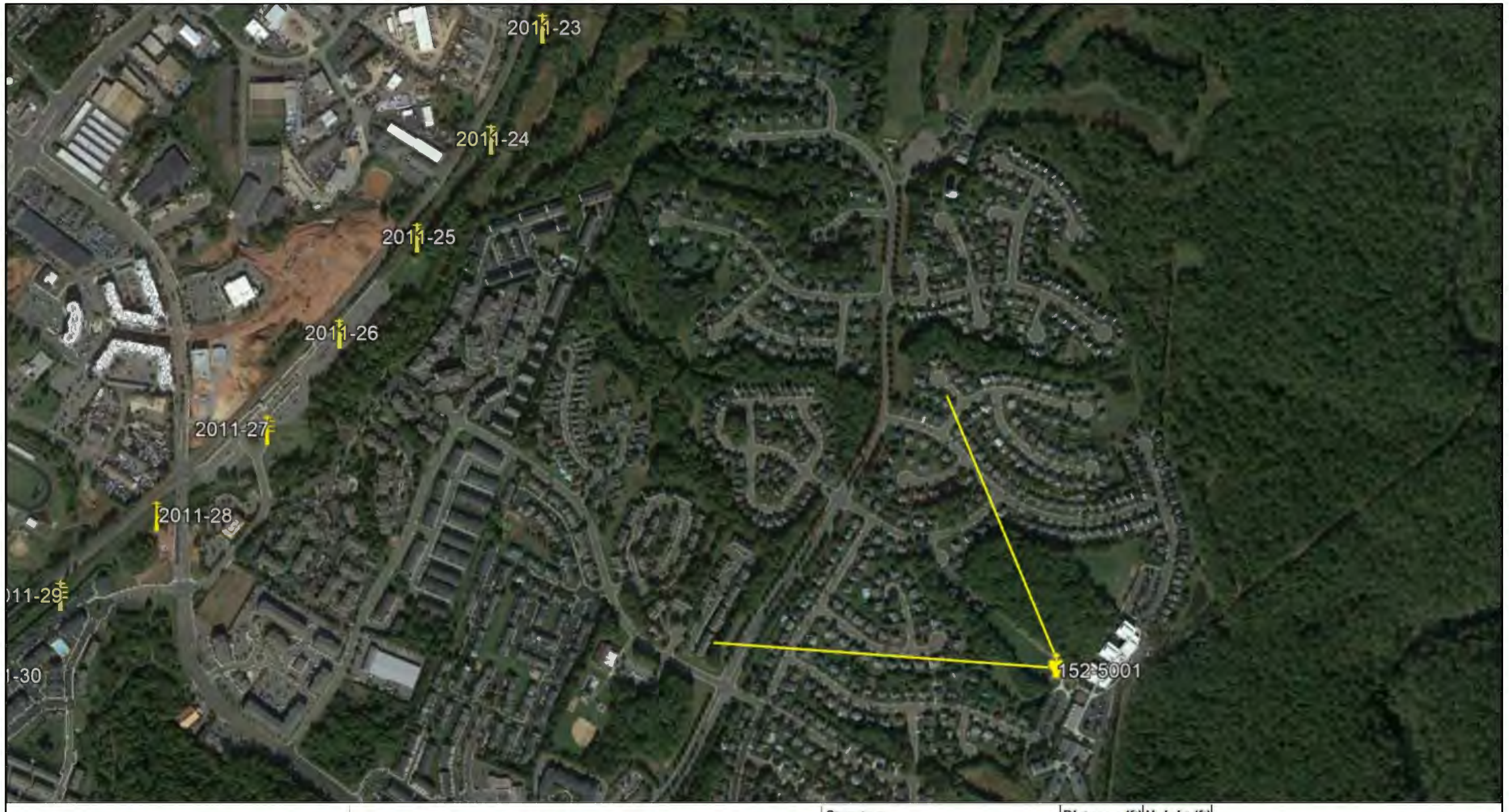

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 152-5001

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-23	4826	121.5
Str 2011-24	4555	126.5
Str 2011-25	4543	131.5
Str 2011-26	4669	141.5
Str 2011-27	4873	131.5
Str 2011-28	5400	141.5
Str 2011-29	5907	141.5
Str 2011-30	6456	111.5

Figure 5-56: Louisiana Brigade Winter Camp Simulation 1 – Simulation location, direction of view, and structures modeled from field adjacent to preservation area. Source: GTTE, LLC

Figure 5-57: Louisiana Brigade Winter Camp Simulation 1 – Existing view from field adjacent to preservation area. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 152-5001

Proposed View
(Location of towers not visible are overlaid with yellow tower icon)

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-58: Louisiana Brigade Winter Camp Simulation 1 – Proposed view from field adjacent to preservation area – (Structures not visible shown in yellow). Source: GTTE, LLC

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Liberia (VDHR ID# 155-0001)

The single-family dwelling known as "Liberia" is a fine example of a Federal-style farmhouse. It was built circa 1825 and is situated on part of the Lower Bull Run Tract, patented by Robert "King" Carter in 1724. The tract was divided over time by his descendants; the Liberia portion, which totaled 1,660 acres, eventually fell to Harriet Bladen Mitchell and her husband William J. Weir, who constructed Liberia. During the Civil War, the home served as headquarters for the Union and Confederate armies in 1861 and 1862. Presidents Abraham Lincoln and Jefferson Davis visited Liberia during the war. After the war, the Weir family returned but was unable to maintain the property; the former plantation was then sold to a prominent family in Manassas, the Portners, who operated Liberia as a dairy farm. The City of Manassas acquired the property in 1986. Today, the house is currently managed by the Manassas Museum System. Due to its historical and architectural significance, the house was individually listed in the Virginia Landmarks Register and the NRHP in 1979-1980.

The Liberia property is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the property and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. The Liberia property is operated by the City of Manassas as a historic site and therefore the grounds are open to the public and were accessible for inspection. The property is located north of the urban core of Manassas within a suburban area west of the central length of the project alignment. The project alignment extends in a generally northeast-southwest orientation through the landscape to the east of the property, roughly 0.74 mile away at its nearest point.

A site visit to the property found that the house is set centrally within a landscaped yard that is bordered by patches of woodland. Although the home is set near Portner Avenue, it faces the opposite direction. Access to the property is from the rear where a parking lot and interpretaive signage is located off Portner Avenue. The home and site are visible from the parking area and a length of street to the rear, but woodland on the property inhibits views from the sides or rear. Likewise, views outward from the property are mostly limited to the rear, although a narrow vantage down a relic driveway to the front allows some distant views in that direction.

As part of the project, structures along the project alignment to the east will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the property, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from throughout the homesite, including the parking area to the rear, the side yard and gardens, and front driveway found that none of the existing structures on the project alignment are visible above or through the intervening vegetation and development. Inspection from Breeden Avenue along the north side of the property revealed more long distant views down the open road corridor, however, the development and vegetation flanking the road prevent visibility of any of the existing structures on the project alignment. The existing structures in the vicinity of the property to be replaced as part of this project range from 110- to 135-feet in height and the

proposed replacement structures will range from 115- to 140-feet in height. As such, there will be a slight increase in height for several of the structures, although some individual structures will remain the same height as the existing. Therefore, it is anticipated that the intervening vegetation and development that currently screen the existing structures will continue to completely screen visibility of the replacement structures from the Liberia property and vicinity. This was confirmed by photo simulation from the front of the house that depicts all structures remaining screened beneath the intervening vegetation and development. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which does not include any of the existing project structures, nor will it include views of any replacement structures, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose ***no impact*** to Liberia.

Figure 5-59 depicts the location of the Liberia property in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-60 through 5-64 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-65 through 5-67 provide photo simulation from the resource.

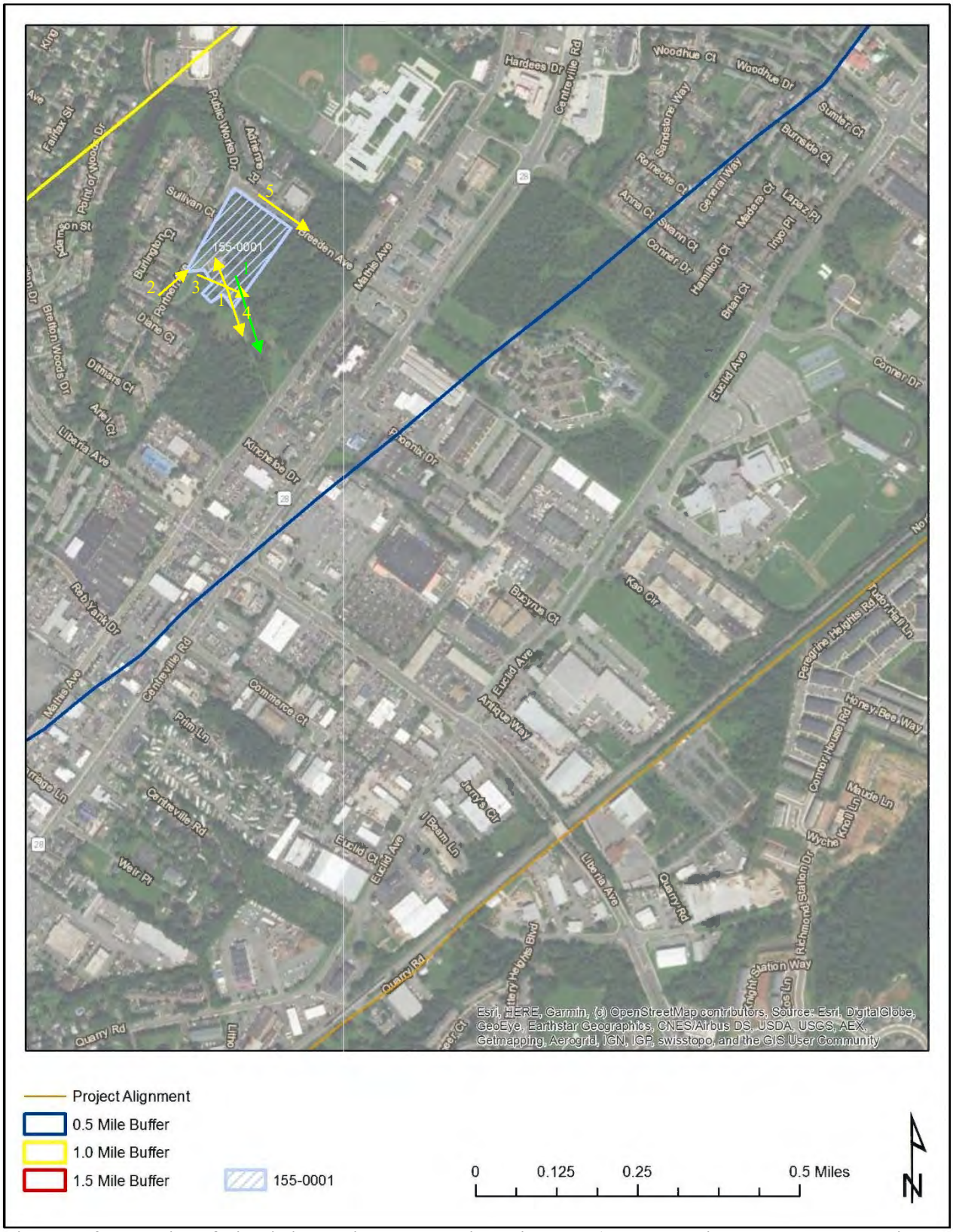

Figure 5-59: Location of Liberia in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-60: Photo location 1- Representative view of Liberia front facade, facing northwest.

Figure 5-61: Photo location 2- View from Portner Avenue to the rear of the house (No project structures visible), facing northeast.

Figure 5-62: Photo location 3- View from side yard of house (No project structures visible), facing east.

Figure 5-63: Photo location 4- View from front of house (no project structures visible), facing southeast.

Figure 5-64: Photo location 5- View from Breeden Avenue along north side of property (No project structures visible), facing southeast.

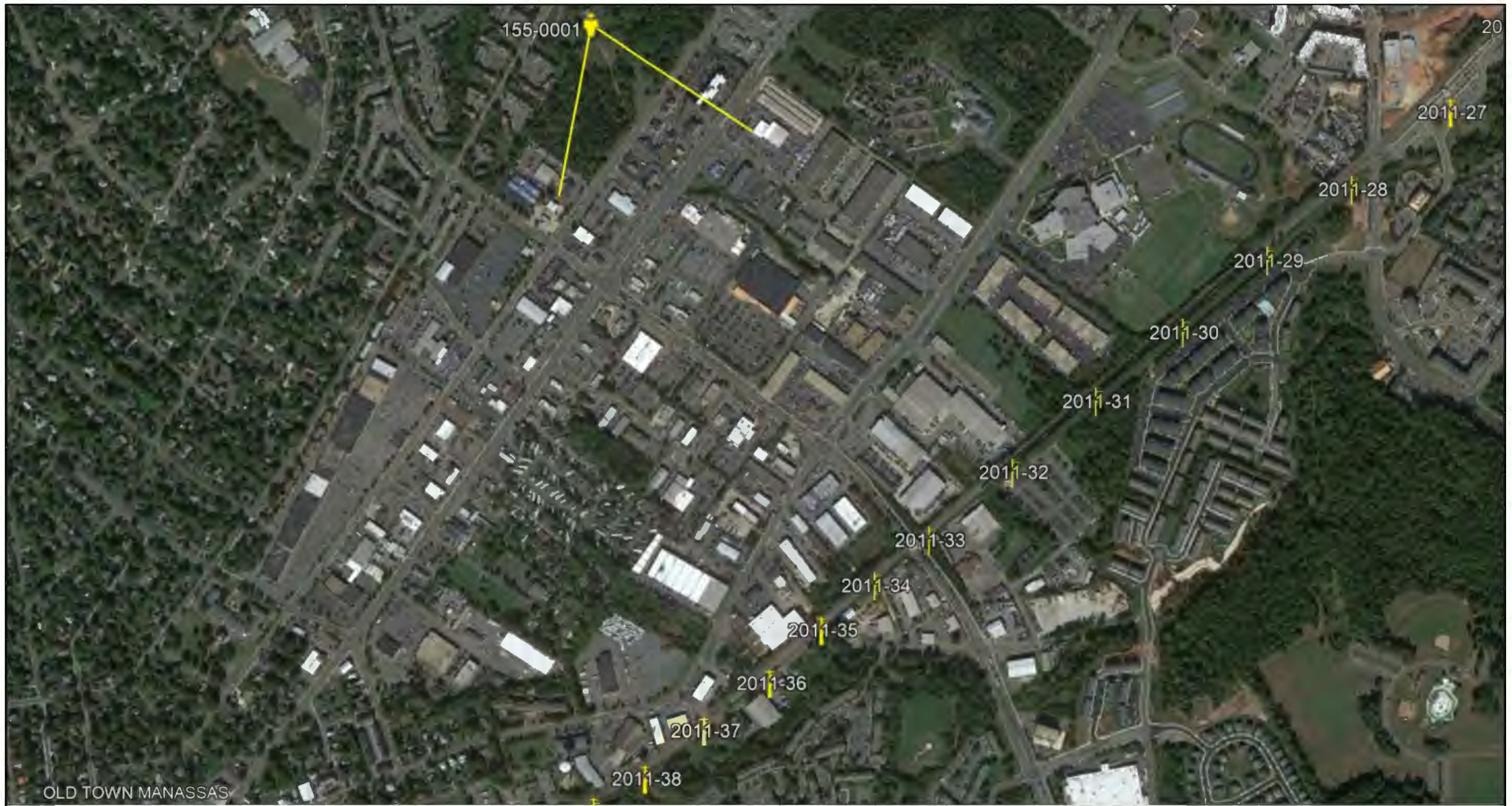

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0001

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-32	4015	130.0
Str 2011-33	4020	130.0
Str 2011-34	4098	125.0
Str 2011-35	4224	115.0
Str 2011-36	4448	115.0
Str 2011-37	4657	120.0
Str 2011-38	4926	120.0

Figure 5-65: Liberia Simulation 1 – Simulation location, direction of view, and structures modeled from front of house. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 155-0001**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-66: Liberia Simulation 1 – Existing view from front of house. Source: GTTE, LLC

Figure 5-67: Liberia Simulation 1 – Proposed view from front of house – (Structures not visible shown in yellow). Source: GTTE, LLC

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Jennie Dean Memorial Site (VDHR ID# 155-0010)

The Manassas Industrial School for Colored Youth was formed by Jennie Dean in 1893 as a vocational school for black youth. The school was dedicated by Frederick Douglass in 1894. After schools in Virginia were desegregated during the 1960s, the building was demolished, and a new school was constructed. The archeological site of the original school is associated with African American history during the late-nineteenth and early-twentieth centuries. In 1938, the school became publicly owned and continued to serve as a school for black students. The site was listed in the Virginia Landmarks Register and in the NRHP in 1994 under Criterion D.

The Jennie Dean Memorial Site is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. The Jennie Dean Memorial Site is now operated as a public park affiliated with the more recent Jennie Dean Elementary School and therefore inspection was performed from throughout the site and in the vicinity. The site is located west of Manassas within a suburban area north of the western end of the project alignment. The project alignment extends in a generally east-west orientation through the landscape just to the north, roughly 0.06 mile away from the site at its nearest point.

A site visit to the resource found that the memorial park is situated to the front of a modern elementary school with associated buildings, parking, and recreational fields surrounding it. The site is accessed by a central walkway and memorial with interpretive footprints of former buildings to each side. The site is bounded by suburban residential neighborhoods to the south and east. The existing project transmission line is just to the north, paralleling a railroad corridor that separates the area from industrial development on the opposite side. Because the site is set atop a slight knoll and mostly open, it is visible from up and down the road bordering it, and views outward from the site are generally long and open, particularly across the cleared recreational fields between it and the project alignment.

As part of the project, structures along the project alignment to the north will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the resource, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from throughout the memorial site found that multiple existing structures are visible as they extend along the edge of the open field bordering the site. Views are generally limited to structures in the immediate vicinity as well as those extending away to the west, while existing structures to the east are screened by vegetation within the neighboring residential area. The existing structures within the vicinity to be replaced as part of this project range from 110- to 125-feet in height and the proposed replacement structures will range from 115- to 130-feet in height. As such, the heights of several structures will increase slightly while others will remain the same, but overall the tallest proposed structure will be just 5 feet taller than the tallest existing structure. As such, it is anticipated visibility will remain similar, with structures that are currently visible

remaining as such, while those that are currently screened will likely remain as such. Because the structures that are currently visible will generally remain the same height or increase in height by 5 feet or less, the change will not be perceptible at the distance they are set. This was confirmed by photo simulation in both directions that reveal the increase in height of the nearest structure is noticeable, however, the change is unapparent for other structures at a further distance and there is no change or increase in overall visibility of the line. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which already includes visibility of a number of structures in the distance, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Jennie Dean Memorial Site.

Figure 5-68 depicts the location of the Jennie Dean Memorial Site in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-69 through 5-74 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-75 through 5-80 provide photo simulation from the resource.

Figure 5-68: Location of the Jennie Dean Memorial Site in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-69: Photo location 1- Representative view of former building interpretive area, facing southeast.

Figure 5-70: Photo location 2- View from memorial walkway (Conductor visible but no project structures visible), facing north.

Figure 5-71: Photo location 3- View from interpretive walkway and memorial (Project structure visible), facing northwest.

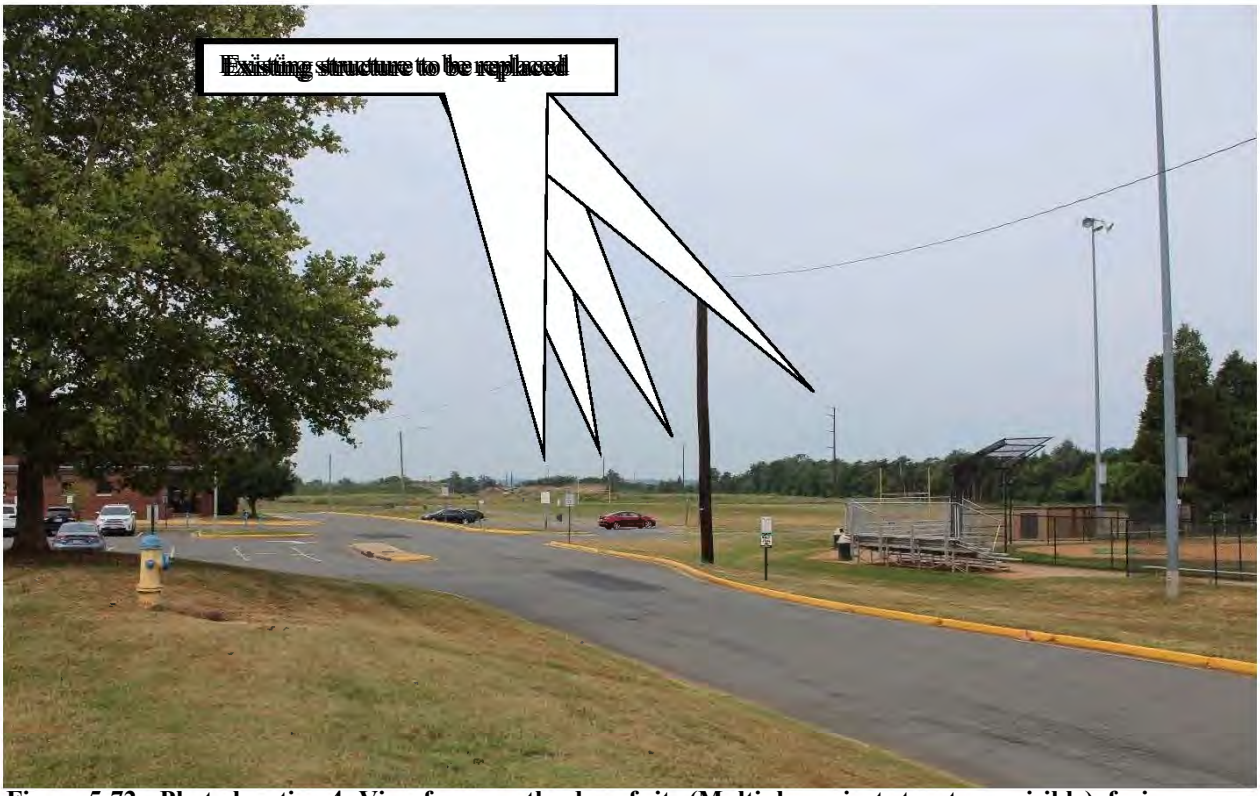

Figure 5-72: Photo location 4- View from north edge of site (Multiple project structures visible), facing northwest.

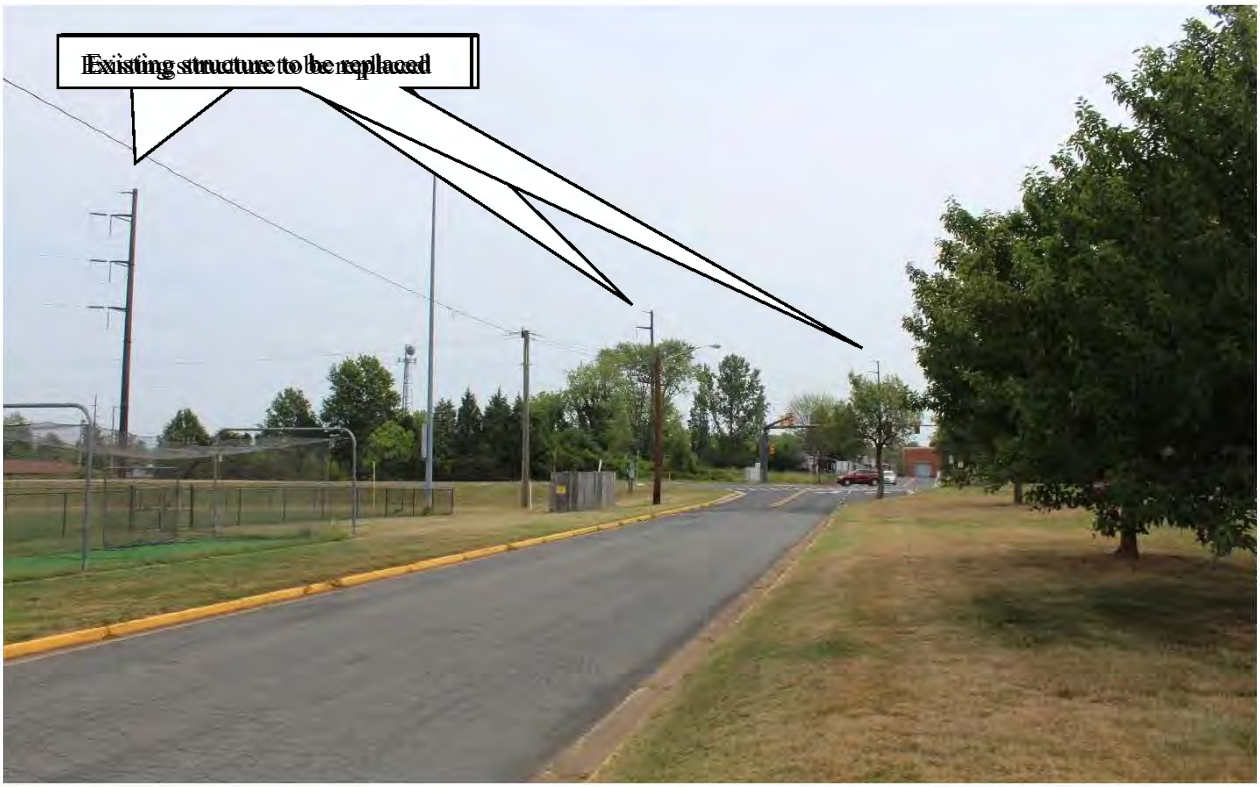

Figure 5-73: Photo location 5- View from north edge of site (Multiple project structures visible), facing northeast.

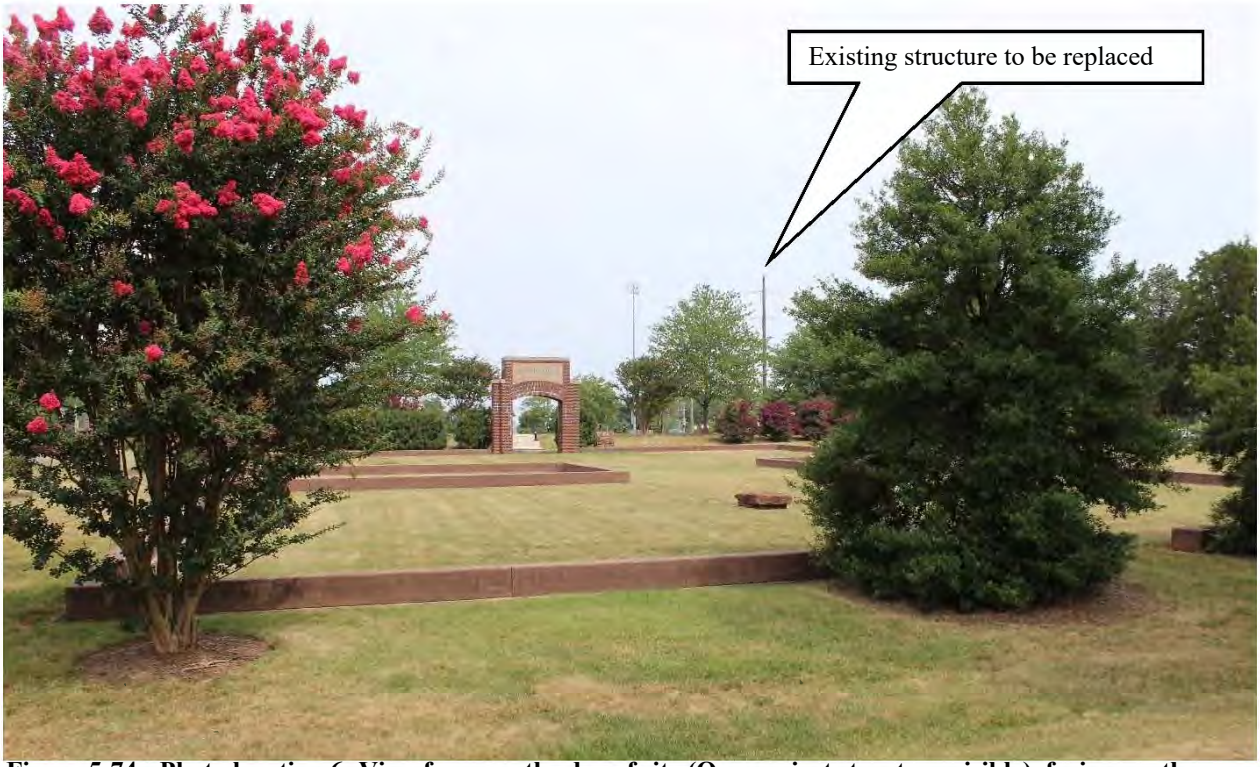

Figure 5-74: Photo location 6- View from south edge of site (One project structure visible), facing north.

Structure	Distance (ft)	Height (ft)
Str 2011-61	649	115.0
Str 2011-62	472	120.0

Figure 5-75: Jennie Dean Memorial Simulation 1 – Simulation location, direction of view, and structures modeled from interpretive area looking north. Source: GTTE, LLC

Figure 5-76: Jennie Dean Memorial Simulation 1 – Existing view from interpretive area looking north. Source: GTTE, LLC

Figure 5-77: Jennie Dean Memorial Simulation 1 – Proposed view from interpretive area looking north – (Visible structures shown as they would appear). Source: GTTE, LLC

Structure	Distance (ft)	Height (ft)
Str 2011-63	644	130.0
Str 2011-64	1360	115.0
Str 2011-65	2143	120.0

Figure 5-78: Jennie Dean Memorial Simulation 2 – Simulation location, direction of view, and structures modeled from interpretive area looking west. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: Jennie Dean Memorial W	Existing View
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-79: Jennie Dean Memorial Simulation 2 – Existing view from interpretive area looking west. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: Jennie Dean Memorial W**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-80: Jennie Dean Memorial Simulation 2 – Proposed view from interpretive area looking west – (Structures not visible shown in yellow). Source: GTTE, LLC

Annaburg (VDHR ID# 155-0021)

The single-family dwelling known as "Annaburg" is a fine example of a Classical Revival house built between 1892-1894. In 1892, Robert Portner, a wealthy landowner and entrepreneur from Alexandria, Virginia, purchased land in Manassas for use as a summer home. Portner built Annaburg on his land in 1892, which was completed by 1894. He continued to buy land over the next eight years, increasing his original 191-acre property to 1,200 acres. Annaburg soon became a luxurious estate, with elaborate grounds, a large park, ponds, gardens, and a pool. The thirty-five-room house had electrical lighting and mechanical air conditioning (invented by Portner in 1878). Following the death of Robert Portner in 1906, the estate became a summer home for his family but eventually fell into disuse by 1929. The house was abandoned until 1947, when it was sold to the Breeden family. A number of subdivisions were created from the outlying land during the mid-twentieth century; by 1961, the house tract consisted of 7.4 acres. Today, additions have been added to the original house and a number of original outbuildings have been demolished, however, it was listed in the NRHP under criterion C in 2022 to recognize its architectural significance.

The Annaburg property is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the property and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. The Annaburg property was operated by the City of Manassas as a park and while it is now closed, the grounds remain open and was accessible for inspection. The property is located within the urban core of Manassas north of the central length of the project alignment. The project alignment extends in a generally east-west orientation through the landscape to the south side of the property, roughly 0.28 mile away at its nearest point.

A site visit to the property found that the house is set centrally within a landscaped yard that occupies roughly half of a city block. The home faces Maple Street to the southwest and is flanked by large grassy side yards. Set just to the rear is a large assisted living home complex and the streets bordering the property are lined with single-family homes. Due to the dense development pattern in the area, visibility of the property is limited to the streets within a block away. Likewise, views outward from the property are mostly limited to the adjacent blocks.

As part of the project, structures along the project alignment to the south will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the property, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from throughout the homesite and property found that the existing structures are generally screened by the intervening development and vegetation, although a gap in the trees behind a house directly across the street allows visibility of one existing structure. The existing structures in the vicinity of the property to be replaced as part of this project range from 95- to 132-feet in height and the proposed replacement structures will range from 105- to 125-feet in height. The one existing structure currently visible is 116-feet tall and the replacement will be 115-

feet tall. As such, there will be a slight increase in height for several of the structures, while others will remain the same height as the existing, or be decreased in height. The one structure that is currently visible will be decreased in height, and overall, the tallest replacement structure will be 7 feet shorter than the existing tallest structure. Therefore, it is anticipated that the intervening vegetation and development that currently screen the majority of existing structures will continue to do so from the Annaburg property and vicinity, while visibility of the structure that can currently be seen will diminish. This was confirmed by photo simulation from the property in two directions that depicts all structures will remain screened beneath the intervening vegetation and development. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to Annaburg.

Figure 5-81 depicts the location of the Annaburg property in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-82 through 5-89 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-90 through 5-95 provide photo simulation from the resource.

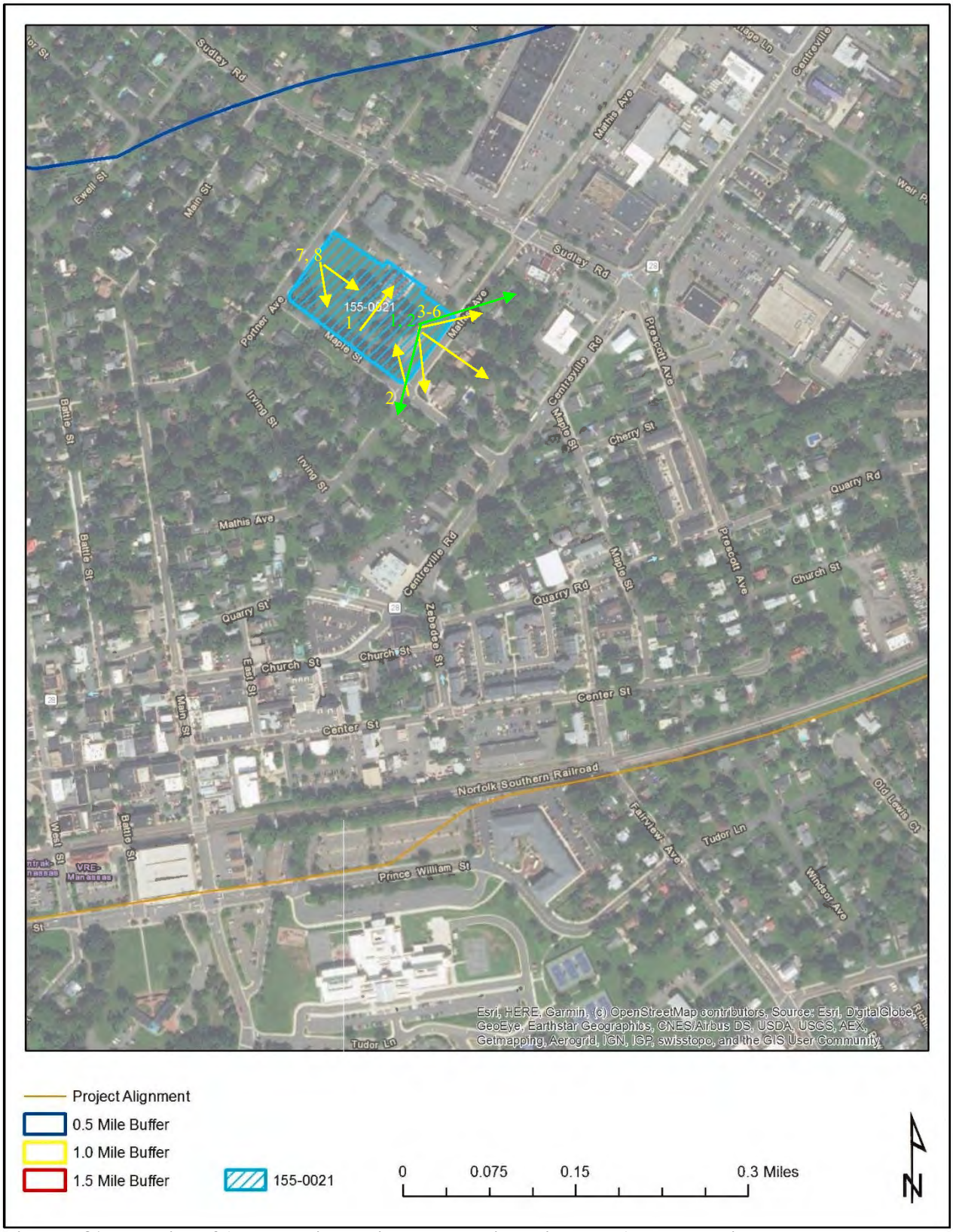

Figure 5-81: Location of Annaburg in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-82: Photo location 1- Representative view of Annaburg front facade, facing northeast.

Figure 5-83: Photo location 2- View of property setting from intersection of Maple Street and Mathis Avenue, facing north.

Figure 5-84: Photo location 3- View from southeast side of property (No project structures visible), facing east.

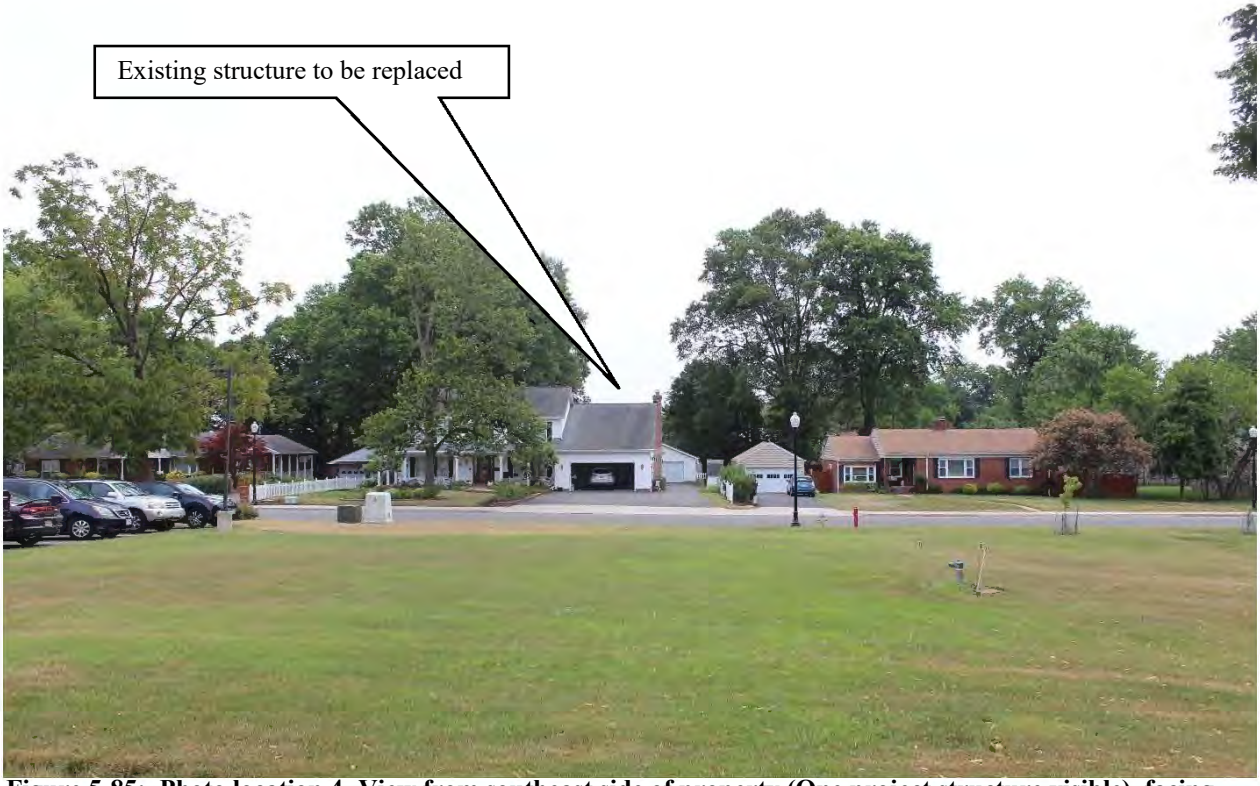

Figure 5-85: Photo location 4- View from southeast side of property (One project structure visible), facing southeast.

Figure 5-86: Photo location 5- Detail of view from southeast side of property (One project structure visible), facing southeast.

Figure 5-87: Photo location 6- View from southeast side of property (No project structures visible), facing south.

Figure 5-88: Photo location 7- View from northwest side of property (No project structures visible), facing southeast.

Figure 5-89: Photo location 8- View from northwest side of property (No project structures visible), facing south.

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Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0021 A

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-30	6553	110.0
Str 2011-31	5868	115.0
Str 2011-32	5216	130.0
Str 2011-33	4590	130.0
Str 2011-34	4201	125.0
Str 2011-35	3832	115.0
Str 2011-36	3497	115.0
Str 2011-37	3103	120.0
Str 2011-38	2798	120.0
Str 2011-39	2555	115.0
Str 2011-40	2326	125.0

Figure 5-90: Annaburg Simulation 1 – Simulation location, direction of view, and structures modeled from side yard to northeast. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 155-0021 A**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-91: Annaburg Simulation 1 – Existing view from side yard to northeast. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 155-0021 A**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-92: Annaburg Simulation 1 – Proposed view from side yard to northeast – (Structures not visible shown in yellow). Source: GTTE, LLC

Structure	Distance (ft)	Height (ft)
Str 2011-41	2146	115.0
Str 2011-42	1981	115.0
Str 2011-43	1883	105.0
Str 2011-44	1816	125.0
Str 2011-45	1787	105.0
Str 2011-46	1798	105.0
Str 2011-46A	1981	100.0
Str 2011-47	2011	115.0
Str 2011-48	2100	115.0

Figure 5-93: Annaburg Simulation 2 – Simulation location, direction of view, and structures modeled from side yard to south. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: 155-0021 B	Existing View	
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.	

Figure 5-94: Annaburg Simulation 2 – Existing view from side yard to south. Source: GTTE, LLC

Figure 5-95: Annaburg Simulation 2 – Proposed view from side yard to south – (Structures not visible shown in yellow). Source: GTTE, LLC

Old Manassas Water Tower (VDHR ID# 155-0141)

The Old Manassas Water Tower, which stands on the north side of the town of Manassas, was constructed in 1914. The construction of a water tower followed the installation of the town's first water, sewer, and electrical systems in 1912-13. The water tower was built by the R.D. Cole Manufacturing Company from Georgia. It is located near one of the town's six early wells. The creation of a water system for Manassas was done in response to the town's rapid growth during the late nineteenth century; at this time, citizens began to call for amenities that were available in other large towns. Fire protection quickly became a concern after a large fire destroyed or damaged over thirty buildings in 1905. By 1913, the Manassas Town Council voted in favor of new utility systems that would improve life in town. Due to its association with the modernization of Manassas as a growing city during the late-nineteenth and early-twentieth centuries, the water tower was listed in the NRHP in 2016.

The Old Manassas Water Tower is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the property and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. The Old Manassas Water Tower is sited on a small grassy plot bordered by municipal parking lots and therefore is open to the public and was accessible for inspection. The property is located within the urban core of Manassas north of the central length of the project alignment. The project alignment extends in a generally east-west orientation through the landscape to the south of the property, roughly 0.16 mile away at its nearest point.

A site visit to the property found that the tower is sited on a small grassy plot bordered by parking lots with dense commercial and residential development on the surrounding blocks. Because of the height of the water tower, it is visible from a wide area, however, views outward from ground-level tend to be short and blocked by adjacent development.

As part of the project, structures along the project alignment to the south will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the property, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the base of the water tower found that none of the existing structures on the project alignment are visible above or through the intervening development and vegetation. The existing structures in the vicinity of the property to be replaced as part of this project range from 80- to 114-feet in height and the proposed replacement structures will range from 95- to 125-feet in height. As such, there will be an overall increase in height for most of the structures with the tallest replacement structure being roughly 11 feet more than the tallest existing structure. Despite the increase, it is anticipated that the intervening vegetation and development that currently screen the existing structures will continue to provide nearly complete screening of the replacement structures from the Old Manassas Water Tower and vicinity, although there is the chance that individual structures may rise just above these features from discrete vantage points. This was confirmed by photo simulation from the base that revealed all proposed structures will remain just below the

treeline and building tops from that location, however, it can be assumed that a slight shift in vantage may allow visibility of discrete individual structures. Therefore, the project may result in the chance of limited visibility of transmission line structures where there is currently none, however, will not introduce any substantial change in setting or viewshed of or from the resource which already includes a wide variety of other nonhistoric infrastructure and development. It is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Old Manassas Water Tower.

Figure 5-96 depicts the location of the Old Manassas Water Tower property in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-97 through 5-100 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-101 through 5-103 provide photo simulation from the resource.

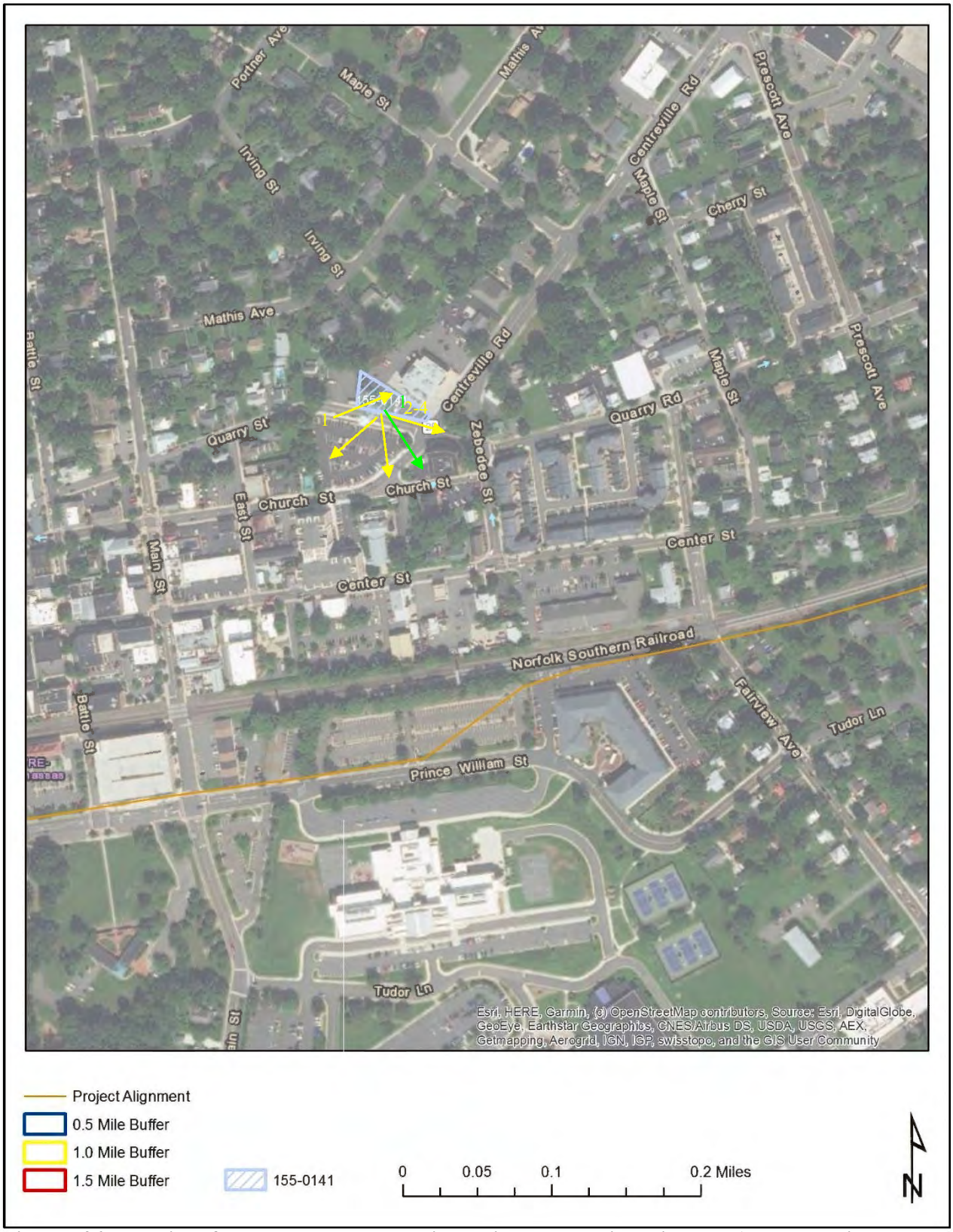

Figure 5-96: Location of Manassas Water Tower in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-97: Photo location 1- Representative view of water tower and setting, facing northeast.

Figure 5-98: Photo location 2- View from base of water tower (No project structures visible), facing southwest.

Figure 5-99: Photo location 3- View from base of water tower (No project structures visible), facing south.

Figure 5-100: Photo location 4- View from base of water tower (no project structures visible), facing northeast.

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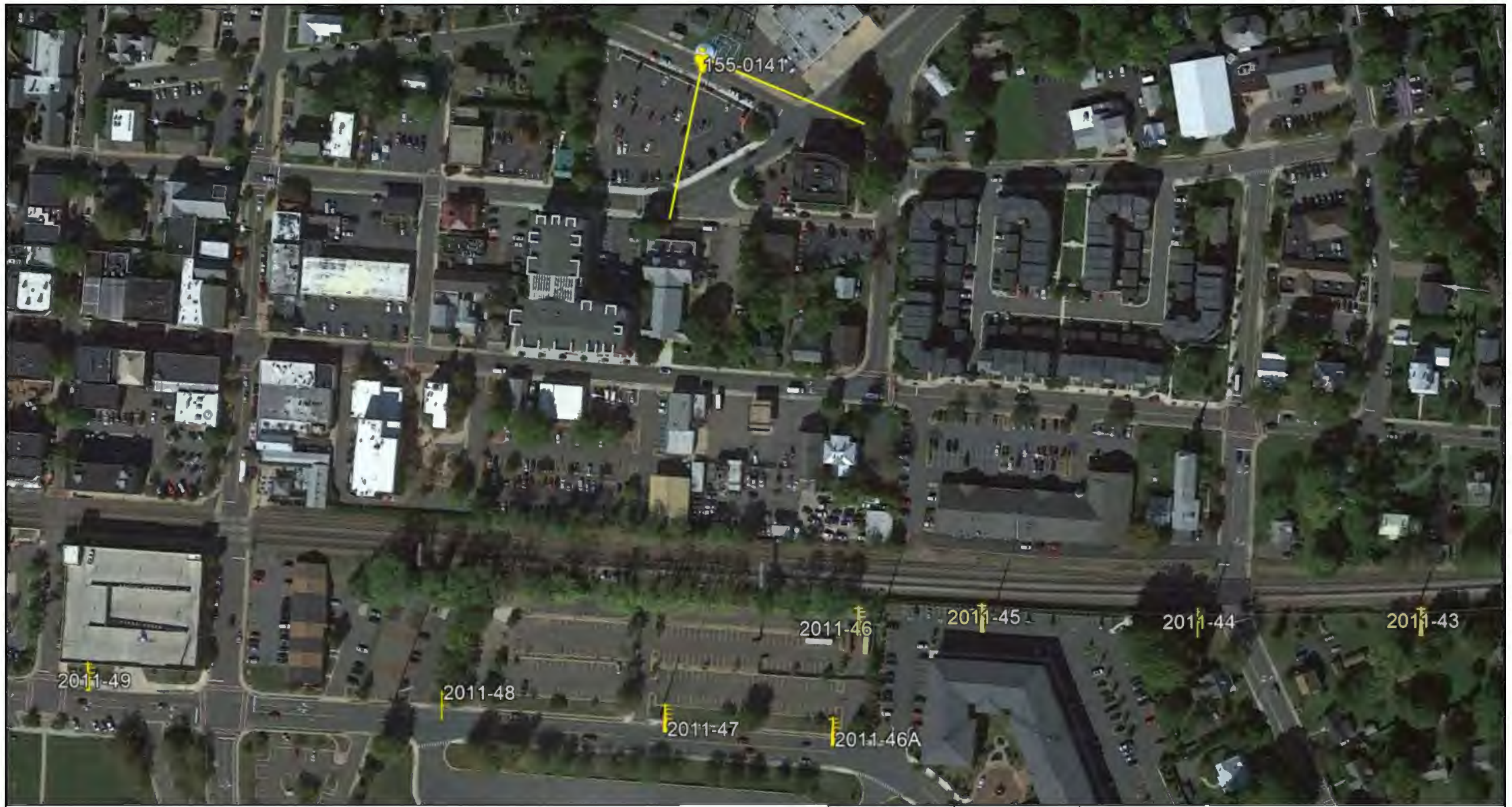

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0141

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-42	1579	115.0
Str 2011-43	1354	105.0
Str 2011-44	1112	125.0
Str 2011-45	924	105.0
Str 2011-46	851	105.0
Str 2011-46A	1012	100.0
Str 2011-47	979	115.0

Figure 5-101: Old Manassas Water Tower Simulation 1 – Simulation location, direction of view, and structures modeled from base of tower. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 155-0141**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-102: Old Manassas Water Tower Simulation 1 – Existing view from base of tower. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email: [redacted]
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild | **Location: 155-0141** | **Proposed View** (Location of towers not visible are overlaid with yellow tower icon)

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-103: Old Manassas Water Tower Simulation 1 – Proposed view from base of tower – (Structures not visible shown in yellow). Source: GTTE, LLC

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Manassas Historic District (VDHR ID# 155-0161)

The Manassas Historic District encompasses mostly late-nineteenth and early-twentieth century resources that largely form the core of the city. It includes most of the downtown commercial area and adjacent historical residential neighborhoods. Incorporated as a town in 1873, Manassas grew from a war-torn, railroad junction to the main transportation, commercial, and governmental hub of Prince William County. After the establishment of the Orange & Alexandria Railroad and its connection with the Manassas Gap Railroad in the 1850s, the junction became an ideal place for a town. The location of the county seat and railroad at Manassas encouraged the construction of late-nineteenth and early-twentieth century homes for government and railroad employees. The styles exhibited in the district include Italianate, Second Empire, Queen Anne, Craftsman, and American Foursquare, which demonstrate the evolution of Manassas over time. The railroad continued to prove important to the town's growth during the early twentieth century. The Manassas Historic District was listed in the NRHP and was designated as a Virginia Main Street community in 1988.

The Manassas Historic District occupies a large area and collection of properties located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the district boundaries and photographs were taken to document viewshed with emphasis on views from the district towards the project alignment. Field inspection was conducted from public ROW and other accessible locations throughout the district. The district occupies much of the urban core of Manassas which is set immediately north of the central length of the project alignment. The project alignment extends in a generally east-west orientation along the southern edge of the historic district, with a short length crossing directly through the district.

A site visit to the district found that it encompasses a densely developed urban area comprised of a commercial core bordered by residential areas. Development is primarily along a gridded pattern of streets and blocks oriented generally along a railroad corridor that serves as the southern boundary for the district. Views within and out of the district are long and wide down the straight street corridors, however, are generally limited to the immediate blocks at oblique angles of view.

As part of the project, structures along the project alignment to the south will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. While the project ROW borders a longer length of the historic district, just one individual structure is located within the district boundaries. As a result of the removal and installation of the replacement structure, there will be a direct impact to the resource, however, the level of impact will be minimal. Because some of the structures on the project alignment in the vicinity will be increased in height, the project also has the potential to introduce indirect or visual impacts.

Inspection from properties and streetscapes throughout the district found that in general, the existing structures can be seen from a variety of vantage points within the commercial area in closer proximity to the project alignment, while they become screened by intervening development and vegetation at further distances, including from the residential areas. Visibility is most prevalent from Center Street and the perpendicular streets where they cross the railroad corridor, as well as from the railroad station itself. From these areas, one or more structures may be visible down the

street corridor or through breaks in buildings. East of the downtown core the development along Center Street becomes less dense which permits increased visibility of often multiple structures at a time. Streets and blocks further within the district tend to be lined with more vegetation that screens views in the direction of the alignment and thereby visibility is limited to individual structures from discrete vantage points. Inspection from the residential portions of the district found that the intervening development and vegetation completely inhibits views of the existing structures. The existing structures within the vicinity to be replaced as part of this project range from 60- to 132-feet in height and the proposed replacement structures will range from 80- to 125-feet in height. As such, the heights of individual proposed structures will be generally more consistent, with some increasingly slightly, some remaining the same, and some decreasing in height from their current configuration with the tallest replacement structure to be 7 feet shorter than the existing tallest structure. As such, it is anticipated that visibility will remain similar from the commercial area, with structures that are currently visible remaining as such, although varying slightly by individual structure. Meanwhile, the intervening vegetation and development will continue to screen visibility of those structures that are not currently visible from the residential areas at further distances in the district. Because the change in height of individual structures will be minimal and the tallest structure will be decreased in height, the overall change will not likely be perceptible. This was confirmed by photo simulation from throughout the district that reveals the structures currently visible from close proximity will generally appear similar to the existing structures while those screened by intervening development and vegetation will remain as such, with no overall change in visibility. Therefore, the project will not introduce any substantial change in setting or viewshed of or from the district which already includes visibility of a number of structures from a variety of vantages, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Manassas Historic District.

Figure 5-104 depicts the location of the Manassas Historic District in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-105 through 5-122 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-123 through 5-143 provide photo simulation from the resource.

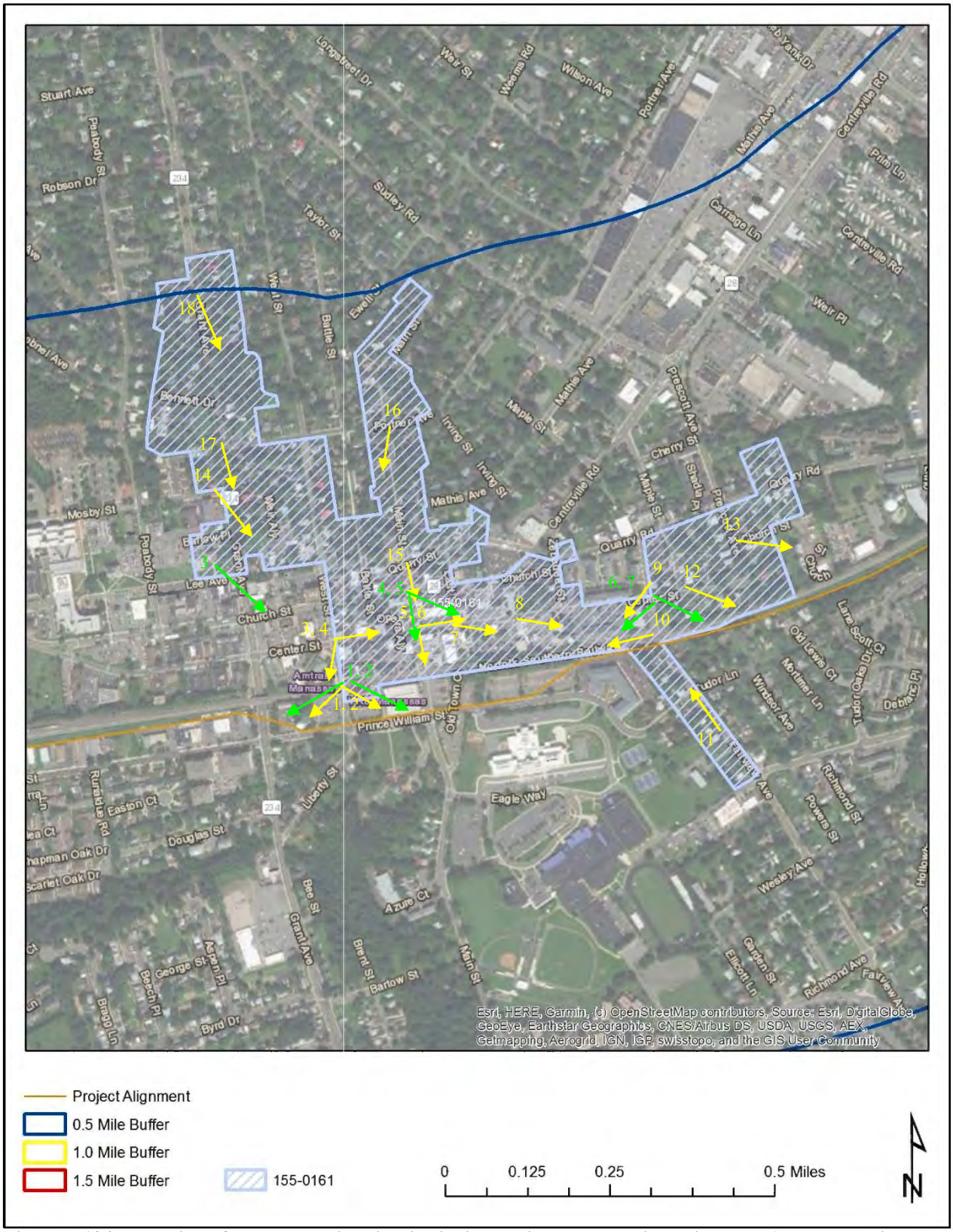

Figure 5-104: Location of Manassas Historic District in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-105: Photo location 1- View from Manassas Railroad Station (Project structure visible), facing southeast.

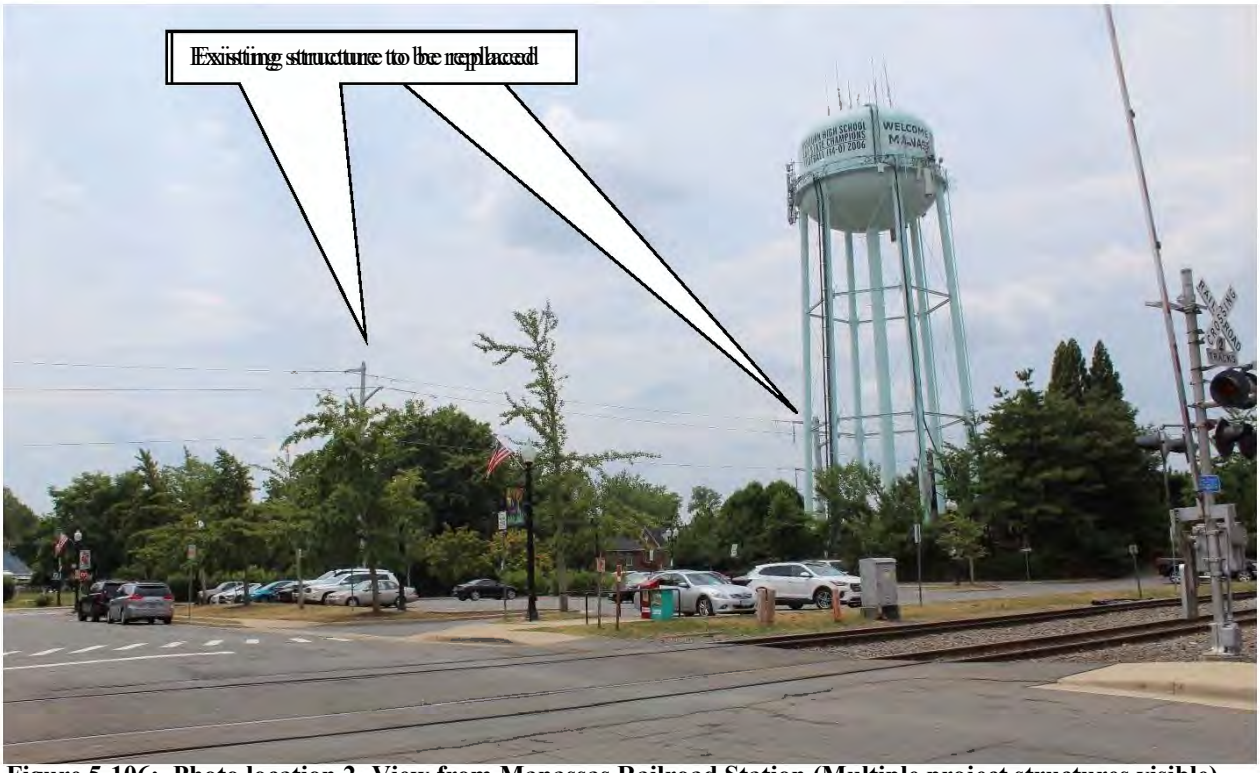

Figure 5-106: Photo location 2- View from Manassas Railroad Station (Multiple project structures visible), facing southwest.

Figure 5-107: Photo location 3- View from West Street at Center Street (Project structure visible), facing south.

Figure 5-108: Photo location 4- View from West Street at Center Street (No project structures visible), facing southeast.

Figure 5-109: Photo location 5- View from Center Street at Main Street (Project structure visible), facing east.

Figure 5-110: Photo location 6- View from Center Street at Main Street (Project structure visible), facing south.

Figure 5-111: Photo location 7- View from Center Street at East Street (Multiple project structures visible), facing east.

Figure 5-112: Photo location 8- View from Center Street east of East Street (Multiple project structures visible), facing southeast.

Figure 5-113: Photo location 9- View from Fairview Avenue at Center Street (Multiple project structures visible), facing south.

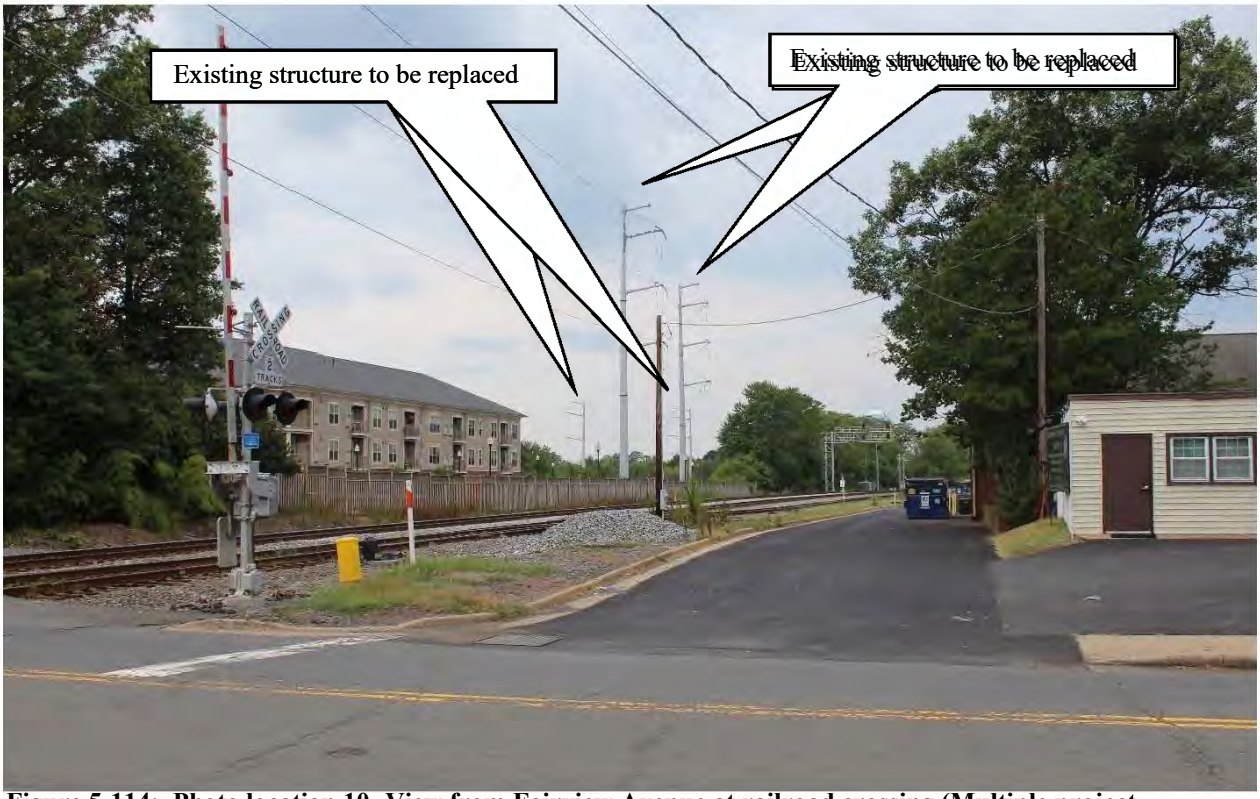

Figure 5-114: Photo location 10- View from Fairview Avenue at railroad crossing (Multiple project structures visible), facing west.

Figure 5-115: Photo location 11- View from Fairview Avenue south of railroad (Project structure visible), facing north.

Figure 5-116: Photo location 12- View from Center Street at Maple Street (Project structure visible), facing east.

Figure 5-117: Photo location 13- View from Prescott Avenue at Church Street (Multiple project structures visible), facing south.

Figure 5-118: Photo location 14- View from Grant Avenue at Mosby Street (Project structure visible), facing south.

Figure 5-119: Photo location 15 - View from Main Street at Church Street (Project structure visible), facing south.

Figure 5-120: Photo location 16 - View from Portner Avenue at Main Street (No project structures visible), facing south.

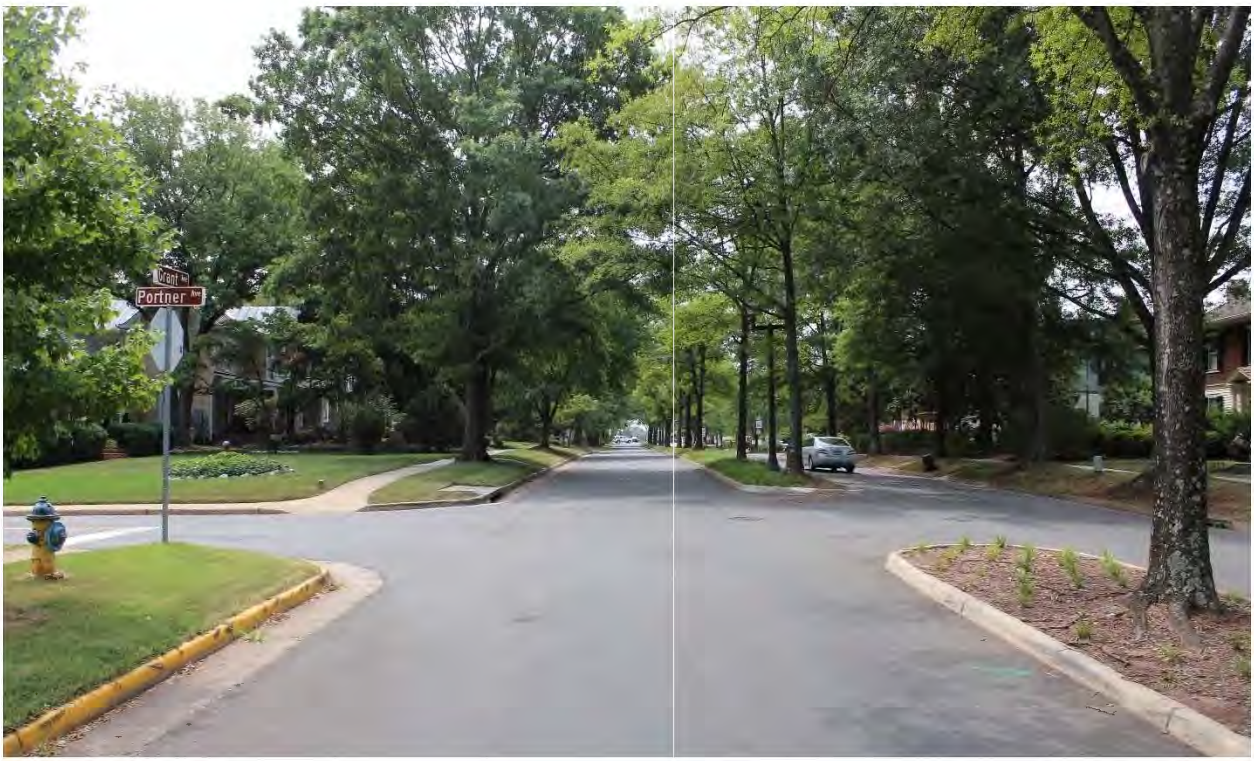

Figure 5-121: Photo location 17- View from Grant Avenue at Portner Avenue (No project structures visible), facing south.

Figure 5-122: Photo location 18- View from Grant Avenue at north edge of historic district (No project structures visible), facing south.

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0161 2A

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-46	1463	105.0
Str 2011-46A	1454	101.5
Str 2011-47	1217	115.0
Str 2011-48	900	100.0
Str 2011-49	391	95.0

Figure 5-123: Manassas Historic District Simulation 1 – Simulation location, direction of view, and structures modeled Manassas Rail Depot looking east. Source: GTTE, LLC

Figure 5-124: Manassas Historic District Simulation 1 – Existing view from Manassas Rail Depot looking east. Source: GTTE, LLC

Figure 5-125: Manassas Historic District Simulation 1 – Proposed view from Manassas Rail Depot looking east – (Visible structure shown as it would appear. Structures not visible shown in yellow). Source: GTTE, LLC

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0161 2B

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-51	1145	80.0
Str 2011-52	1214	0.0
Str 2011-53	1346	105.0
Str 2011-54	1775	120.0
Str 2011-55	2123	125.0
Str 2011-56	2641	120.0
Str 2011-57	2986	125.0
Str 2011-58	3358	120.0

Figure 5-126: Manassas Historic District Simulation 2 – Simulation location, direction of view, and structures modeled Manassas Rail Depot looking west. Source: GTTE, LLC

Figure 5-127: Manassas Historic District Simulation 2 – Existing view from Manassas Rail Depot looking west. Source: GTTE, LLC

Figure 5-128: Manassas Historic District Simulation 2 – Proposed view from Manassas Rail Depot looking west – (Visible structures shown as they would appear. Structures not visible shown in yellow). Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 076-5080 A

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-45	2461	105.0
Str 2011-46	2300	105.0
Str 2011-46A	2358	101.5
Str 2011-47	2149	115.0
Str 2011-48	1873	115.0
Str 2011-49	1469	95.0
Str 2011-50	1250	80.0
Str 2011-51	1160	80.0

Figure 5-129: Manassas Historic District Simulation 3 – Simulation location, direction of view, and structures modeled from Manassas Courthouse. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 076-5080 A**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-130: Manassas Historic District Simulation 3 – Existing view from Manassas Courthouse. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 076-5080 A**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-131: Manassas Historic District Simulation 3 – Proposed view from Manassas Courthouse – (Structures not visible shown in yellow). Source: GTTE, LLC

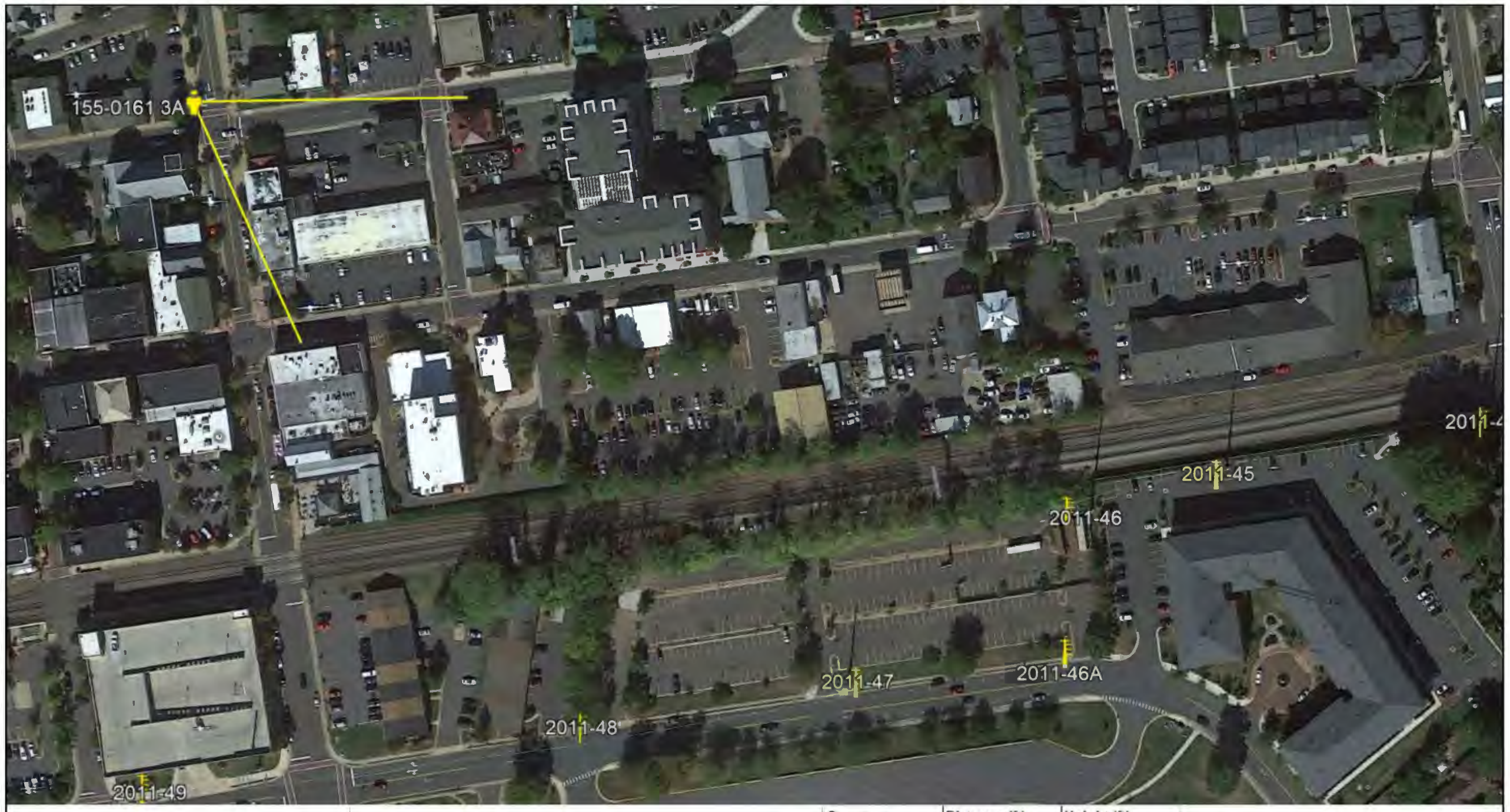

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0161 3a

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-42	2104	115.0
Str 2011-43	1844	105.0
Str 2011-44	1542	125.0
Str 2011-45	1265	105.0
Str 2011-46	1109	105.0
Str 2011-46A	1205	100.0
Str 2011-47	1043	115.0
Str 2011-48	881	100.0

Figure 5-132: Manassas Historic District Simulation 4 – Simulation location, direction of view, and structures modeled from intersection of Main and Church Streets. Source: GTTE, LLC

Figure 5-133: Manassas Historic District Simulation 4 – Existing view from intersection of Main and Church Streets. Source: GTTE, LLC

Figure 5-134: Manassas Historic District Simulation 4 – Proposed view from intersection of Main and Church Streets – (Visible structure shown as it would appear. Structures not visible shown in yellow). Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0161 3B

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-48	880	115.0
Str 2011-49	835	95.0
Str 2011-50	1015	80.0
Str 2011-51	1145	80.0

Figure 5-135: Manassas Historic District Simulation 5 – Simulation location, direction of view, and structures modeled from intersection of Main and Church Streets. Source: GTTE, LLC

Figure 5-136: Manassas Historic District Simulation 5 – Existing view from intersection of Main and Church Streets. Source: GTTE, LLC

Figure 5-137: Manassas Historic District Simulation 5 – Proposed view from intersection of Main and Church Streets – (Visible structure shown as it would appear. Structures not visible shown in yellow). Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0161 1 A

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-40	1411	125.0
Str 2011-41	1037	110.0
Str 2011-42	683	115.0
Str 2011-43	446	100.0

Figure 5-138: Manassas Historic District Simulation 6 – Simulation location, direction of view, and structures modeled from intersection of Center Street and Fairview Avenue. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: 155 0161 1 A	Existing View

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-139: Manassas Historic District Simulation 6 – Existing view from intersection of Center Street and Fairview Avenue. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild

Location: 155 0161 1 A

Proposed View
(Location of towers not visible are overlaid with yellow tower icon)

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-140: Manassas Historic District Simulation 6 – Proposed view from intersection of Center Street and Fairview Avenue – (Visible structures shown as they would appear). Source: GTTE, LLC

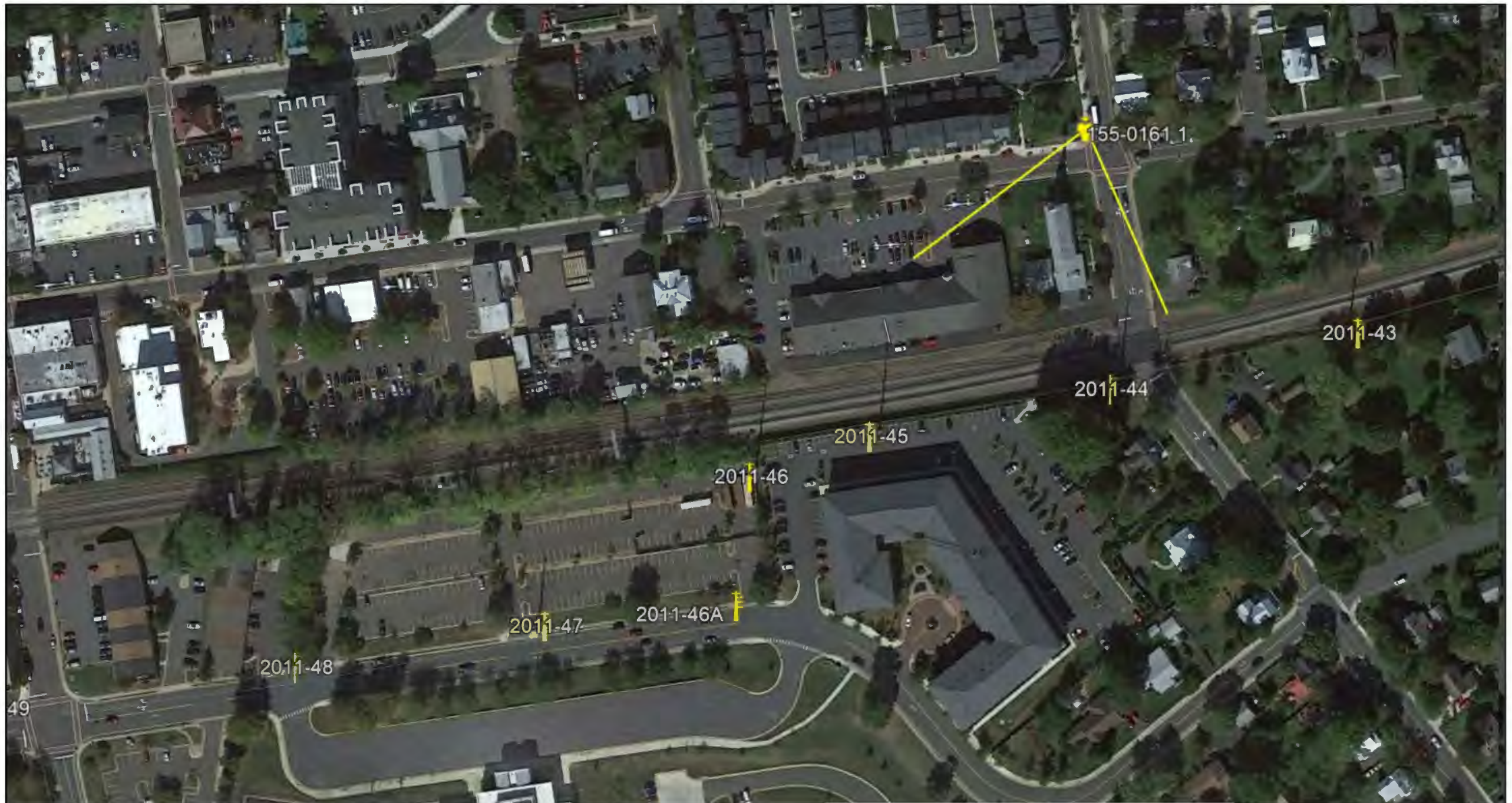

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0161 1 B

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-44	343	120.0
Str 2011-45	491	100.0
Str 2011-46	632	105.0
Str 2011-46A	765	101.5

Figure 5-141: Manassas Historic District Simulation 7 – Simulation location, direction of view, and structures modeled from intersection of Center Street and Fairview Avenue. Source: GTTE, LLC

Figure 5-142: Manassas Historic District Simulation 7 – Existing view from intersection of Center Street and Fairview Avenue. Source: GTTE, LLC

Figure 5-143: Manassas Historic District Simulation 7 – Proposed view from intersection of Center Street and Fairview Avenue – (Visible structures shown as they would appear). Source: GTTE, LLC

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Mayfield Fortification, Liberia Avenue & Quarry Road (VDHR ID# 155-5002)

The Mayfield Fortification is a Civil War-era fortification constructed in 1861. It was used by Confederate troops to guard the Orange & Alexandria Railroad, which played a crucial role in the First and Second Battles of Manassas in 1861 and 1862. The site consists of a fortification wall and a large depression. Of the original forts that were used during the war to guard Manassas Junction, during the war, this fortification is the only one that remains intact today. The site is also significant for its archaeological potential. As a result, the site was listed in the NRHP in 1989.

The Mayfield Fortification site is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the resource boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. The Mayfield Fortification site is currently operated as a public park, and therefore inspection was conducted from the parking area, as well as along a walking trail and an interpretative kiosk at the site. The site is located east of Manassas within a suburban area east of the central length of the project alignment. The project alignment extends in a generally northeast-southwest orientation through the landscape to the west and north, roughly 0.17 mile away at its nearest point.

A site visit to the resource found that the parking area is located off of a road leading into suburban neighborhood. A trailhead begins at the edge of the parking lot and wraps around the base of a ridge atop which is a interpretive area with kiosks for the site. The site is bordered by residential development to three sides and a commercial/industrial area to the north. Due to woods and development around the base of the ridge, the site and interpretive area are not visible from the bordering areas, however, the site becomes clear upon entry to the walking path leading up to the site. From the interpretative area, the cleared ridge allows distant views in all directions, but particularly in the direction of the project alignment.

As part of the project, structures along the project alignment to the west and north will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the resource, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the parking area found that the thick vegetation and dense development patterns in the area inhibit distant views in the direction of the project and no existing structures can be seen. Inspection from along the walkway to the ridgetop and interpretive area found that several existing structures become visible from the cleared and more elevated areas, and multiple existing structures can be seen extending to the west and north of the site from the interpretive kiosks. The existing structures within the vicinity to be replaced as part of this project range from 107- to 130-feet in height and the proposed replacement structures will range from 115- to 130-feet in height. As such, the overall height will not increase, and while the heights of most of the individual proposed structures will remain the same, some may vary or increase in height slightly from their existing configuration. As such, it is anticipated visibility will remain similar, with structures that are currently visible remaining as such, while the intervening vegetation will continue to screen

visibility of those structures that are not currently visible. Because the structures that are currently visible will generally remain the same height and configuration, the change will not be perceptible at the distance they are set. This was confirmed by photo simulation in two directions that revealed unchanged visibility of structures currently visible with the addition of a small portion of the top of one additional structure above the treeline in the distance that is currently screened. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which already includes visibility of multiple structures, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Mayfield Fortification.

Figure 5-144 depicts the location of Mayfield Fortification in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-145 through 5-148 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-149 through 5-154 provide photo simulation from the resource.

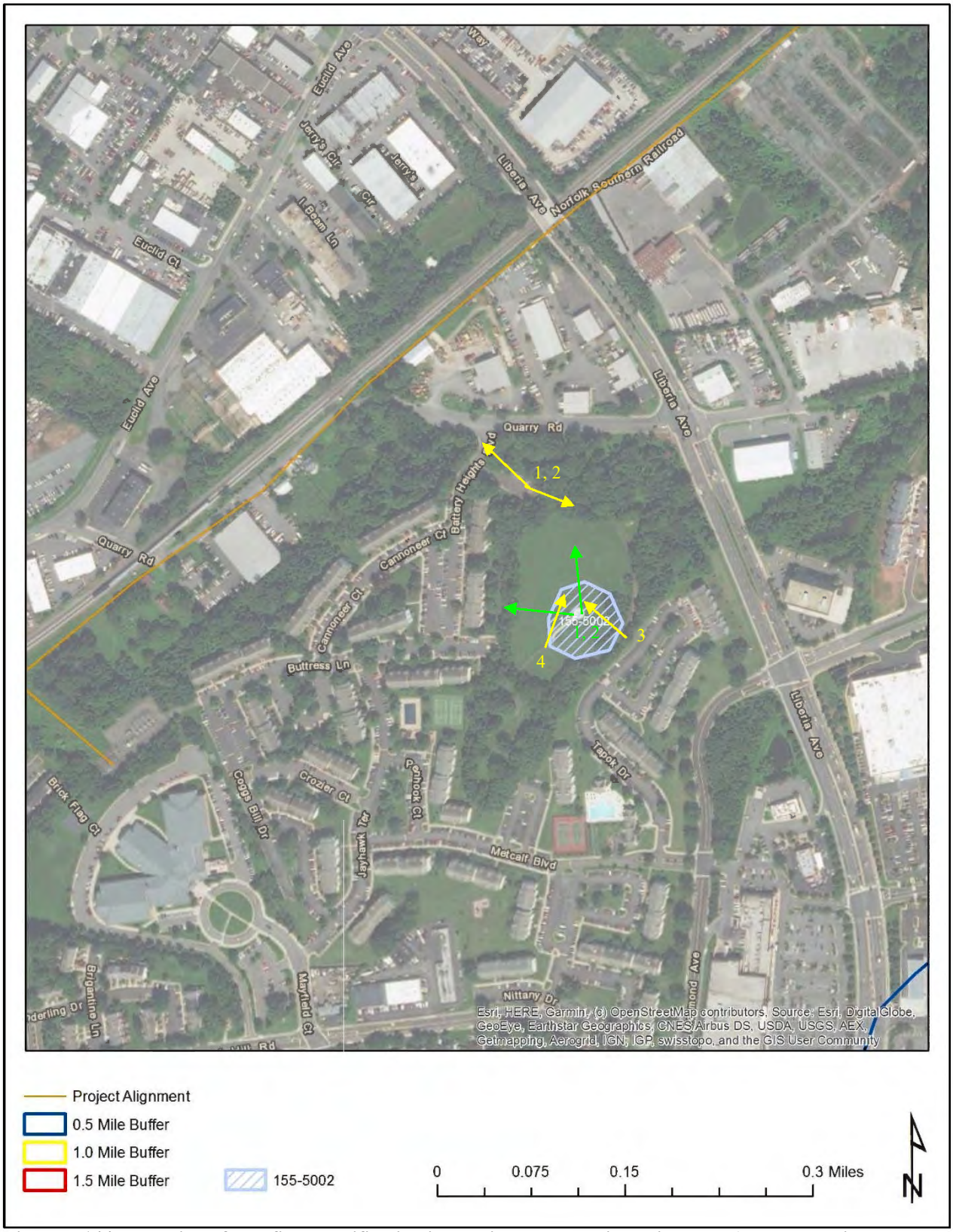

Figure 5-144: Location of Mayfield Fortification in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-145: Photo location 1- View of trailhead to Mayfield Fortification site from parking area, facing east.

Figure 5-146: Photo location 2- View from parking area and trailhead (No project structures visible), facing west.

Figure 5-147: Photo location 3- View from trail approaching interpretative area (Multiple project structures visible), facing northwest.

Figure 5-148: Photo location 4- View from ridgetop near interpretative area (Multiple project structures visible), facing north.

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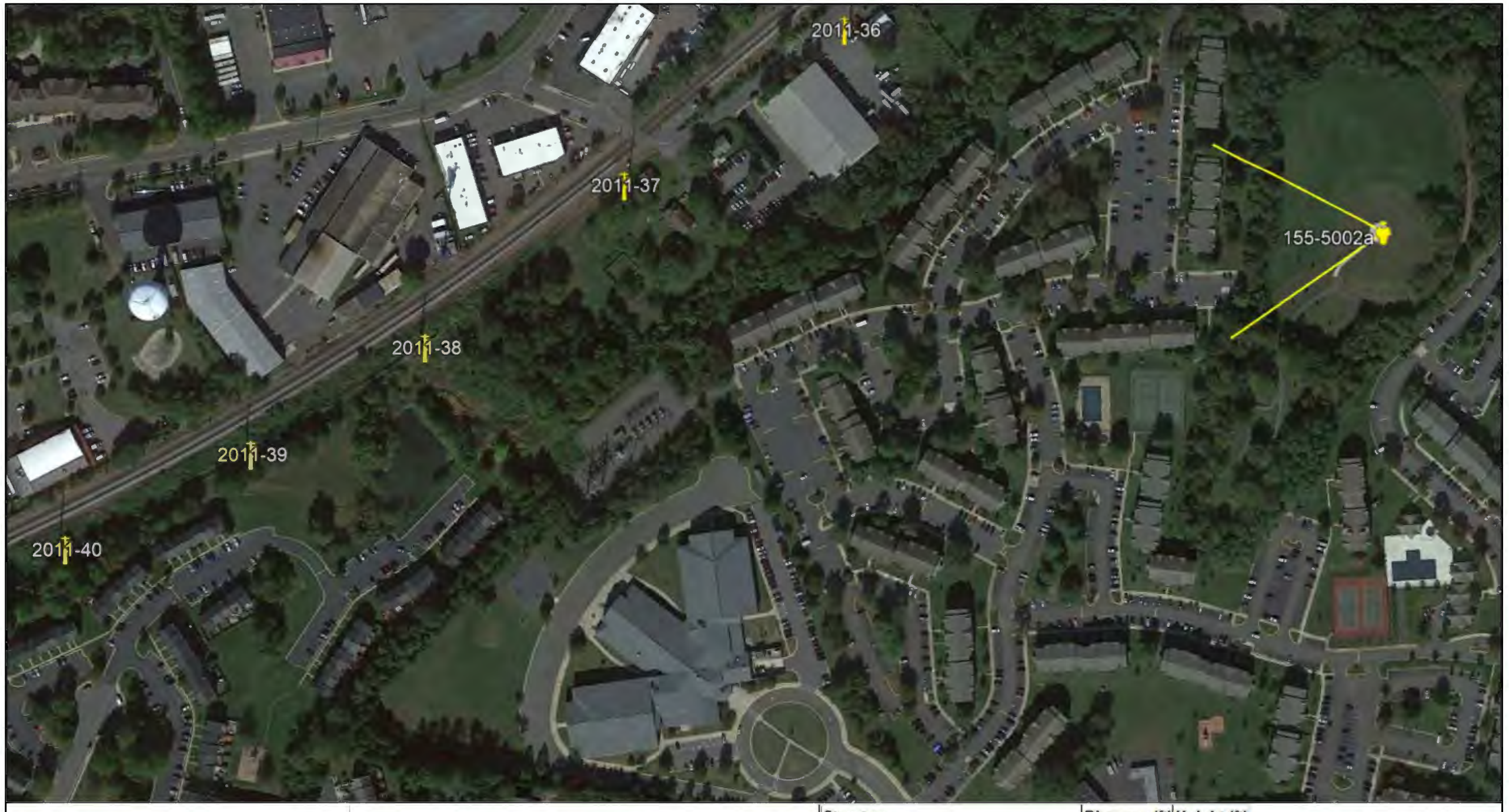

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-5002 A

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-36	1118	115.0
Str 2011-37	1476	120.0
Str 2011-38	1875	120.0
Str 2011-39	2241	115.0
Str 2011-40	2630	125.0
Str 2011-41	3026	110.0

Figure 5-149: Mayfield Fortification Simulation 1 – Simulation location, direction of view, and structures modeled from interpretive kiosk looking west. Source: GTTE, LLC

Figure 5-150: Mayfield Fortification Simulation 1 – Existing view interpretive kiosk looking west. Source: GTTE, LLC

Figure 5-151: Mayfield Fortification Simulation 1 – Proposed view from interpretive kiosk looking west – (Structures not visible shown in yellow). Source: GTTE, LLC

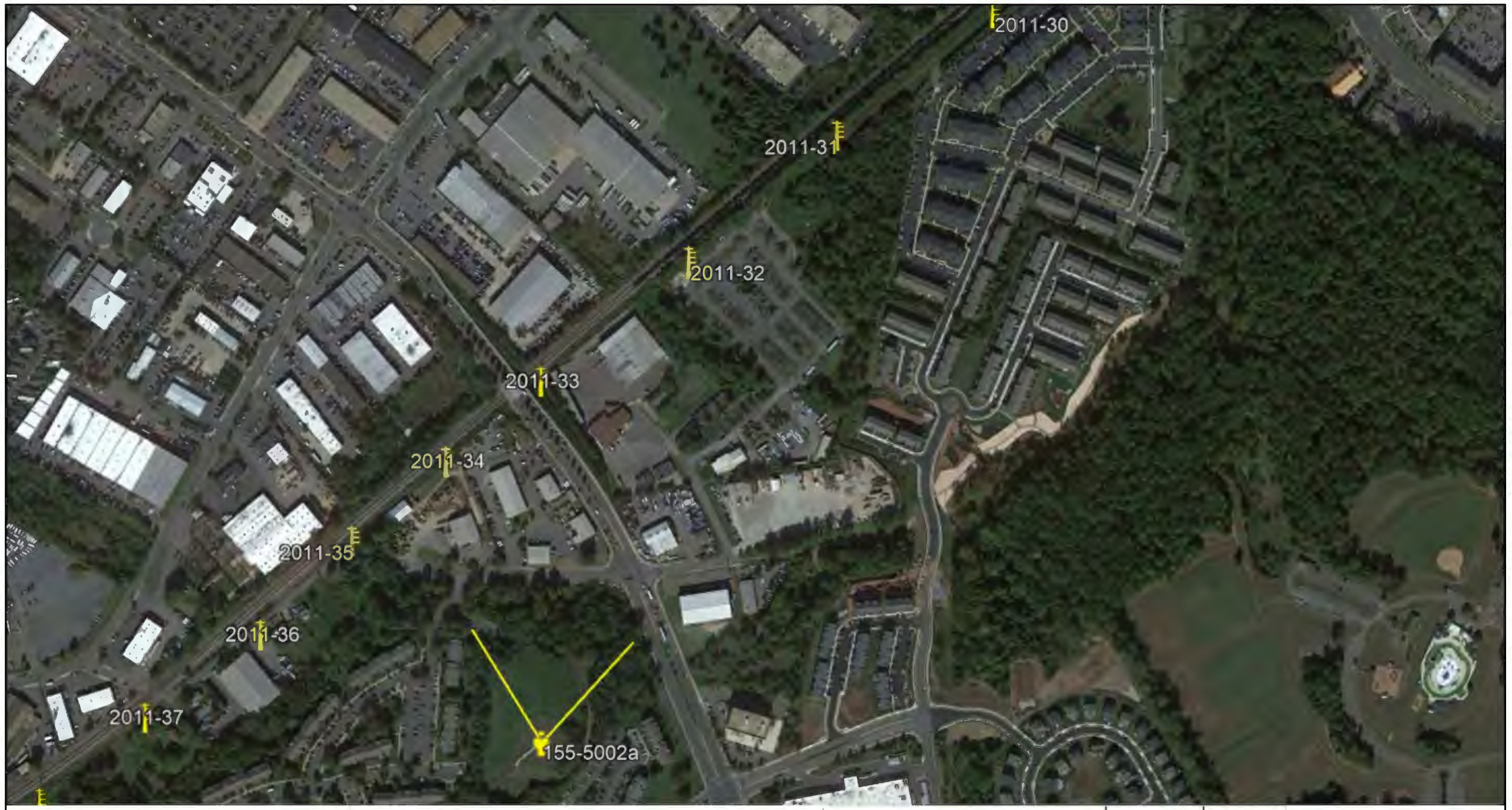

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-5002b

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-30	3185	110.0
Str 2011-31	2509	115.0
Str 2011-32	1871	130.0
Str 2011-33	1342	130.0
Str 2011-34	1103	125.0

Figure 5-152: Mayfield Fortification Simulation 2 – Simulation location, direction of view, and structures modeled from interpretive kiosk looking north. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: 155-5002 B	Existing View
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-153: Mayfield Fortification Simulation 2 – Existing view interpretive kiosk looking north. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: 155-5002 B	Proposed View (Location of towers not visible are overlaid with yellow tower icon)
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-154: Mayfield Fortification Simulation 2 – Proposed view from interpretive kiosk looking north – (Visible structures shown as they would appear). Source: GTTE, LLC

Cannon Branch Fort, Gateway Boulevard (VDHR ID# 155-5020)

The Cannon Branch Fort is a fortification constructed during the Civil War. The fort overlooks Cannon Branch between Manassas and Bristow, Virginia. The site is significant for the potential to provide information on the history of the Civil War in Northern Virginia. The archaeological site is apparently undocumented in the written records of the conflict; the specifics of its exact construction and use are not known. As a result, the site may be of importance as a record of the war and as a source of information regarding the construction technology used on this type of fortification. The site was listed in the NRHP in 1999 and has had a Historic Preservation Easement since 2000.

The Cannon Branch Fort is located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the resource boundaries and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. The Cannon Branch Fort is operated as a local historical site and is therefore open to public and inspection was conducted from the vicinity and throughout the preservation area. The site is located southwest of Manassas within a within a mixed-use area surrounded by modern development and infrastructure southwest of the southern terminus of the project alignment. The project alignment extends in a generally northeast-southwest orientation through the landscape to the northeast of the site, roughly 0.9 mile away at its nearest point.

A site visit to the resource found that the property is located between an industrial complex and a regional highway on the outskirts of Manassas, and thus the landscape between the property and the project is moderately developed. Development between the property and the project area includes the four-lane divided Prince William Parkway (Route 234), a railroad corridor, and a high-density residential townhouse development. Due to vegetation around the site, the woods prevent visibility of any of the landscape or earthwork features within, and while there are views outward from the parking area, views from within the resource boundaries are likewise screened by vegetation.

As part of the project, structures along the project alignment to the northeast will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the site, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the parking lot found that several office buildings associated with the industrial park may be seen immediately to the west while the raised Prince William Parkway corridor can be seen to the northeast, however, existing project structures are not visible in the distance above or beyond the highway. Inspection from the walking trail leading to the site and from within the fort found that thick vegetation inhibits any visibility beyond the immediate property. The existing structures in the vicinity of the site to be replaced as part of this project range from 115- to 120-feet in height and the proposed replacement structures will likewise range from 115- to 120-feet in height. As such, there will be no overall increase in height of project structures. As such, the intervening development and vegetation will continue to completely screen visibility of the

replacement structures from the Cannon Branch Fort and vicinity. Therefore, the project will not introduce any change in setting or viewshed of or from the resource which does not include any of the existing project structures, nor will it include views of any replacement structures, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose ***no impact*** to Cannon Branch Fort.

Figure 5-155 depicts the location of the Cannon Branch Fort in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-156 through 5-159 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-160 through 5-162 provide photo simulation from the resource.

Figure 5-155: Location of Cannon Branch Fort in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-156: Photo location 1- Representative view of Cannon Branch Fort entrance, facing south.

Figure 5-157: Photo location 2- View from Cannon Branch Fort parking lot (No project structures visible), facing east.

Figure 5-158: Photo location 3- Representative view of Cannon Branch Fort (No project structures visible), facing southeast.

Figure 5-159: Photo location 4- View from Cannon Branch (No project structures visible), facing northeast.

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Structure	Distance (ft)	Height (ft)
Str 2011-63	8261	130.0
Str 2011-64	7436	115.0
Str 2011-65	6615	120.0
Str 2011-66	5815	115.0
Str 2011-67	5018	115.0

Figure 5-160: Cannon Branch Fort Simulation 1 – Simulation location, direction of view, and structures modeled from parking lot. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: Cannon Branch Fort**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-161: Cannon Branch Fort Simulation 1 – Existing view from parking lot. Source: GTTE, LLC

Figure 5-162: Cannon Branch Fort Simulation 1 – Proposed view from parking lot – (Structures not visible shown in yellow). Source: GTTE, LLC

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Clifton Historic District (VDHR ID# 194-0003)

Clifton is a small town that developed between 1868-1910 due to the actions of a post-Civil War migrant from New York, Harrison G. Otis. Starting in 1868, Otis purchased land at a depot of the Orange & Alexandria Railroad. He then became the postmaster of the new post office there, named "Clifton." Through his endeavors in making Clifton into a local center, with subdivided parcels, roads, and a hotel, the town quickly grew into a settlement of twenty families by 1878. The town was largely occupied by former northerners who settled in the area after the Civil War. The present district reflects the town's continuous prosperity as a result of lumbering, farming, and employment by the railroad. By 1910, there were two hundred residents in the incorporated Town of Clifton. The residences and commercial buildings dating from the forty-year period of development represents an intact example of vernacular architecture from the late-nineteenth and early-twentieth centuries. The district was listed in the NRHP in 1985.

The Clifton Historic District includes a collection of properties within the small town that are all located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the district boundaries and photographs were taken to document viewshed with emphasis on views from the district towards the project alignment. Field inspection was conducted from public ROW and other accessible locations throughout the district. The district is focused on development within the Clifton town core, which is set north of the northern terminus of the project alignment and existing Clifton Substation. The project alignment extends in a generally southwest orientation away from the district, roughly 0.47 mile away at the nearest point.

A site visit to the district found that it encompasses a moderately densely developed group of several blocks comprised of a commercial core bordered by residential areas. Development is primarily along Main Street which perpendicularly crosses the railroad, as well as several cross streets. Views within and out of the district are longer down the straight street corridors within the district boundaries, however, are generally interrupted by curves in the roads as they extend beyond the district boundaries.

As part of the project, structures along the project alignment to the southwest will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the district. Because some of the structures on the project alignment in the vicinity will be increased in height, the project also has the potential to introduce indirect or visual impacts.

Inspection from properties and streetscapes throughout the district found that development and vegetation within the district and the landscape between it and the project inhibits visibility of any project structures. Another transmission line crosses the landscape between the district and the project and one existing structure on that line that is taller than the project structures is visible from a discrete vantage point along a residential section of the district nearest to the project, however, no project structures are visible beyond. The existing structures within the vicinity to be replaced as part of this project range from 115- to 120-feet in height and the proposed replacement structures will all be 120-feet in height. As such, the heights of several individual proposed structures will

increase slightly, while others will remain the same, but overall there will be no increase in structure height. As such, it is anticipated that visibility will remain similar with no visibility of project structures from any vantage points throughout the district. This was confirmed by photo simulation from Main Street and the railroad crossing that reveals all structures will remain screened behind the intervening development and vegetation. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the district which does not include any existing structures nor will it include any proposed replacement structures, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose ***no impact*** to the Clifton Historic District.

Figure 5-163 depicts the location of the Clifton Historic District in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-164 through 5-168 are representative photographs of the district, as well as those taken from locations throughout the district towards the project area. Figures 5-169 through 5-171 provide photo simulation from the district.

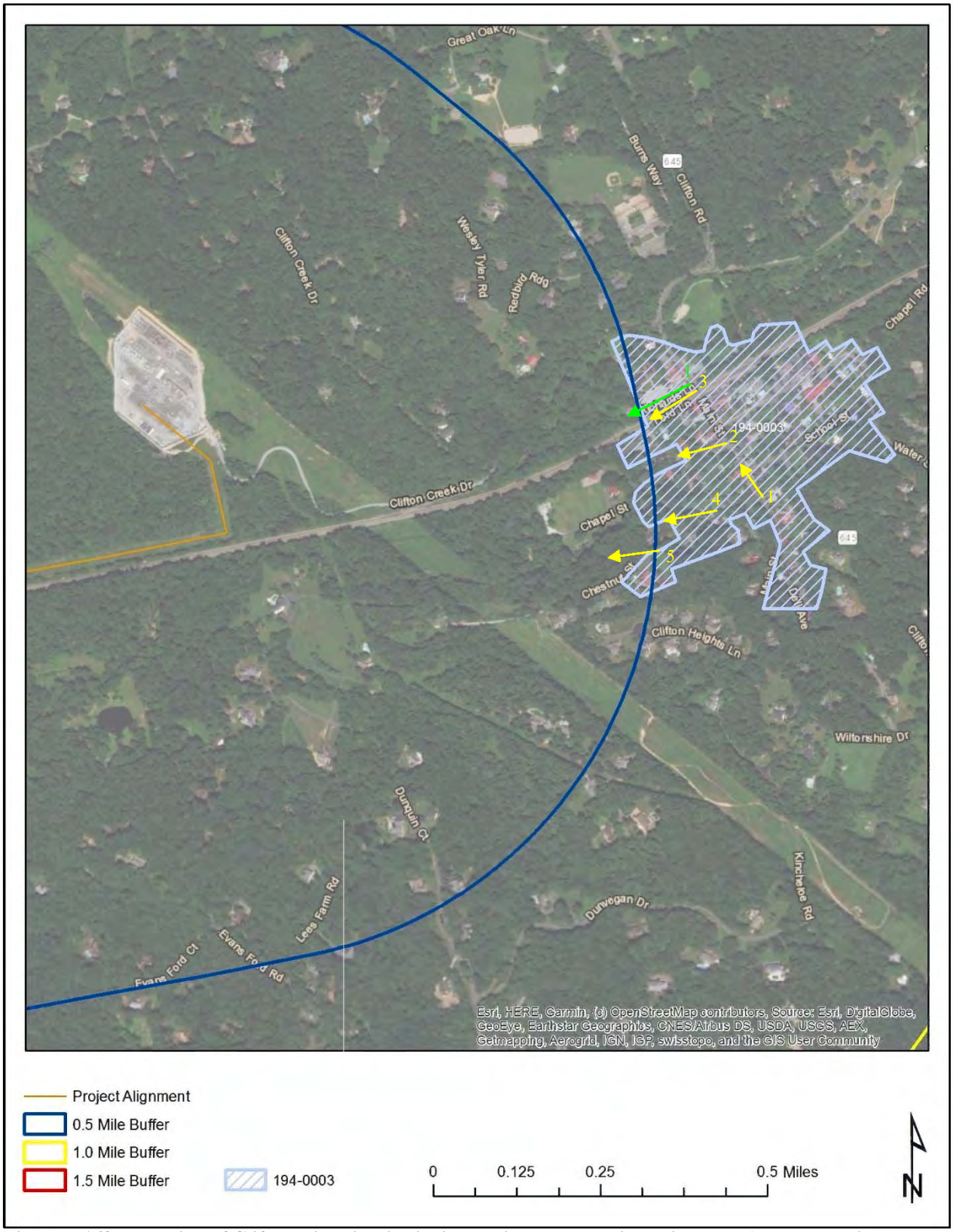

Figure 5-163: Location of Clifton Historic District in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-164: Photo location 1- Representative view of Clifton Historic District along Main Street, facing northwest.

Figure 5-165: Photo location 2- View from intersection of Main Street and Chapel Street (No project structures visible), facing west.

Figure 5-166: Photo location 3- View down railroad corridor (No project structure visible), facing west.

Figure 5-167: Photo location 4- View from Chestnut Street (No project structures visible. One structure on another line not included in this project is visible), facing west.

Figure 5-168: Photo location 5- View from Chestnut Street near edge of historic district (No project structures visible), facing west.

Structure	Distance (ft)	Height (ft)
Str 2011-01	3537	69.5
Str 2011-01a	3286	121.5
Str 2011-02	3152	121.5
Str 2011-03	3151	121.5
Str 2011-04	3883	115.0

Figure 5-169: Clifton Historic District Simulation 1 – Simulation location, direction of view, and structures modeled from Main Street and railroad. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 194-0003**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-170: Clifton Historic District Simulation 1 – Existing view from Main Street and Railroad. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 194-0003**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-171: Clifton Historic District Simulation 1 – Proposed view from Main Street and railroad – (Structures not visible shown in yellow). Source: GTTE, LLC

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BATTLEFIELDS
Located within 1.0 Mile of the Project or Closer

Blackburn's Ford Battlefield, Route 28 (VDHR ID# 029-5117)

The Blackburn's Ford Battlefield, which encompasses 1,975 acres, is a Civil War battlefield that dates to 1861. The engagement at Blackburn's Ford on July 18, 1861, preceded the First Battle of Manassas, which took place on July 21, 1861. In part with this larger battle, the event is regarded as one of the first actions of the Civil War. During this battle, Union General Irvin McDowell moved his army from Washington, D.C. and aimed to engage with the Confederate force under General P.G.T. Beauregard along Bull Run. On July 18, McDowell pushed southward from Centreville and attempted to cross Bull Run at Blackburn's Ford, but was unsuccessful. This event came prior to the main battle at Manassas three days later. Due to the Union Army's failure at Blackburn's Ford, McDowell attempted a flanking maneuver against the Confederate force near Manassas. As a result of its association with the First Battle of Manassas, the Blackburn's Ford Battlefield is considered potentially eligible for listing in the NRHP.

Portions of the Blackburn's Ford Battlefield are located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the battlefield and photographs were taken to document viewshed with emphasis on views from the battlefield towards the project alignment. As much of the battlefield landscape within the vicinity of the project is heavily developed, field inspection was conducted from public ROW and streetscapes throughout the area. The Blackburn's Ford Battlefield occupies a large landscape north of Manassas, with the majority well to the north and west of the project, however, a small area is set in closer proximity, roughly 0.57 mile away at its nearest point.

A site visit to the battlefield found that much of the landscape within the vicinity of the project alignment has been subject to extensive modern intrusion and development that has compromised the historic setting. While nearly all of the portion of the battlefield located within one mile is now densely developed and not considered part of the potential National Register area, a small area on the east side of Bull Run remains wooded and undeveloped and is considered part of the potential National Register area, however, this area is not publicly-accessible.

As part of the project, structures along the project alignment to the south will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the battlefield, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from representative vantage points throughout the portion of the battlefield in the vicinity of the project found that none of the existing structures on the project alignment are visible due to topography, vegetation, and development. The landscape of and between the battlefield and the project alignment is densely developed with an additional wooded area immediately bordering the alignment. The existing structures within the vicinity to be replaced as part of this project range from 90- to 125-feet in height and the proposed replacement structures will likewise range from 90- to 125-feet in height. As such, the heights of the individual proposed structures may vary slightly from their existing configuration, although none will be any taller than the existing structures. As such, it is anticipated visibility of the project will remain the same as current views,

with intervening topography, vegetation, and development continuing to completely screen visibility of the replacement structures from throughout the battlefield. This was confirmed by photo simulation from the nearest point of the battlefield to the project that depicts all structures remaining screened beneath the intervening terrain and vegetation. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the battlefield which does not include any of the existing project structures, nor will it include views of any replacement structures, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose ***no impact*** to the Blackburn's Ford Battlefield.

Figure 5-172 depicts the boundaries of the Blackburn's Ford Battlefield in relation to the project area and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-173 through 5-178 are representative photographs of the battlefield, as well as those taken from locations within and near the battlefield towards the project area. Figures 5-179 through 5-181 provide photo simulation from the battlefield.

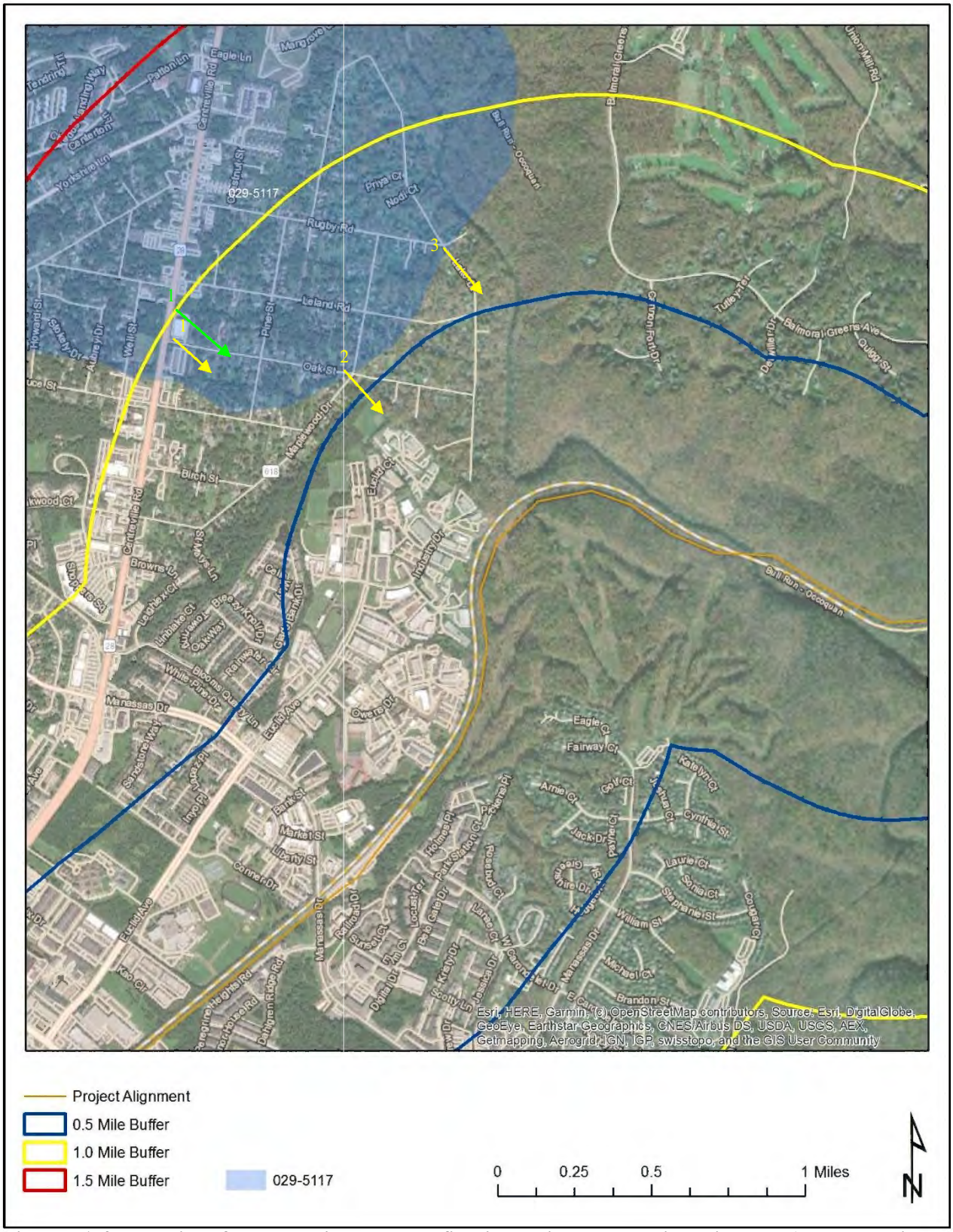

Figure 5-172: Location of Blackburn's Ford Battlefield in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-173: Photo location 1- View from Centerville Road at Oak Street (No project structures visible), facing southwest.

Figure 5-174: Photo location 2- View from intersection of Oak Street and Maplewood Drive (No project structures visible), facing southeast.

Figure 5-175: Photo location 3- View intersection of Rugby Road and Lake Drive (No project structures visible), facing southeast.

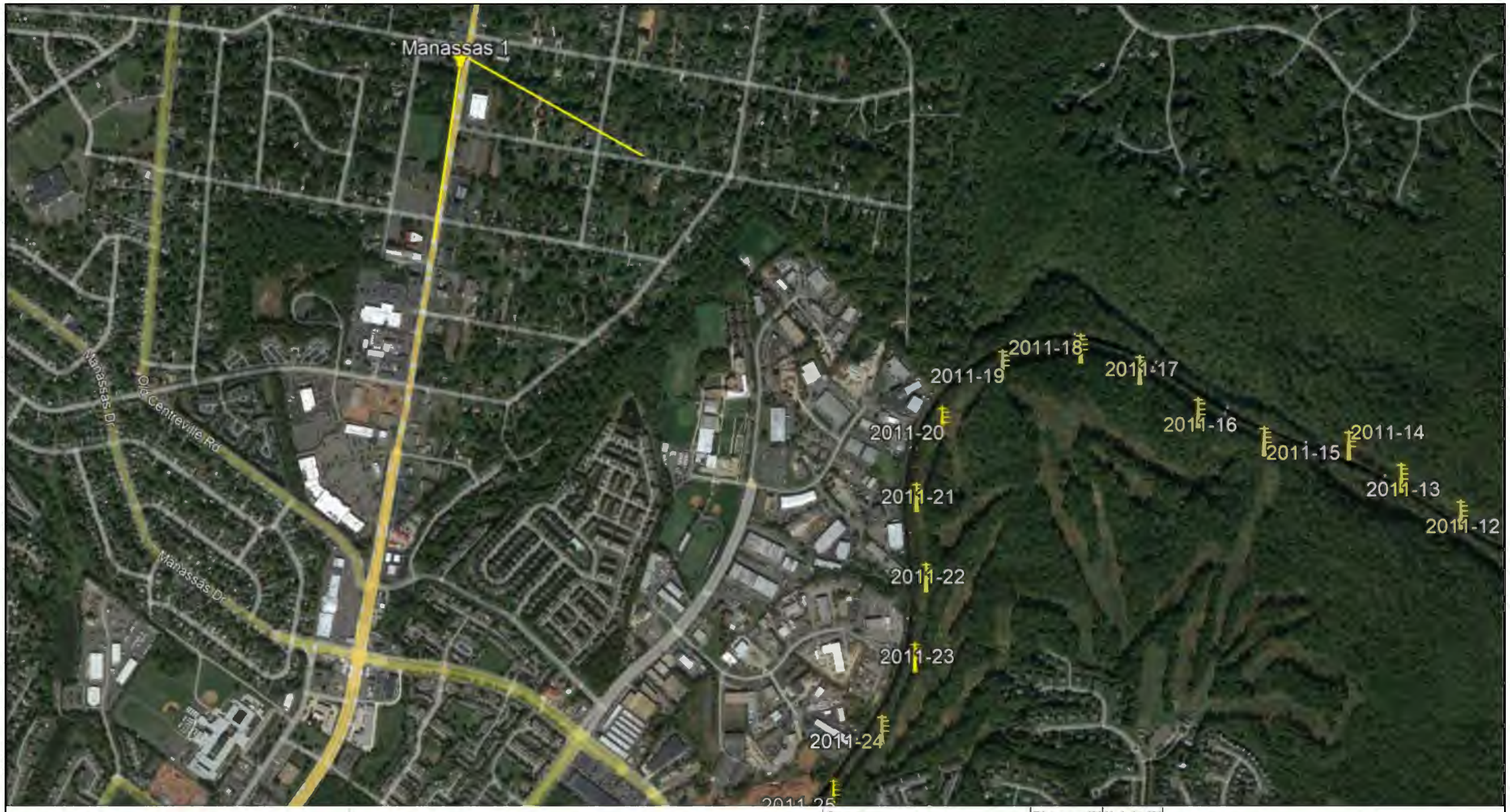

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: Manassas 1

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-19	5671	126.5
Str 2011-20	5492	121.5
Str 2011-21	5759	91.5
Str 2011-22	6339	96.5
Str 2011-23	6834	121.5
Str 2011-24	7199	126.5
Str 2011-25	7485	131.5
Str 2011-26	7809	141.5
Str 2011-27	8196	131.5

Figure 5-176: Blackburn's Ford Battlefield Simulation 1 – Simulation location, direction of view, and structures modeled from Centerville Road. Source: GTTE, LLC

Figure 5-177: Blackburn's Ford Battlefield Simulation 1 – Existing view from Centerville Road. Source: GTTE, LLC

Figure 5-178: Blackburn's Ford Battlefield Simulation 1 – Proposed view from gate to property – (Structures not visible shown in yellow). Source: GTTE, LLC

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Bristoe Station Battlefield (VDHR ID# 076-5036)

The Bristoe Station Battlefield, also known as Manassas Station Operations Battlefield, is a Civil War battlefield that dates to 1862. The battlefield consists of the sites of four smaller actions that led up to the Second Battle of Manassas on August 29-30, 1862. Together, these engagements are referred to as the Manassas Station Operations. On August 25th, Confederate General "Stonewall" Jackson moved his force of 20,000 soldiers from Cedar Mountain in hopes of stopping Union General John Pope's army from heading south. On August 25th, Jackson moved east toward Bristoe Station and attacked a Union garrison there the next day. He then moved toward Manassas Junction on August 27th. The Confederates engaged with the Union Army under General John Pope at Union Mills, which was arriving in piecemeal. A separate portion of the Confederate Army under General Richard Ewell also engaged with a Union force at Kettle Run, before moving to Manassas Junction to meet with Jackson's force. After pushing back Union forces, the Confederates were able to take a defensive position at Manassas and wait for the remainder of General Lee's army to arrive. As a result of these events' association with the Second Battle of Manassas, the battlefield is considered potentially eligible for listing in the NRHP.

The Bristoe Station Battlefield is directly crossed by the project alignment and therefore was subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the battlefield and photographs were taken to document viewshed with emphasis on views from the battlefield towards the project alignment. The Bristoe Station Battlefield occupies a large landscape centered on the City of Manassas, with entire length of the project alignment within the battlefield. As such, all sixty-five (65) existing transmission structures associated with this project area located directly within the delineated boundaries of the battlefield.

A site visit to the battlefield found that much of the landscape, particularly within the vicinity of the project alignment, has been subject to extensive modern intrusion and development that has compromised the historic setting. Much of the battlefield boundaries coincide with the urban and suburban core of the City of Manassas and therefore the only areas that retain historic setting are a number of antebellum homes and war-time fortifications that have been preserved as municipal parks or historic sites. The largest undeveloped landscape is the area bordering Bull Run that is now part of the Hemlock Overlook Regional Park.

As part of the project, all structures located along the alignment that are directly in the battlefield will be replaced, as will several additional structures leading into the Clifton Substation that are just outside the delineated battlefield boundaries. Structure replacement will occur on a one-to-one basis near the location of the existing structures and will not require any additional ROW or clearing. As a result, the project will have a direct impact on the battlefield, however, because it will not introduce any substantially new or different components into the landscape, nor will it result in clearing or demolition of any associated features, the direct impact will be minimal. Because some of the structures within and bordering the battlefield may be increased in height, the project also has the potential to introduce indirect or visual impacts.

Inspection from representative vantage points throughout the battlefield in the vicinity of the project found that visibility of the existing structures on the project alignment varies by proximity

to the alignment, and the character of the intervening topography, vegetation, and development. Because the battlefield is focused along what was then the Orange & Alexandria Railroad corridor which the project alignment now parallels, it too extends directly through the core of the battlefield. As a result, there is extensive visibility of many existing transmission line structures from vantages in close proximity. There is also visibility from several of the preserved interpretive sites including Mayfield Fortification and Signal Hill, however, there is no visibility from several other sites including Cannon Branch Fort, Battery Hill Redoubt, and the Louisiana Brigade Winter Camp. In general, where there is visibility of existing structures, they are seen in conjunction with extensive other nonhistoric development and an overall compromised setting. The existing structures along the length of the alignment that are within the battlefield and to be replaced as part of this project range from 60- to 132-feet in height and the proposed replacement structures will likewise range from 80- to 140-feet in height. As such, many of the individual structures will be increased in height while others will remain the same or in some situations be decreased in height. Overall, the average height of structures along the alignment will increase by only 5 feet, from 110-feet to 115-feet. As such, it is anticipated visibility of the project will remain similar to current views, and remain visible with a slight change in height and configuration where it is already visible, and remain screened by intervening topography, development, and vegetation from locations where structures are not currently visible. This was confirmed by photo simulation from locations throughout the battlefield that depicts structures will remain visible from close proximity with no noticeable change in appearance, while no additional structures currently screened will become visible. Therefore, the project will not introduce any substantial change in setting or viewshed of or from the battlefield, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Bristoe Station Battlefield.

Figure 5-179 depicts the boundaries of the Bristoe Station Battlefield in relation to the project area and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-180 through 5-197 are representative photographs of the battlefield, as well as those taken from locations within and near the battlefield towards the project area. Figures 5-198 through 5-218 provide photo simulation from the resource.

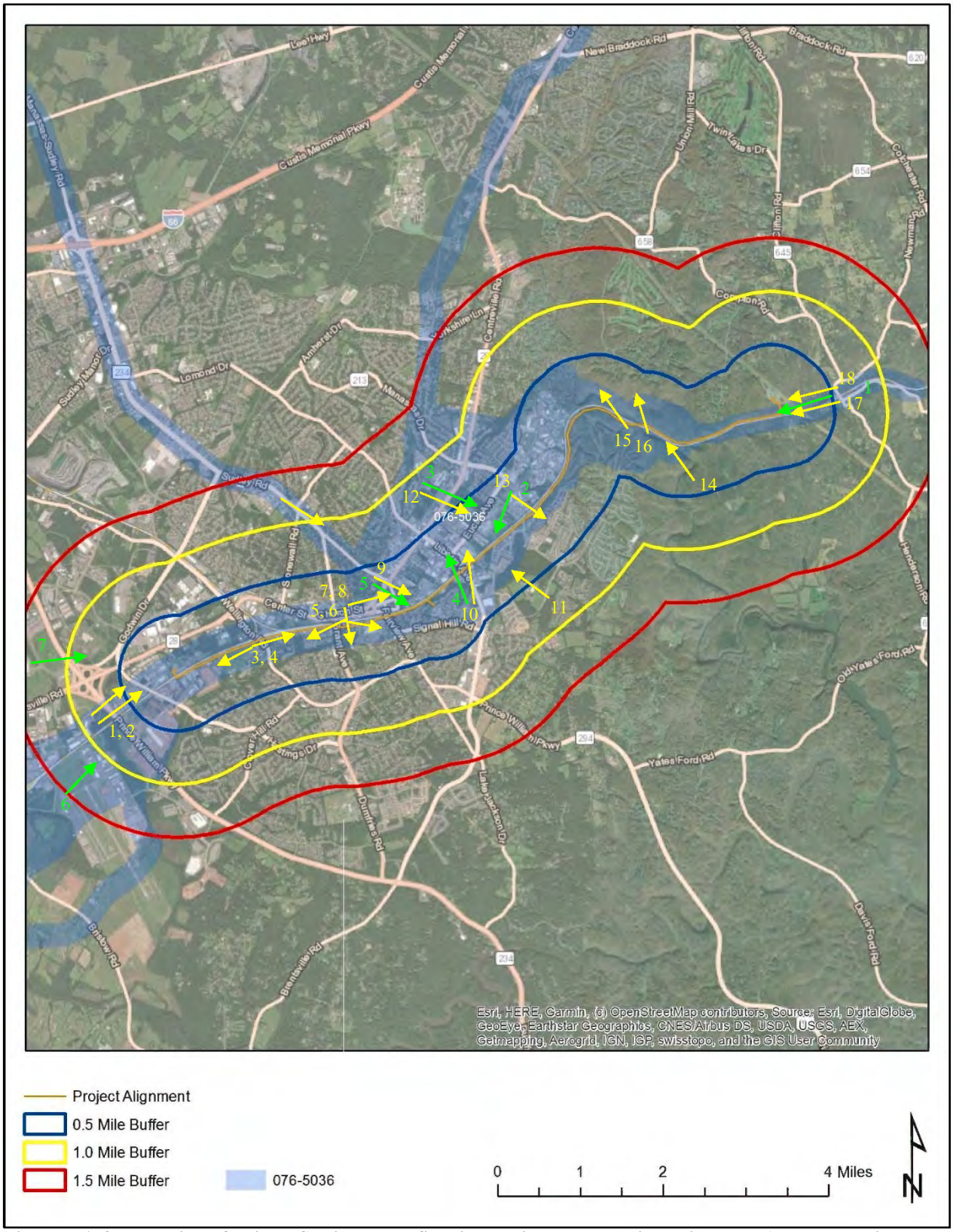


Figure 5-179: Location of Bristoe Station Battlefield in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-180: Photo location 1- View from Cannon Branch Fort parking lot (No project structures visible), facing east.

Figure 5-181: Photo location 2- View from Cannon Branch Fort (No project structures visible), facing southeast.

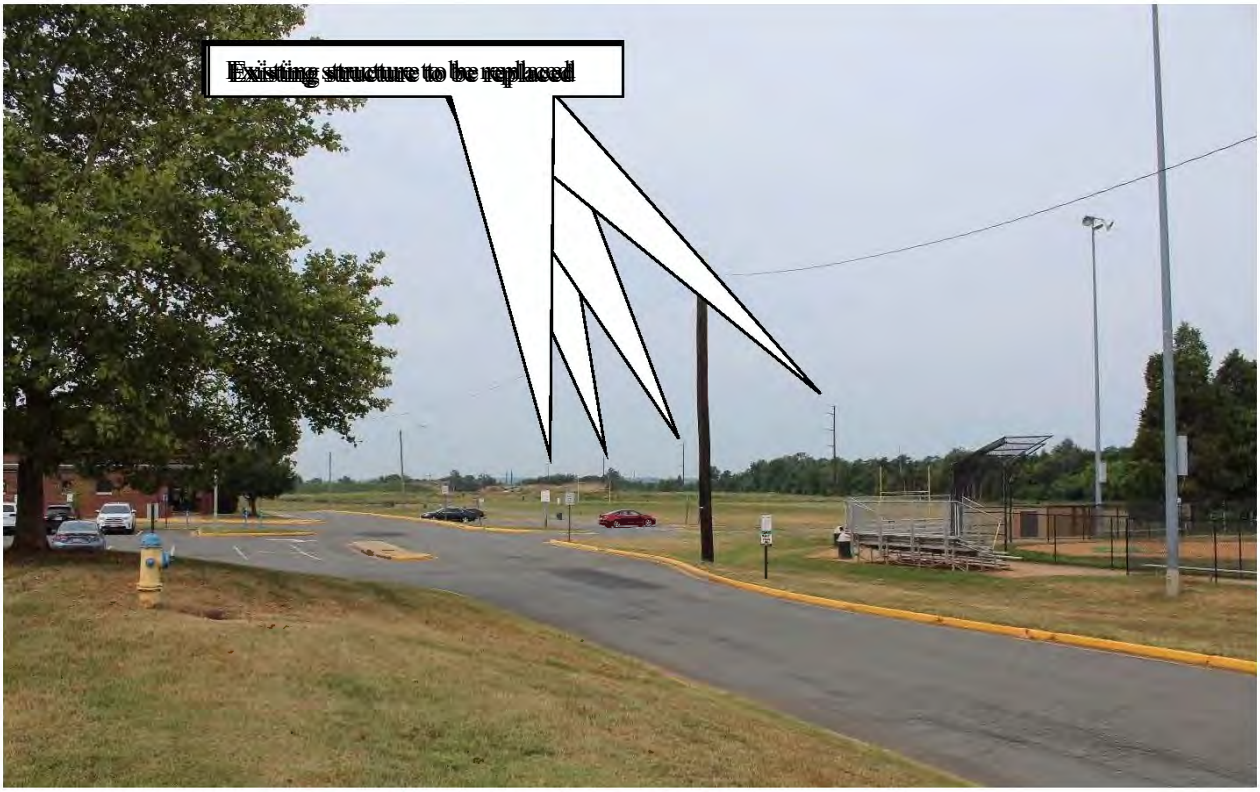


Figure 5-182: Photo location 3- View from Jennie Dean Memorial Site (Multiple project structures visible), facing northwest.

Figure 5-183: Photo location 4- View from Jennie Dean Memorial Site (Multiple project structures visible), facing northeast.

Figure 5-184: Photo location 5- View from Manassas Railroad Station (Project structure visible), facing southeast.

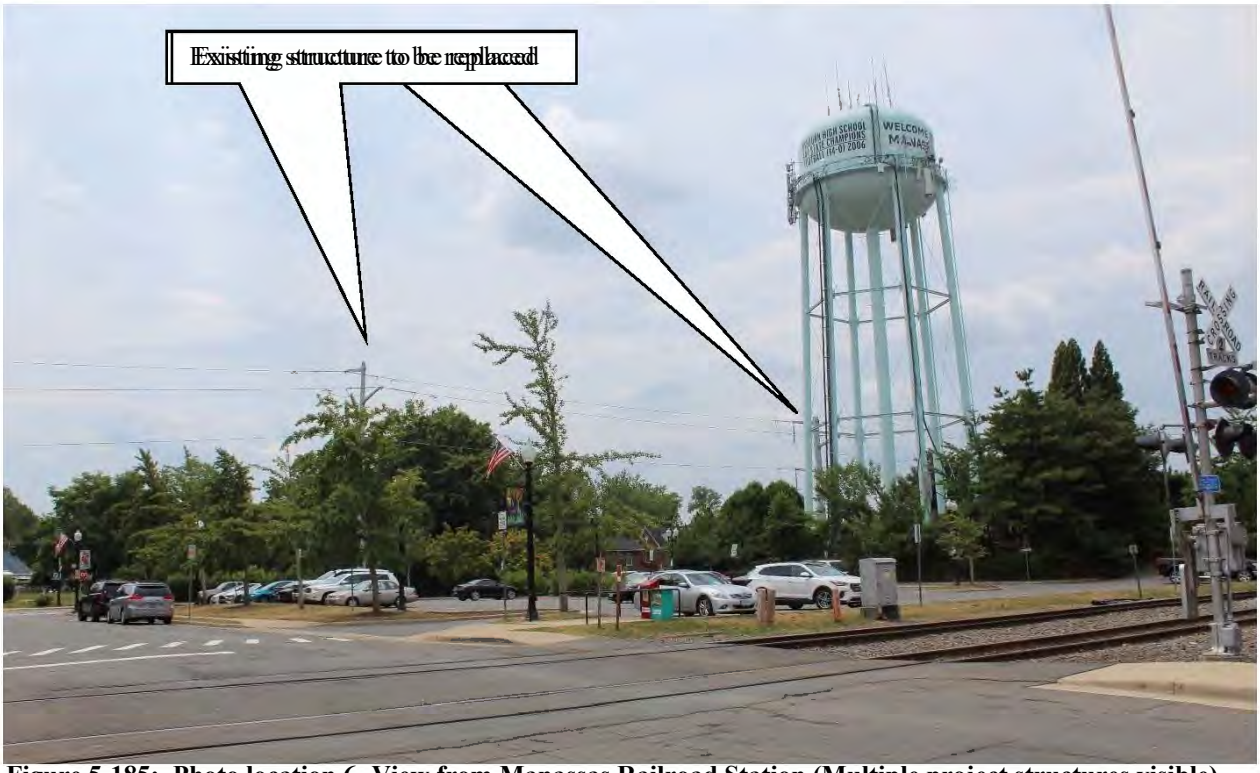


Figure 5-185: Photo location 6- View from Manassas Railroad Station (Multiple project structures visible), facing southwest.

Figure 5-186: Photo location 7- View from West Street at Center Street (Project structure visible), facing south.

Figure 5-187: Photo location 8- View from Center Street at East Street (Multiple project structures visible), facing east.

Figure 5-188: Photo location 9- View from Annaburg (One project structure visible), facing southeast.

Figure 5-189: Photo location 10- View from Mayfield Fortification near interpretative area (Multiple project structures visible), facing north.

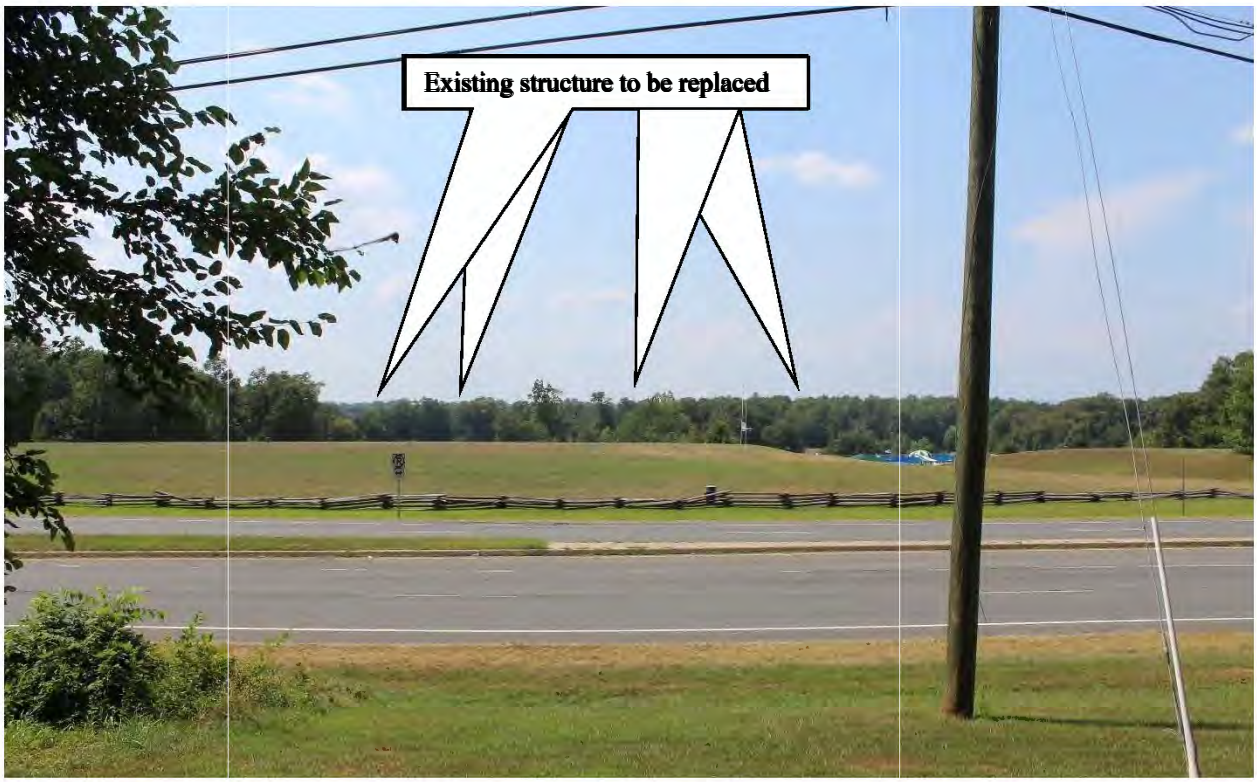


Figure 5-190: Photo location 11- View from Signal Hill (Multiple project structures visible), facing northwest.

Figure 5-191: Photo location 12- View from front of Liberia (no project structures visible), facing southeast.

Figure 5-192: Photo location 13- View from Conner House (One project structure visible), facing southeast.

Figure 5-193: Photo location 14- View from Hemlock Overlook Regional Park (no project structures visible), facing north.

Figure 5-194: Photo location 15- View from Hemlock Overlook Regional Park (No project structures visible, but a length of conductor is visible), facing north.

Figure 5-195: Photo location 16 - Representative view of existing bridge from hiking trail along Bull Run Creek (Conductor visible above bridge but no project structures visible), facing north.

Figure 5-196: Photo location 17 - View from Clifton (No project structures visible), facing west.

Figure 5-197: Photo location 18- View from Clifton (No project structure visible), facing west.

Structure	Distance (ft)	Height (ft)
Str 2011-01	3537	69.5
Str 2011-01a	3286	121.5
Str 2011-02	3152	121.5
Str 2011-03	3151	121.5
Str 2011-04	3883	115.0

Figure 5-198: Bristoe Station Battlefield Simulation 1 – Simulation location, direction of view, and structures modeled from Clifton. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 194-0003**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-199: Bristoe Station Battlefield Simulation 1 – Existing view from Clifton. Source: GTTE, LLC

Figure 5-200: Bristoe Station Battlefield Simulation 1 – Proposed view from Clifton – (Structures not visible shown in yellow). Source: GTTE, LLC

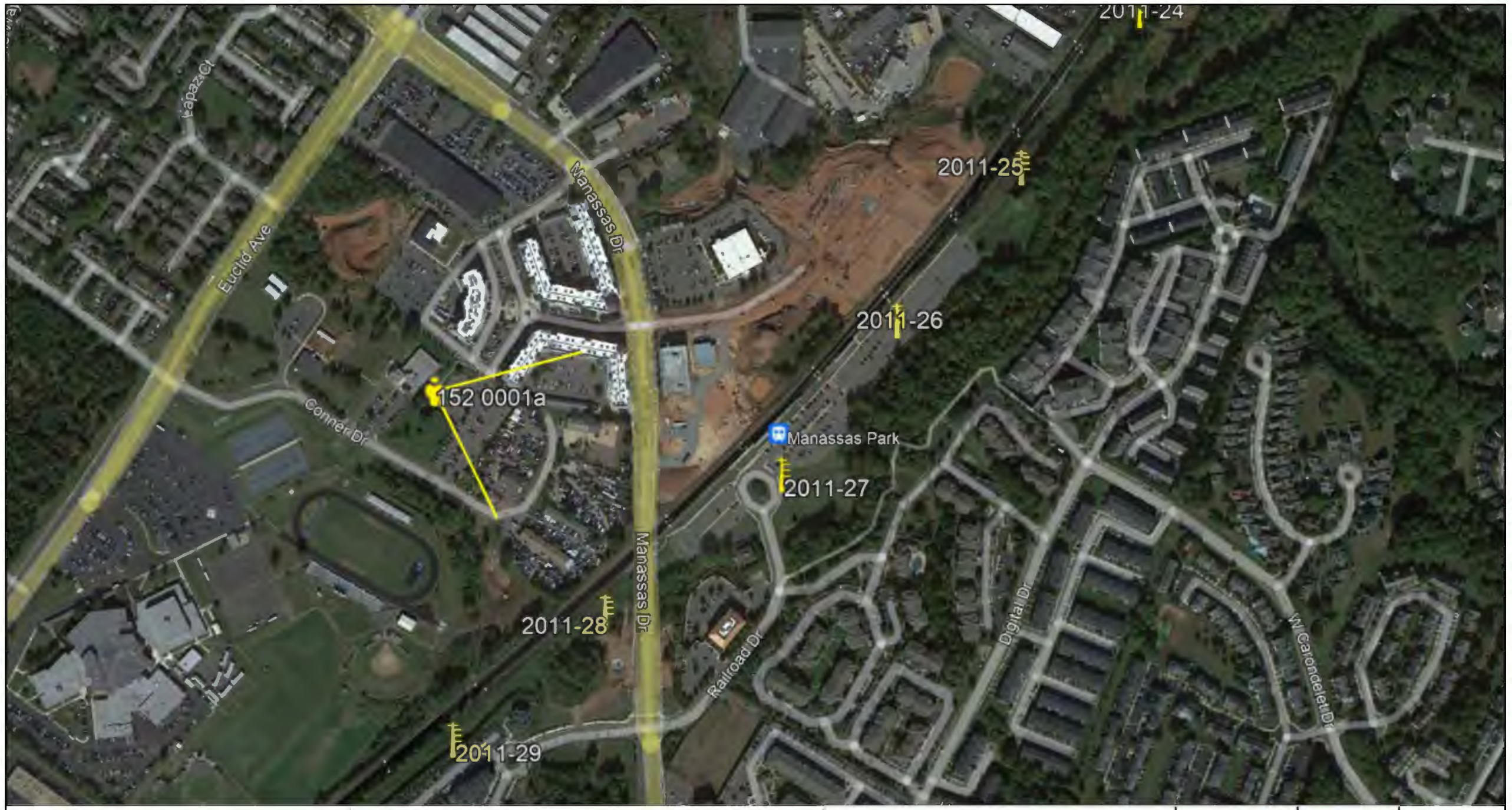


Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 152 0001a

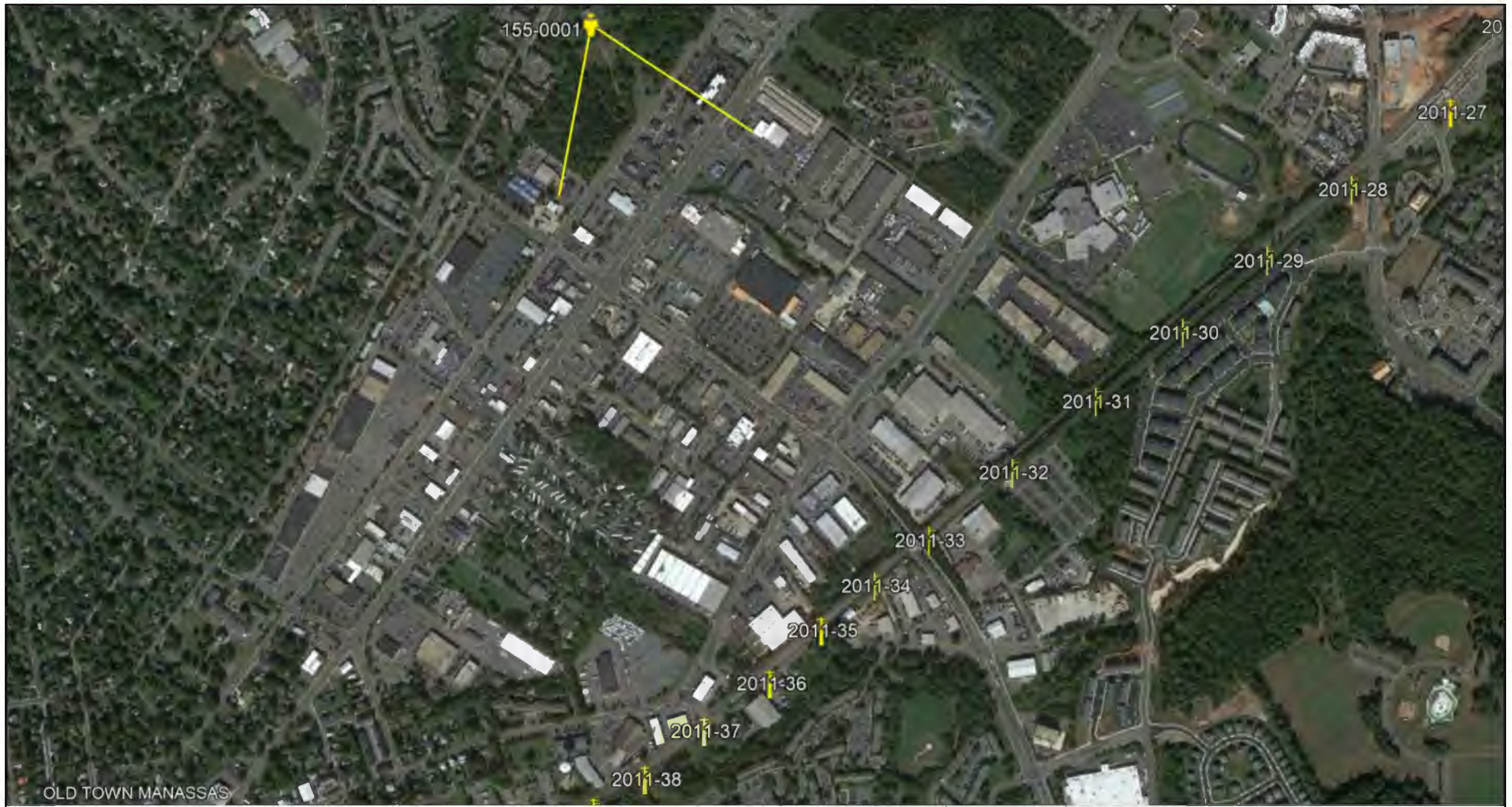
Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-26	1747	141.5
Str 2011-27	1333	131.5
Str 2011-28	1037	141.5

Figure 5-201: Bristoe Station Battlefield Simulation 2 – Simulation location, direction of view, and structures modeled from Conner House. Source: GTTE, LLC

Figure 5-202: Bristoe Station Battlefield Simulation 2 – Existing view from Conner House. Source: GTTE, LLC

Figure 5-203: Bristoe Station Battlefield Simulation 2 – Proposed view from Conner House – (Visible structures shown as they would appear). Source: GTTE, LLC



Structure	Distance (ft)	Height (ft)
Str 2011-32	4015	130.0
Str 2011-33	4020	130.0
Str 2011-34	4098	125.0
Str 2011-35	4224	115.0
Str 2011-36	4448	115.0
Str 2011-37	4657	120.0
Str 2011-38	4926	120.0

Figure 5-204: Bristoe Station Battlefield Simulation 3 – Simulation location, direction of view, and structures modeled from Liberia. Source: GTTE, LLC

Figure 5-205: Bristoe Station Battlefield Simulation 3 – Existing view from Liberia. Source: GTTE, LLC

Figure 5-206: Bristoe Station Battlefield Simulation 3 – Proposed view from Liberia – (Structures not visible shown in yellow). Source: GTTE, LLC

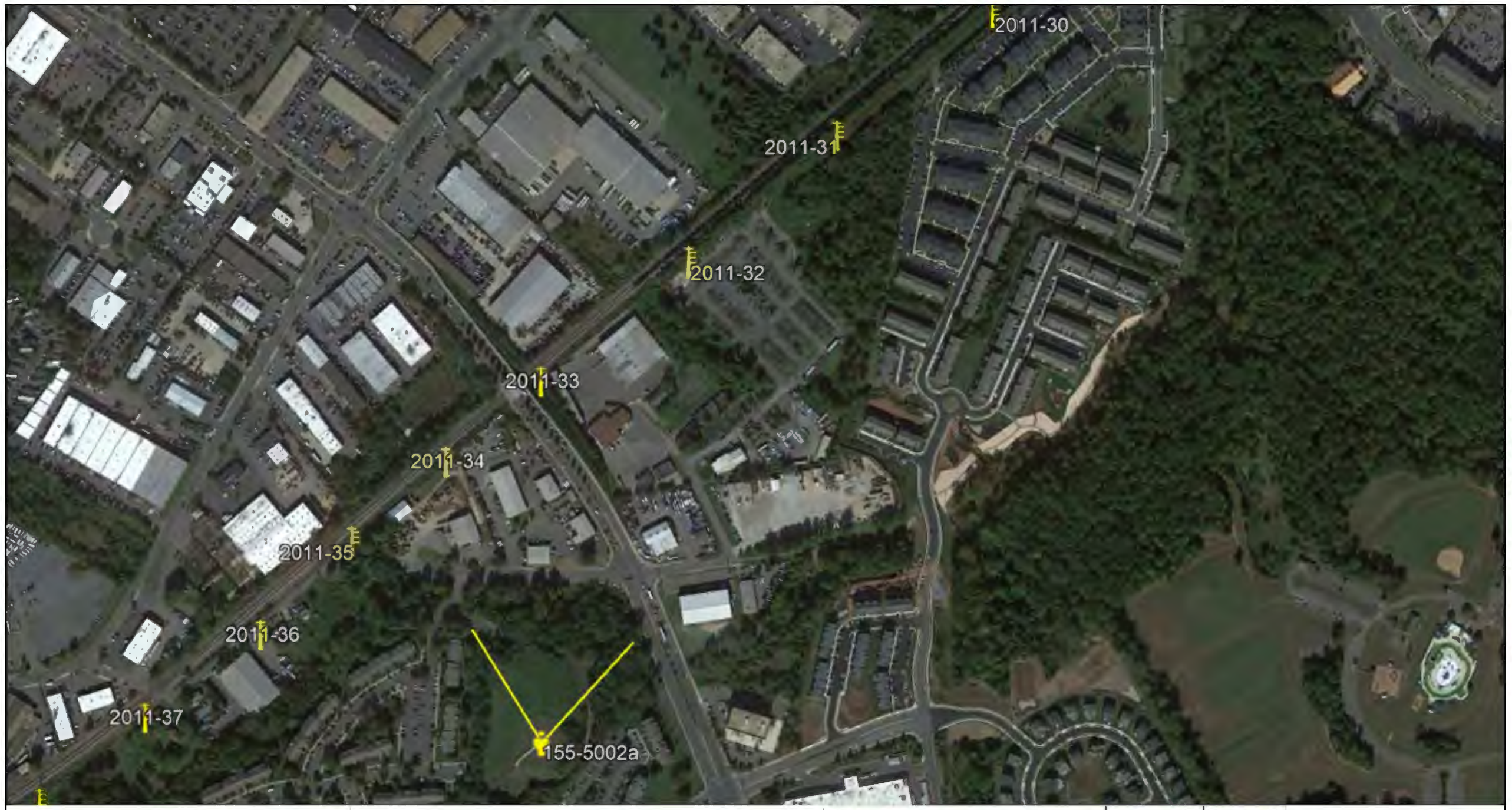


Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-5002b

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-30	3185	110.0
Str 2011-31	2509	115.0
Str 2011-32	1871	130.0
Str 2011-33	1342	130.0
Str 2011-34	1103	125.0

Figure 5-207: Bristoe Station Battlefield Simulation 4 – Simulation location, direction of view, and structures modeled from Mayfield Fortification. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: 155-5002 B	Existing View	
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.	

Figure 5-208: Bristoe Station Battlefield Simulation 4 – Existing view from Mayfield Fortification. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild	Location: 155-5002 B	Proposed View (Location of towers not visible are overlaid with yellow tower icon)
Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-209: Bristoe Station Battlefield Simulation 4 – Proposed view from Mayfield Fortification – (Visible structures shown as they would appear). Source: GTTE, LLC

Structure	Distance (ft)	Height (ft)
Str 2011-41	2146	115.0
Str 2011-42	1981	115.0
Str 2011-43	1883	105.0
Str 2011-44	1816	125.0
Str 2011-45	1787	105.0
Str 2011-46	1798	105.0
Str 2011-46A	1981	100.0
Str 2011-47	2011	115.0
Str 2011-48	2100	115.0

Figure 5-210: Bristoe Station Battlefield Simulation 5 – Simulation location, direction of view, and structures modeled from Annaburg. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	Line #2011 230kV Partial Rebuild	Location: 155-0021 B	Existing View
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-211: Bristoe Station Battlefield Simulation 5 – Existing view from Annaburg. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 155-0021 B**	**Proposed View** (Location of towers not visible are overlaid with yellow tower icon)
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-212: Bristoe Station Battlefield Simulation 5 – Proposed view from Annaburg – (Structures not visible shown in yellow). Source: GTTE, LLC

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location:
Bristoe Station 1

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-63	12921	130.0
Str 2011-64	12149	115.0
Str 2011-65	11376	120.0
Str 2011-66	10618	115.0
Str 2011-67	9859	115.0

Figure 5-213: Bristoe Station Battlefield Simulation 6 – Simulation location, direction of view, and structures modeled from Manassas Regional Airport. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: Bristoe Station 2**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-214: Bristoe Station Battlefield Simulation 6 – Existing view from Manassas Regional Airport. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild | **Location: Bristoe Station 2**

Proposed View
(Location of towers not visible are overlaid with yellow tower icon)

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-215: Bristoe Station Battlefield Simulation 6 – Proposed view from Manassas Regional Airport – (Structures not visible shown in yellow). Source: GTTE, LLC

Structure	Distance (ft)	Height (ft)
Str 2011-63	12039	130.0
Str 2011-64	11216	115.0
Str 2011-65	10409	120.0
Str 2011-66	9636	115.0
Str 2011-67	8881	115.0

Figure 5-216: Bristoe Station Battlefield Simulation 7 – Simulation location, direction of view, and structures modeled from Hornbaker Road. Source: GTTE, LLC

Figure 5-217: Bristoe Station Battlefield Simulation 7 – Existing view from Hornbaker Road. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild | **Location: Bristoe Station 1** | **Proposed View**
(Location of towers not visible are overlaid with yellow tower icon)

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-218: Bristoe Station Battlefield Simulation 7 – Proposed view from Hornbaker Road – (Structures not visible shown in yellow). Source: GTTE, LLC

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Second Battle of Manassas/Bull Run, Balls Ford Road (VDHR ID# 076-5190)

The Second Manassas/Bull Run Battlefield is a Civil War battlefield that dates to 1862. In June of 1862, with hopes of bettering the success of the Union Armies operating outside of Northern Virginia, President Abraham Lincoln formed the Army of Virginia to protect Washington, D.C. By August, the army commander, General John Pope, moved south from D.C. toward Richmond. Confederate General Robert E. Lee, who was engaged with Union General McClellan's army south of Richmond, called for the force under Stonewall Jackson (positioned at Cedar Mountain near Culpeper) to move east toward Manassas Junctions with the hope of stopping Pope's army. Following a series of minor engagements between August 25-27, Jackson managed to set up a defensive line near the First Manassas battlefield. Lee then brought up the remaining half of his army to Manassas. The two armies engaged between August 29-30, which resulted in the defeat of General Pope's army. The Confederate victory at Second Manassas led to the Battle of Antietam on September 17th. The most intact core areas of the battlefield have been listed in the NRHP as the Manassas National Military Park, while other portions are considered potentially eligible for listing in the NRHP.

Portions of the Second Manassas Battlefield are located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the battlefield and photographs were taken to document viewshed with emphasis on views from the battlefield towards the project alignment. As much of the battlefield landscape within the vicinity of the project is heavily developed, field inspection was conducted from public ROW and streetscapes throughout the area. The Second Manassas Battlefield occupies a large landscape north and west of Manassas, with the majority over one mile away, however, several small lengths of the battle "avenue of approach" are located in closer proximity and a short segment is directly crossed by the project.

A site visit to the battlefield found that much of the landscape within the vicinity of the project alignment has been subject to extensive modern intrusion and development that has compromised the historic setting. Because of the compromised setting, none of the portion of the battlefield within one mile of the project is considered part of the potential National Register area.

As part of the project, structures along the project alignment to the south, as well as several directly within the limits of the battlefield will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As a result, the project will have a direct impact on the battlefield, however, because it will not introduce any substantially new or different components into the landscape, nor will it result in clearing or demolition of any associated features, the direct impact will be minimal. Because some of the structures within and bordering the battlefield may be increased in height, the project also has the potential to introduce indirect or visual impacts.

Inspection from representative vantage points throughout the portion of the battlefield in the vicinity of the project found that the project alignment and existing structures are screened from view from much of the battlefield by intervening vegetation and development, several structures are visible from portions of the battlefield in the immediate vicinity of the project, including where

the alignment crosses directly through the battlefield. In general, where existing structures are visible, they are seen in conjunction with and amongst extensive nonhistoric development and other infrastructure The existing structures along the length of the alignment that are in the vicinity of the battlefield and to be replaced as part of this project range from 60- to 132-feet in height and the proposed replacement structures will range from 80- to 140-feet in height. As such, many of the individual structures will be increased in height while others will remain the same or in some situations be decreased in height. Overall, the average height of structures along the alignment will increase by only 5 feet, from 110-feet to 115-feet. As such, it is anticipated visibility of the project will remain similar to current views, and remain visible with a slight change in height and configuration where it is already visible, and remain screened by intervening topography, development, and vegetation from locations where structures are not currently visible. This was confirmed by photo simulation from throughout the battlefield that depicts similar visibility of structures currently visible with no additional visibility of any structures currently screened. Therefore, the project will not introduce any substantial change in setting or viewshed of or from the battlefield, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Second Manassas Battlefield.

Figure 5-219 depicts the boundaries of the Second Manassas Battlefield in relation to the project area and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-220 through 5-228 are representative photographs of the battlefield, as well as those taken from locations within and near the battlefield towards the project area. Figures 5-229 through 5-237 provide photo simulation from the resource.

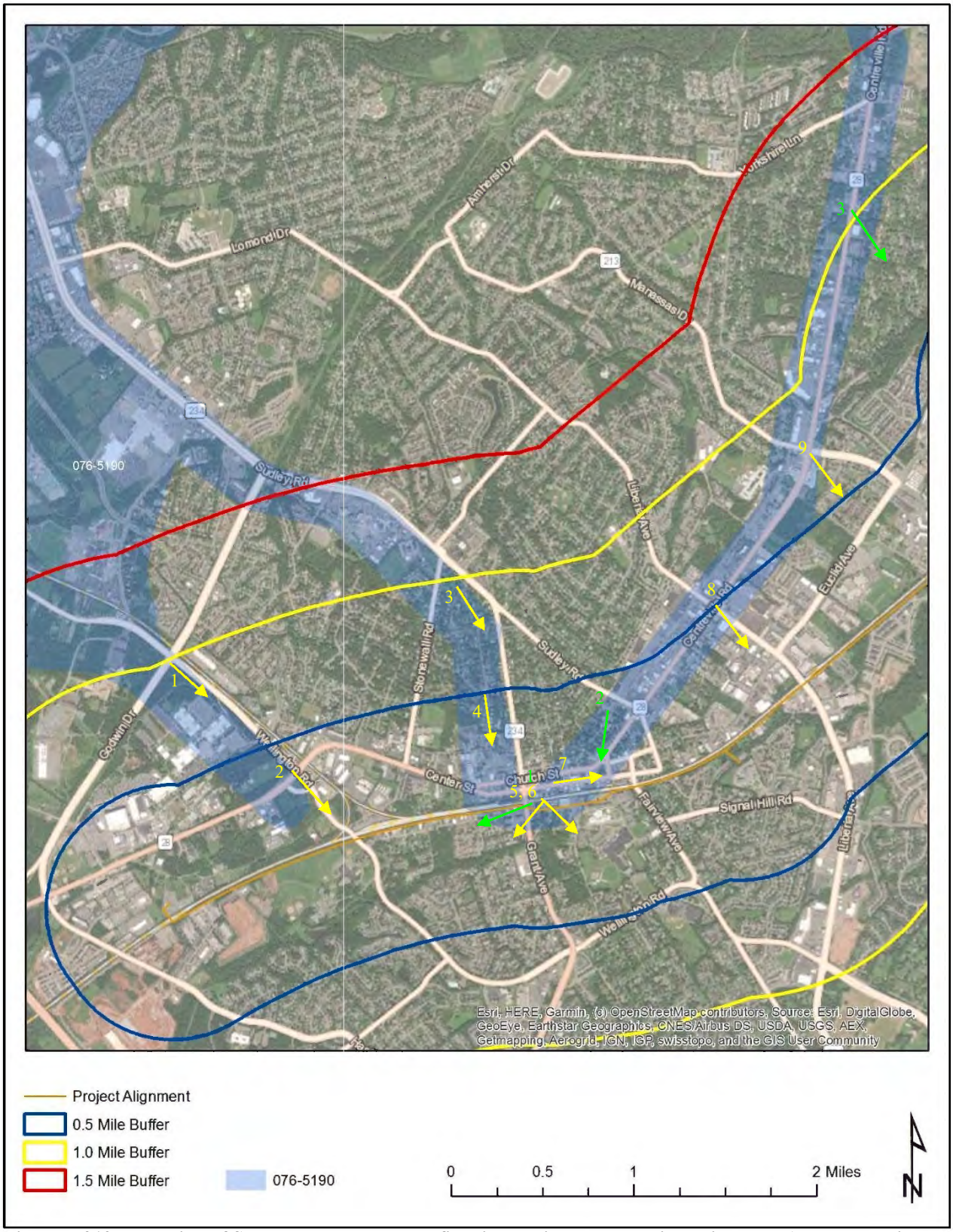

Figure 5-219: Location of Second Manassas Battlefield in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-220: Photo location 1- View from Wellington Road at Godwin Drive (No project structures visible), facing southeast.

Figure 5-221: Photo location 2- View from Nokesville Road overpass of Wellington Road (Multiple project structures visible), facing southeast.

Figure 5-222: Photo location 3- View from Grant Avenue near Sudley Road (No project structures visible), facing south.

Figure 5-223: Photo location 4- View from Grant Avenue at Portner Avenue (No project structures visible), facing south.

Figure 5-224: Photo location 5- View from Manassas Railroad Station (Project structure visible), facing southeast.

Figure 5-225: Photo location 6- View from Manassas Railroad Station (Multiple project structures visible), facing southwest.

Figure 5-226: Photo location 7- View from Center Street at East Street (Multiple project structures visible), facing east.

Figure 5-227: Photo location 8- View from Centerville Road at Liberia Road (One project structure visible), facing southeast.

Figure 5-228: Photo location 9- View from Centerville Road at Manassas Drive (No project structures visible. Multiple structures on another line not included in this project area visible), facing southeast.

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 155-0161 2B

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-51	1145	80.0
Str 2011-52	1214	0.0
Str 2011-53	1346	105.0
Str 2011-54	1775	120.0
Str 2011-55	2123	125.0
Str 2011-56	2641	120.0
Str 2011-57	2986	125.0
Str 2011-58	3358	120.0

Figure 5-229: Second Manassas Battlefield Simulation 1 – Simulation location, direction of view, and structures modeled from Manassas Rail Depot. Source: GTTE, LLC

Figure 5-230: Second Manassas Battlefield Simulation 1 – Existing view from Manassas Rail Depot. Source: GTTE, LLC

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Line #2011 230kV Partial Rebuild | **Location: 155-0161 2B** | **Proposed View**
(Location of towers not visible are overlaid with yellow tower icon)

Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.

This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-231: Second Manassas Battlefield Simulation 1 – Proposed view from Manassas Rail Depot – (Visible structure shown as they would appear). Source: GTTE, LLC

Structure	Distance (ft)	Height (ft)
Str 2011-41	2146	115.0
Str 2011-42	1981	115.0
Str 2011-43	1883	105.0
Str 2011-44	1816	125.0
Str 2011-45	1787	105.0
Str 2011-46	1798	105.0
Str 2011-46A	1981	100.0
Str 2011-47	2011	115.0
Str 2011-48	2100	115.0

Figure 5-232: Second Manassas Battlefield Simulation 2 – Simulation location, direction of view, and structures modeled from Annaburg. Source: GTTE, LLC

Figure 5-233: Second Manassas Battlefield Simulation 2 – Existing view from Annaburg. Source: GTTE, LLC

Figure 5-234: Second Manassas Battlefield Simulation 2 – Proposed view from Annaburg – (Structures not visible shown in yellow). Source: GTTE, LLC

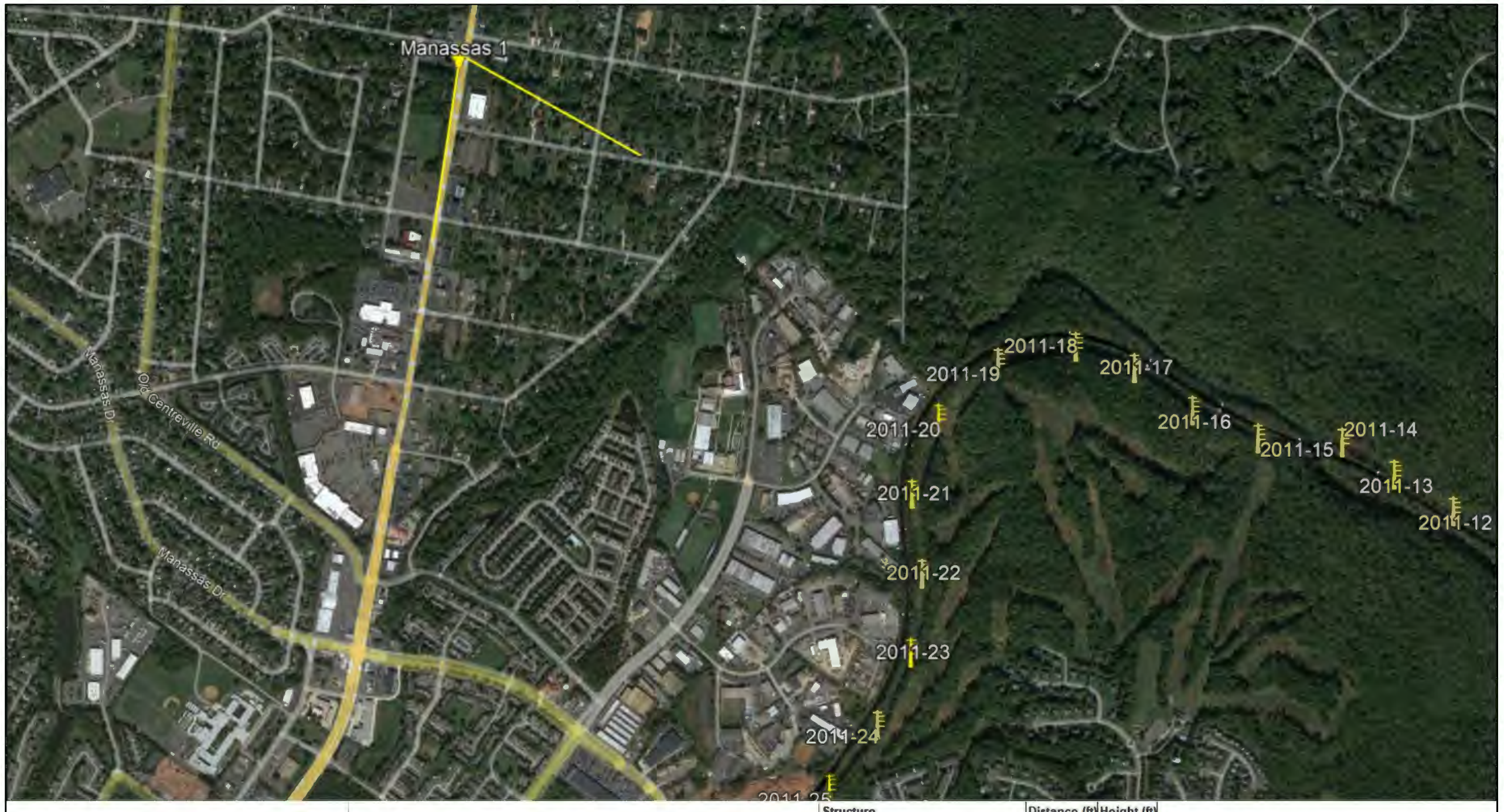

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: Manassas 1

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-19	5671	126.5
Str 2011-20	5492	121.5
Str 2011-21	5759	91.5
Str 2011-22	6339	96.5
Str 2011-23	6834	121.5
Str 2011-24	7199	126.5
Str 2011-25	7485	131.5
Str 2011-26	7809	141.5
Str 2011-27	8196	131.5

Figure 5-235: Second Manassas Battlefield Simulation 3 – Simulation location, direction of view, and structures modeled from Centerville Road. Source: GTTE, LLC

Figure 5-236: Second Manassas Battlefield Simulation 3 – Existing view from Centerville Road. Source: GTTE, LLC

Figure 5-237: Second Manassas Battlefield Simulation 3 – Proposed view from Centerville Road – (Structures not visible shown in yellow). Source: GTTE, LLC

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First Battle of Manassas/Bull Run (VDHR ID# 076-5335)

The First Manassas/Bull Run Battlefield is a Civil War battlefield that dates to 1861. The battle is regarded as one of the first major actions of the war. Following the attack on Fort Sumter in April of 1861, the U.S. Army spent months preparing for war. By July, President Abraham Lincoln prompted General Irvin McDowell to take an army south from Washington, D.C. and capture the Confederate capital in Richmond. While many U.S. Army officers assumed that McDowell would face no difficulty in doing so, the U.S. force was stopped by Confederates under General P.G.T. Beauregard near Manassas Junction on July 21st. After a day of fighting, the Confederates forced McDowell's soldiers into a retreat. General McDowell was taken out of command following this defeat. The most intact core areas of the battlefield have been listed in the NRHP as the Manassas National Military Park, while other portions are considered potentially eligible for listing in the NRHP.

Portions of the First Manassas Battlefield are located within one mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the battlefield and photographs were taken to document viewshed with emphasis on views from the battlefield towards the project alignment. As much of the battlefield landscape within the vicinity of the project is heavily developed, field inspection was conducted from public ROW and streetscapes throughout the area, however, pockets of more intact, undeveloped landscape are on private property, so inspection was limited to select publicly-accessible vantage points. The First Manassas Battlefield occupies a large landscape north and east of Manassas, with the majority over one mile away, however, the eastern edge of the battlefield is located in closer proximity to the project and roughly 1.5 mile of the project alignment extends directly through the battlefield.

A site visit to the battlefield found that much of the landscape within the vicinity of the project alignment has been subject to extensive modern intrusion and development that has compromised the historic setting. This includes widespread commercial and industrial development along the State Road 28 corridor and suburban residential development throughout much of the rest of the area. A smaller portion of the battlefield within proximity to the project remains undeveloped and is now part of the Hemlock Overlook Regional Park. This public park borders Bull Run, and is mostly wooded with a number of hiking trails and other recreational areas throughout.

As part of the project, structures along the project alignment crossing through and in the vicinity of the battlefield will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As a result, the project will have a direct impact on the battlefield, however, because it will not introduce any substantially new or different components into the landscape, nor will it result in clearing or demolition of any associated features, the direct impact will be minimal. Because some of the structures within and bordering the battlefield may be increased in height, the project also has the potential to introduce indirect or visual impacts.

Inspection from throughout the portion of the battlefield in the vicinity of the project found that generally the project alignment and existing structures are screened from view from much of the battlefield by intervening vegetation and development. The majority of the portions of the

battlefield that are publicly-accessible are densely developed and therefore visibility of existing structures is limited to a small industrial area set immediately adjacent to the project alignment. Several war-time features remain as public historic sites within the developed area including Signal Hill and the Louisiana Brigade Winter Camp. Inspection from these sites revealed visibility of multiple existing structures at Signal Hill and no visibility at the Louisiana Brigade Winter Camp. Another war-time feature, Battery Hill Redoubt is located within a private golf community so the earthwork features themselves are not accessible, however, public ROW bordering the site is accessible and inspection found no visibility of existing structures. The larger portion of the battlefield that is undeveloped is located with the Hemlock Overlook Regional Park that is open to the public, however, vantage points are limited to a network of trails through the woods which screen visibility of the line from most points. The exception is a handful of vantages in the immediate vicinity or along Bull Run Creek where gaps in the vegetation allow partial views of a limited number of structures and conductor. The existing structures along the length of the alignment that are in the vicinity of the battlefield and to be replaced as part of this project range from 80- to 125-feet in height and the proposed replacement structures will range from 85- to 125-feet in height. As such, several of the individual structures will be increased in height while others will remain the same, however, there will be no overall increase in structure height. As such, it is anticipated that visibility of the project will remain nearly identical to current views, with most structures screened from view by intervening topography, development, and vegetation. This was confirmed by photo simulation from representative vantages in the battlefield that depicts all structures will generally remain screened behind intervening terrain and vegetation with the exception of from the elevated Signal Hill site where several structures currently visible will remain as such with no apparent change in visibility. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the battlefield, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the First Manassas Battlefield.

Figure 5-238 depicts the boundaries of the First Manassas Battlefield in relation to the project area and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-239 through 5-248 are representative photographs of the battlefield, as well as those taken from locations within and near the battlefield towards the project area. Figures 5-249 through 5-257 provide photo simulation from the resource.

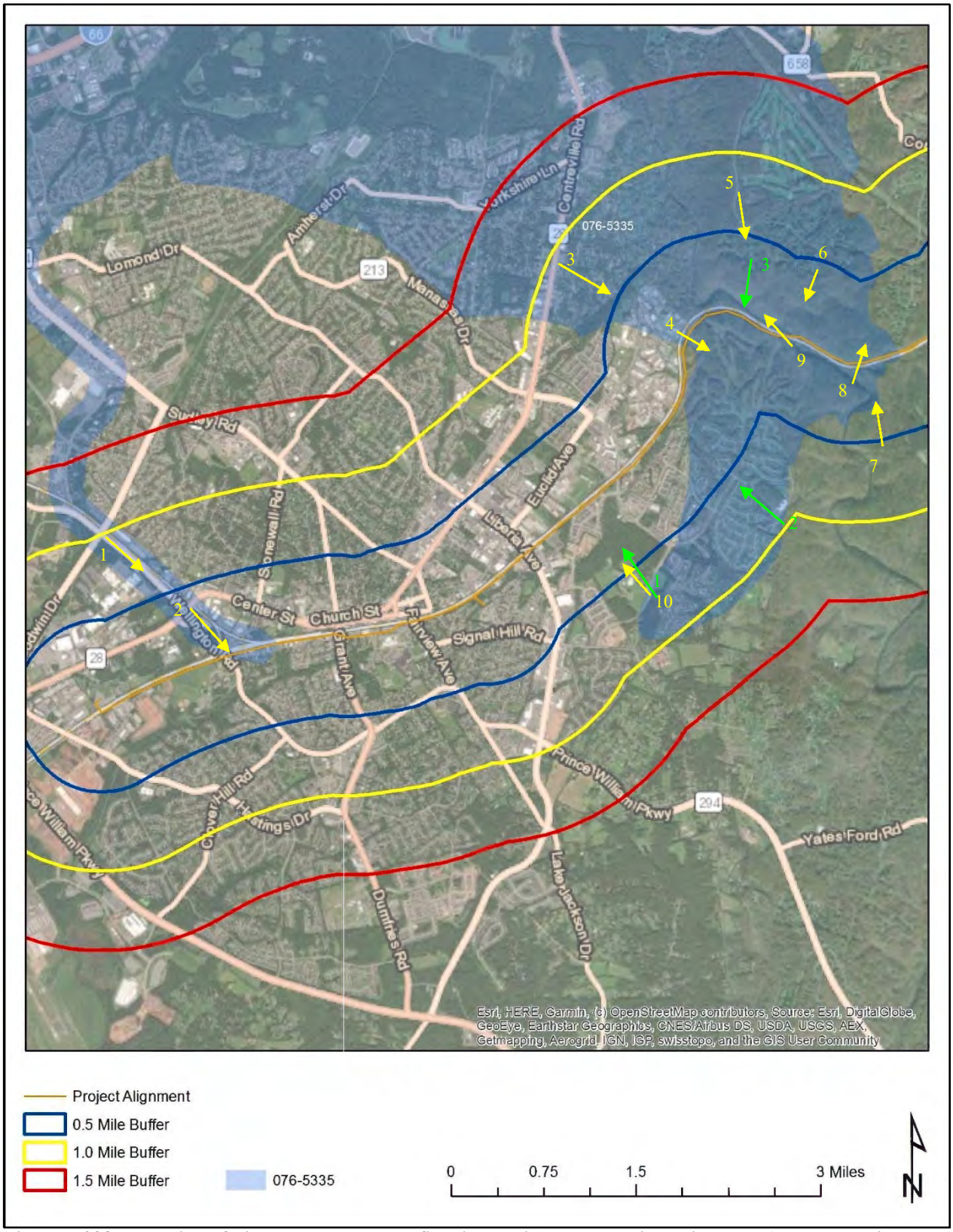

Figure 5-238: Location of First Manassas Battlefield in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-239: Photo location 1- View from Wellington Road at Godwin Drive (No project structures visible), facing southeast.

Figure 5-240: Photo location 2- View from Nokesville Road overpass of Wellington Road (Multiple project structures visible), facing southeast.

Figure 5-241: Photo location 3- View from Centerville Road at Spruce Street (No project structures visible), facing southeast.

Figure 5-242: Photo location 4- View from Industry Drive (Several project structures visible), facing southeast.

Figure 5-243: Photo location 5- View from Batter Hill Redoubt (Project structure visible), facing south.

Figure 5-244: Photo location 6- View from Balmoral Forest Road (No project structures visible), facing south.

Figure 5-245: Photo location 7- View from Hemlock Overlook Regional Park (No project structures visible), facing north.

Figure 5-246: Photo location 8- View from Hemlock Overlook Regional Park (Conductor visible but no project structures visible), facing north.

Figure 5-247: Photo location 9- View from O&A Railroad Bridge in Hemlock Regional Park (Existing conductor visible but no project structures visible), facing northwest.

Figure 5-248: Photo location 10- View from Louisiana Brigade Winter Camp (No project structures visible), facing northwest.

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 076-0016

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-30	3767	111.5
Str 2011-31	3853	116.5
Str 2011-32	4044	131.5
Str 2011-33	4354	131.5
Str 2011-34	4596	126.5
Str 2011-35	4868	116.5
Str 2011-36	5149	116.5
Str 2011-37	5552	121.5
Str 2011-38	5933	120.0

Figure 5-249: First Manassas Battlefield Simulation 1 – Simulation location, direction of view, and structures modeled from Signal Hill. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	**Line #2011 230kV Partial Rebuild**	**Location: 076-0016**	**Existing View**
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.	This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.	

Figure 5-250: First Manassas Battlefield Simulation 1 – Existing view from Signal Hill. Source: GTTE, LLC

Figure 5-251: First Manassas Battlefield Simulation 1 – Proposed view from Signal Hill – (Visible structures shown as they would appear. Structures not visible shown in yellow). Source: GTTE, LLC

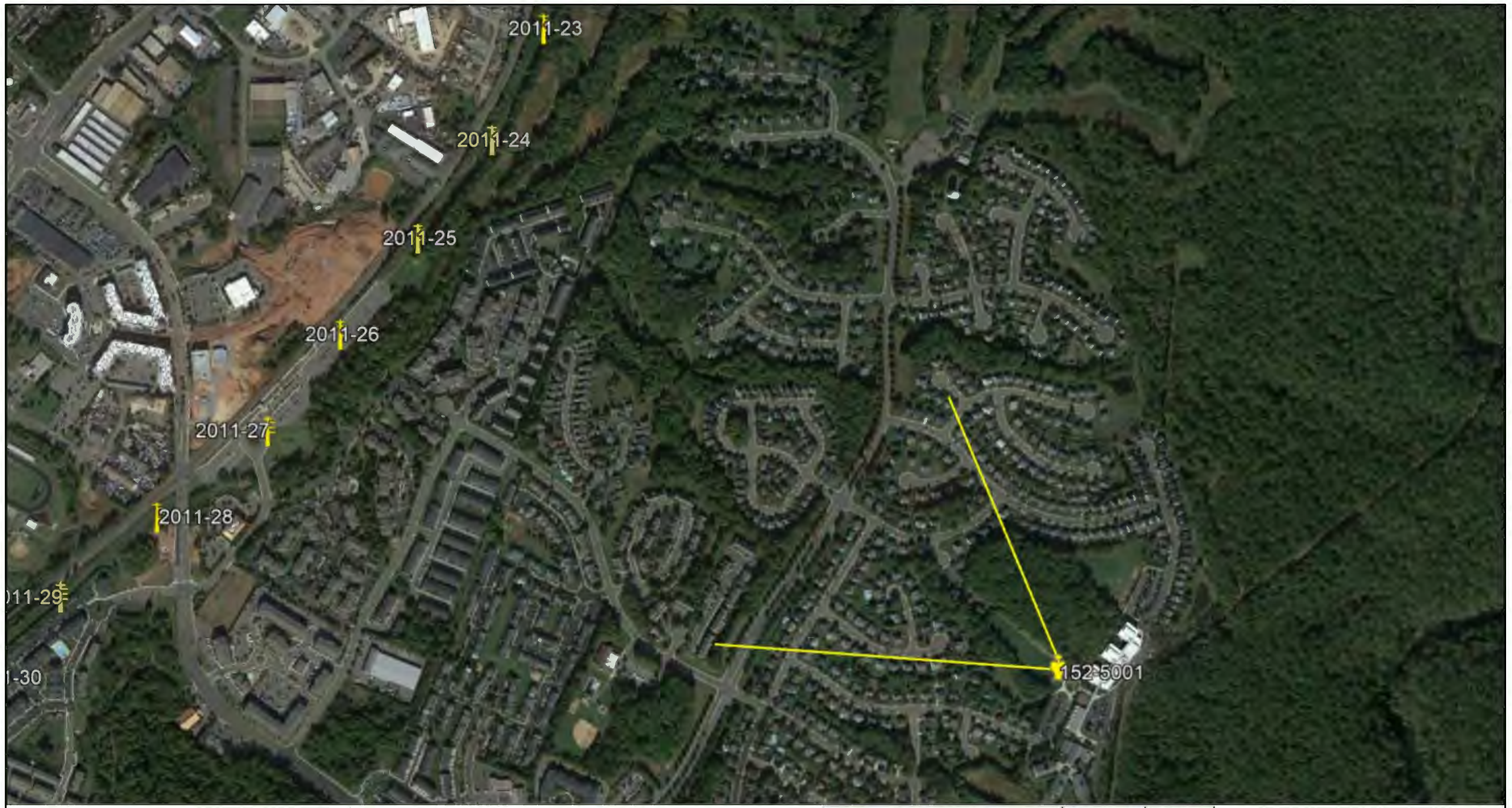

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 152-5001

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-23	4826	121.5
Str 2011-24	4555	126.5
Str 2011-25	4543	131.5
Str 2011-26	4669	141.5
Str 2011-27	4873	131.5
Str 2011-28	5400	141.5
Str 2011-29	5907	141.5
Str 2011-30	6456	111.5

Figure 5-252: First Manassas Battlefield Simulation 2 – Simulation location, direction of view, and structures modeled from Louisiana Brigade Winter Camp. Source: GTTE, LLC

Figure 5-253: First Manassas Battlefield Simulation 2 – Existing view from Louisiana Brigade Winter Camp. Source: GTTE, LLC

Figure 5-254: First Manassas Battlefield Simulation 2 – Proposed view from Louisiana Brigade Winter Camp – (Structures not visible shown in yellow). Source: GTTE, LLC

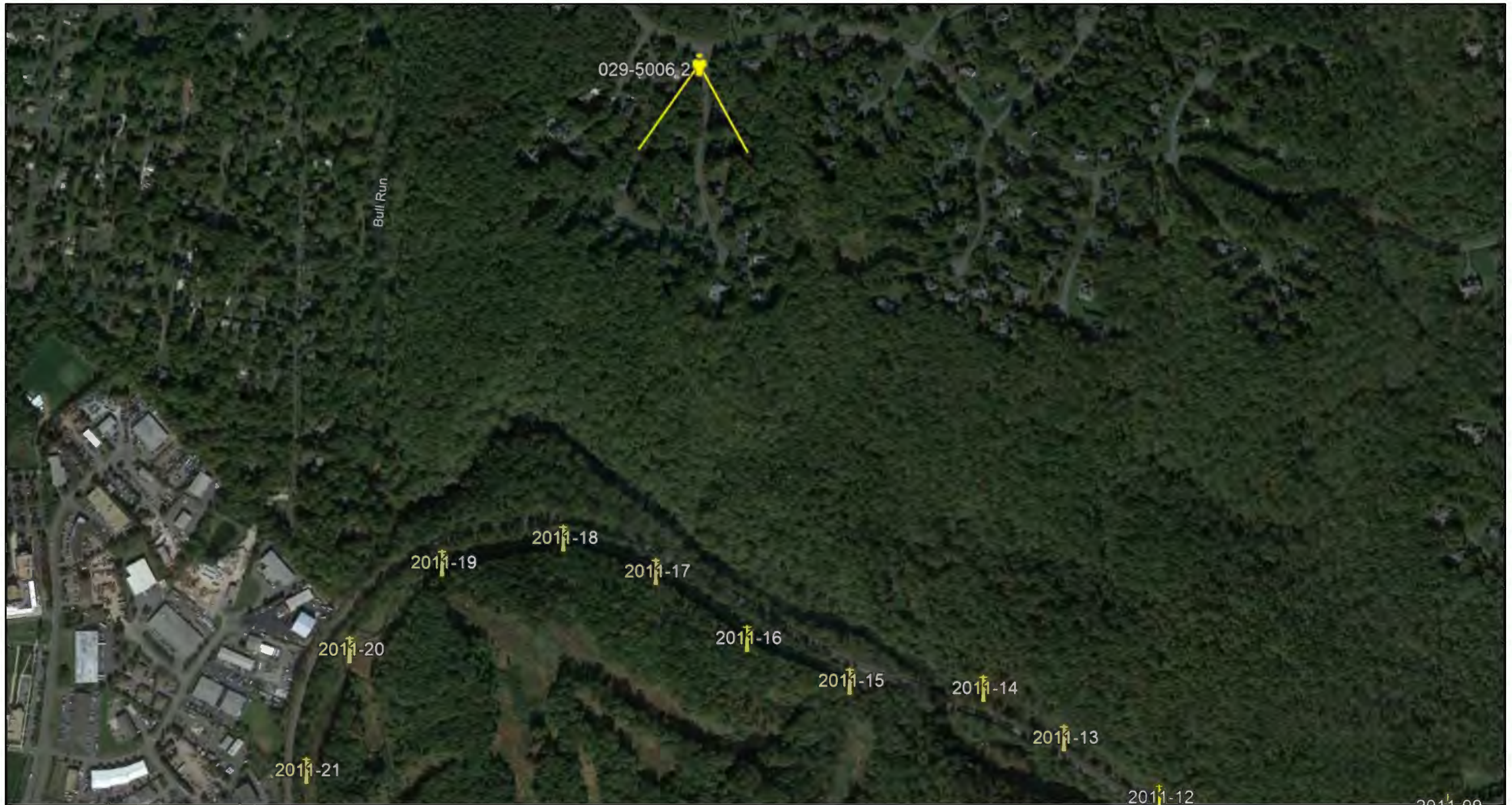

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 029-5006 2

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-14	3980	96.5
Str 2011-15	3691	126.5
Str 2011-16	3340	96.5
Str 2011-17	2953	111.5
Str 2011-18	2855	106.5
Str 2011-19	3254	126.5
Str 2011-20	3963	121.5

Figure 5-255: First Manassas Battlefield Simulation 3 – Simulation location, direction of view, and structures modeled from Battery Hill Redoubt. Source: GTTE, LLC

Figure 5-256: First Manassas Battlefield Simulation 3 – Existing view from Battery Hill Redoubt. Source: GTTE, LLC

Figure 5-257: First Manassas Battlefield Simulation 3 – Proposed view from Battery Hill Redoubt – (Structures not visible shown in yellow). Source: GTTE, LLC

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NATIONAL REGISTER OF HISTORIC PLACES – ELIGIBLE PROPERTIES

Located within 0.5 Mile of the Project or Closer

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Union Mills Historic District, Union Mills Road (VDHR ID# 029-0410)

The Union Mills Historic District encompasses a rural area of approximately 2,000 acres bordering Bull Run northeast of Manassas. In the late 18th century, following the American Revolution, this area of Fairfax County began to be referred to as Union Mills. Covering five or six square miles between Popes Head Run and Johnny Moore Run, it was recognized for its water powered mills. In addition to milling, local industries included talc quarrying, farming, grazing and lumbering. During the Civil War, Union Mills became strategically important to the Confederates due to the routing of the Orange and Alexandria Railroad through the region and as a defensive position for Manassas Junction. Ironically, Union Mills' location, which should have assured its success, led to its decline as nearby Clifton developed into a railroad and lumbering center. At this time, the area remains lightly developed and retains a number of prehistoric and historic quarries, Civil War features, and cemeteries that together have been recognized as a potentially NRHP-eligible historic district.

The Union Hills Historic District consists of a large landscape within one-half mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the district boundaries and photographs were taken to document viewshed with emphasis on views from the district towards the project alignment. Although much of the district landscape is private property associated with a residential community, inspection was conducted from streets and public ROW throughout the neighborhood. A small portion of the district coincides with the Hemlock Overlook Regional Park and therefore inspection was conducted from accessible trails and vantages within the park. The Union Hills Historic District is located northeast of Manassas near the eastern terminus of the project alignment. The project alignment extends in a generally east-west orientation through the landscape to the south of the district, bordering the southern boundary while also directly crossing through a short portion of the district.

A site visit to the district found that much of the landscape of the district is thickly wooded with a rolling topography. Although much of the district is developed by a residential community, the homes tend to be set on small clearings within the otherwise wooded landscape. Bull Run flows along and through the southern edge of the district within a low area that is bordered to the south side by a regional park which is also thickly wooded with the exception of several hiking trails. Due to the topography and vegetation within and bordering the district, visibility within and out of the district boundaries is short and the contributing features are generally not visible from public ROW.

As part of the project, structures along the project alignment within and bordering the district will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be a direct impact to the district, however, construction will not impact any associated or contributing features and therefore the direct impact will be minimal. Because some of the structures on the project alignment will be increased in height, the project also has the potential to introduce indirect or visual impacts.

Inspection from accessible vantages throughout the district found that none of the existing structures on the project alignment are visible from anywhere on the north side of Bull Run due to

topography and vegetation. The portion of the district north of Bull Run is occupied by a residential neighborhood and although the nearest cul-de-sac ends roughly 0.13 mile from the alignment, the majority of the streetscapes are more than 0.4 mile from the alignment and the landscape between these vantages and the alignment is thickly wooded and heavily sloped. Inspection from the south side of Bull Run which is within the Hemlock Overlook Regional Park found that the woods and slope in this portion of the district also inhibit views of existing transmission structures from most trails and vantages with the exception of a short length of hiking trail bordering the creek. Even though the project alignment is set nearly adjacent to the creek and trail along this length, the vegetation and topography allow only narrow and interrupted views of the top of several structures and short lengths of conductor. The existing structures within and adjacent to the district to be replaced as part of this project range from 80- to 125-feet in height and the proposed replacement structures will range from 85- to 125-feet in height. As such, the heights of several individual proposed structures may vary or increase slightly from their existing configuration, although none will be any taller than the existing structures. As such, it is anticipated that the intervening topography and vegetation will continue to completely screen visibility of the replacement structures from most vantages throughout the district and where existing structures are visible in close proximity, the views will not noticeably change. This was confirmed by photo simulation from both sides of Bull Run within the district that depicts all structures remaining screened beneath the intervening terrain and vegetation. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the district which currently includes only partial views of a limited number of structures from discrete vantages and this will not change, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Union Hills Historic District.

Figure 5-258 depicts the location of Union Hills Historic District in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-259 through 5-265 are representative photographs of the district, as well as those taken from locations within the district boundaries towards the project area. Figures 5-266 through 5-271 provide photo simulation from the district.

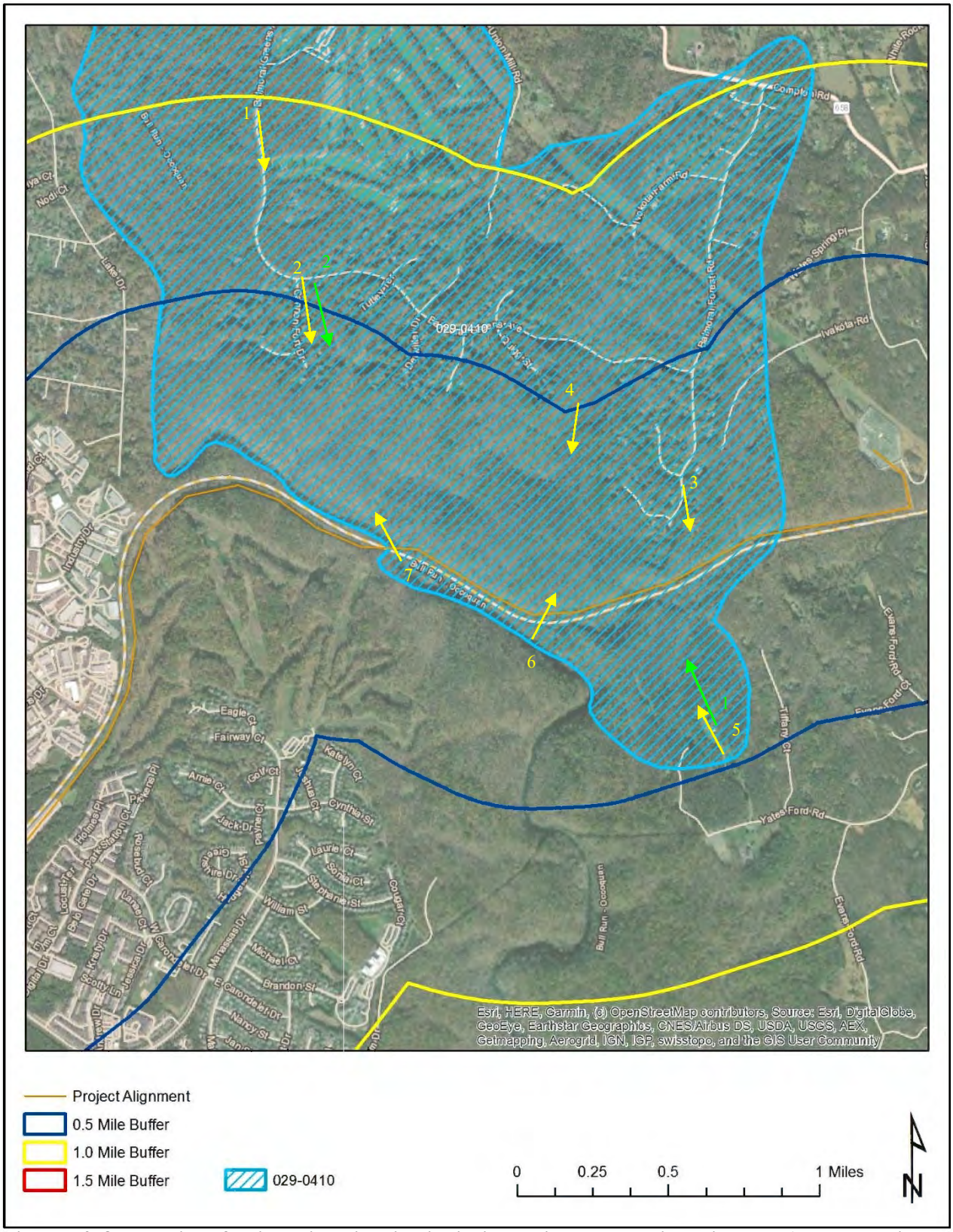

Figure 5-258: Location of Union Mills Historic District in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-259: Photo location 1- Representative view of Union Mills Historic District along Balmoral Greens Road, facing east.

Figure 5-260: Photo location 2- View from Battery Hill Redoubt at Balmoral Greens Road and Cannon Fort Road (No project structures visible), facing south.

Figure 5-261: Photo location 3- View from Balmoral Forest Road (No project structures visible), facing south.

Figure 5-262: Photo location 4- View from hiking trail within Westfields Golf Club (no project structures visible), facing south.

Figure 5-263: Photo location 5- View from Hemlock Overlook Regional Park (No project structures visible), facing north.

Figure 5-264: Photo location 6- View from Hemlock Overlook Regional Park (Conductor visible but no project structures visible), facing north.

Figure 5-265: Photo location 7- View from O&A Railroad Bridge in Hemlock Regional Park (Existing conductor visible but no project structures visible), facing northwest.

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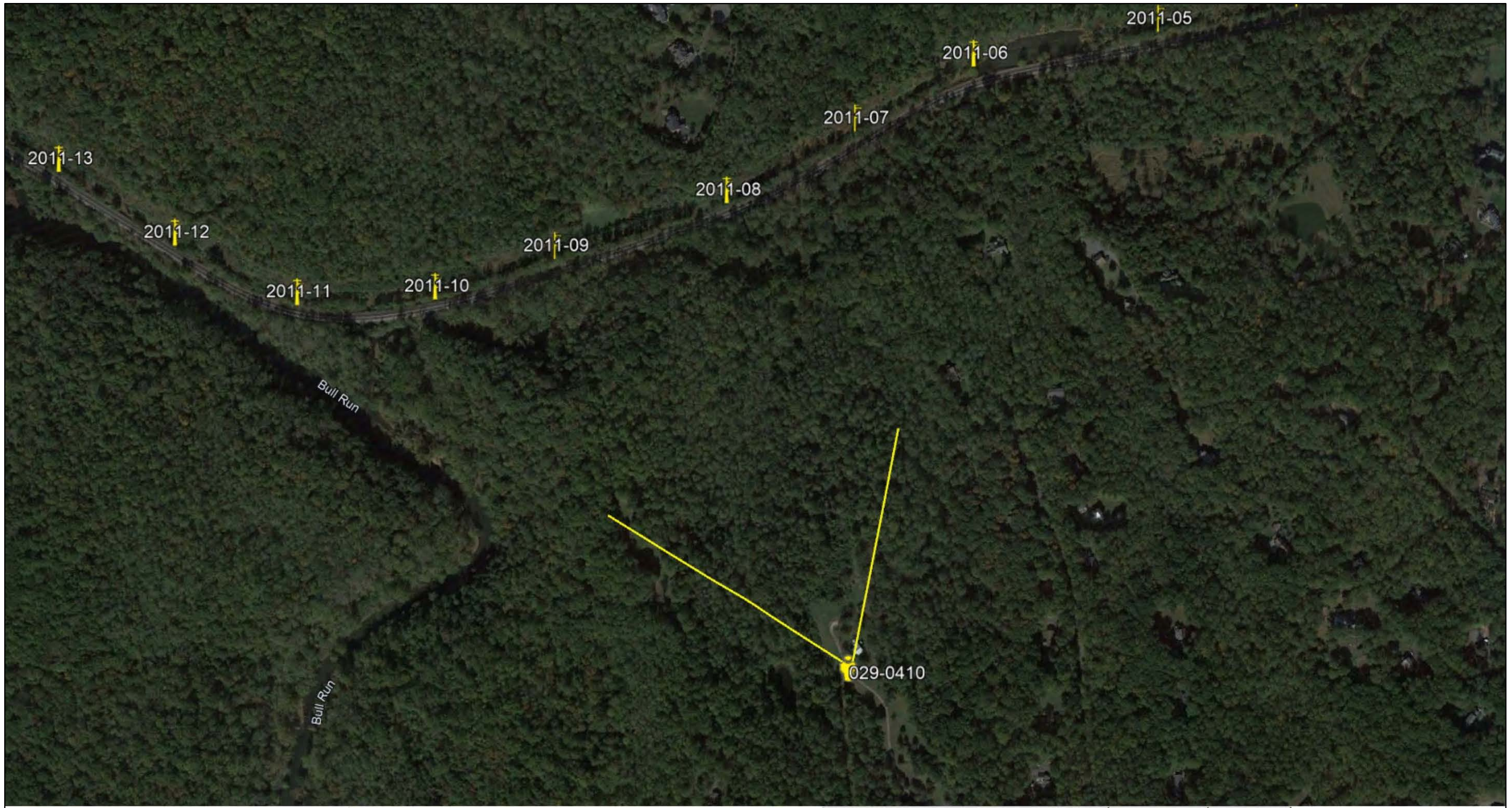

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 029-0410

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-06	2766	111.5
Str 2011-07	2417	106.5
Str 2011-08	2171	86.5
Str 2011-09	2269	101.5
Str 2011-10	2502	121.5
Str 2011-11	2952	121.5

Figure 5-266: Union Mills Historic District Simulation 1 – Simulation location, direction of view, and structures modeled from Hemlock Overlook Regional Park. Source: GTTE, LLC

Figure 5-267: Union Mills Historic District Simulation 1 – Existing view from Hemlock Overlook Regional Park. Source: GTTE, LLC

Figure 5-268: Union Mills Historic District Simulation 1 – Proposed view from Hemlock Overlook Regional Park – (Structures not visible shown in yellow). Source: GTTE, LLC

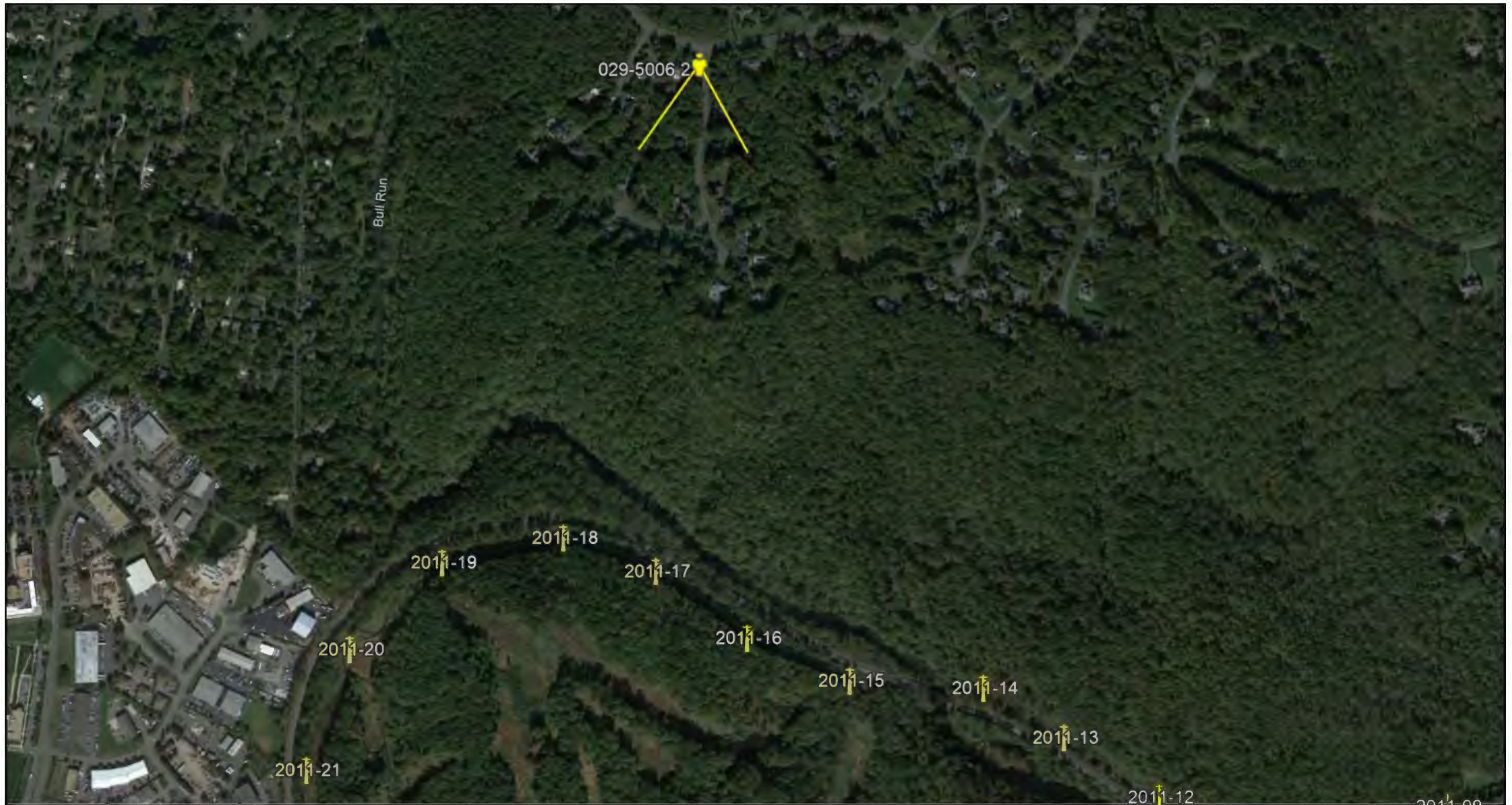

Photo simulations prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 029-5006 2

Line # 2011 230kV Partial Rebuild Project (Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-14	3980	96.5
Str 2011-15	3691	126.5
Str 2011-16	3340	96.5
Str 2011-17	2953	111.5
Str 2011-18	2855	106.5
Str 2011-19	3254	126.5
Str 2011-20	3963	121.5

Figure 5-269: Union Mills Historic District Simulation 2 – Simulation location, direction of view, and structures modeled from Balmoral Greens Avenue. Source: GTTE, LLC

Figure 5-270: Union Mills Historic District Simulation 2 – Existing view from Balmoral Greens Avenue. Source: GTTE, LLC

Figure 5-271: Union Mills Historic District Simulation 2 – Proposed view from Balmoral Greens Avenue – (Structures not visible shown in yellow). Source: GTTE, LLC

Bennett School (VDHR ID# 076-0061)

The building was constructed on approximately 2 acres of land donated by Dr. Maitland C. Bennett, for use as the public agricultural school authorized to be built in the 8th Congressional district by the Virginia General Assembly in 1908. The school was never actually used for that purpose, however. Bennett was used as soon as it was completed for primary instruction and teacher training from the beginning due to larger elementary enrollment during the period. The Bennett School was designed by Charles M. Robinson, and was constructed at a cost of $16,000. As workers dug the building's foundations between 1908 and 1909, they found the graves of unknown Civil War soldiers. The Manassas School District trustee, George Carr Round, a Union veteran, and Schools Superintendent George Tyler, a Confederate veteran, ordered that the bones remain and the school was built over the graves. Bennett was used for the lower school grades until 1969 when it was converted to County offices. The building at present houses the Prince William County Police Department, Fire and Rescue Services, and Manpower Services. In 2002, the school was found to be locally significant under Criteria A (Broad Patterns of History) and Criteria C (Architecture) and determined eligible for listing in the NRHP.

The Bennett School is set on a small property located within one-half mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the property and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. As the school is recognized as a historic site within the downtown area of Manassas, the property is open to the public and inspection was conducted from the property as well as the sidewalk and parking lots bordering it. The Bennett School property is located within the downtown core of Manassas north of the central length of the project alignment. The project alignment extends in a generally east-west orientation through the landscape to the south, roughly 0.17 mile away at its nearest point.

A site visit to the resource found that the property is set within a dense urban area and occupies a large portion of a city block. The school building is set centrally on an open lawn just back from the road. Parking lots border the site to one side and the rear. Because the resource is within a dense urban area, views of the building are limited to the streetscapes and sidewalks in the immediate vicinity, while views outward are also inhibited by the surrounding development.

As part of the project, structures along the project alignment to the south (front) will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the property, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the property and immediate vicinity found that several of the existing structures on the project alignment are visible above and between other development set across the road. The building set directly across the road is just one-story in height and therefore structures can be seen above the roofline, as well as in the gap between it and adjacent buildings. Meanwhile, the adjacent buildings are taller, two- and three-stories in height which screen the existing transmission structures beyond. The existing structures within the vicinity to be replaced as part of this project

range from 105- to 129-feet in height and the proposed replacement structures will range from 105- to 125-feet in height. As such, the heights of the individual proposed structures will generally remain the same, although the tallest existing structure will be decreased in height. As such, it is anticipated that the currently visible structures will remain as such, although visibility may be reduced, while the intervening development will continue to screen structures replacing those that are currently not visible. This was confirmed by photo simulation from the property that depicts nearly identical visibility of replacement structures. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which already includes views of several structures which will not noticeably change in height, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to Bennett School.

Figure 5-272 depicts the location of Bennett School in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-273 through 5-276 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area. Figures 5-277 through 5-279 provide photo simulation from the resource.

Figure 5-272: Location of Bennett School in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-273: Photo location 1- Representative view of Bennett School front facade, facing north.

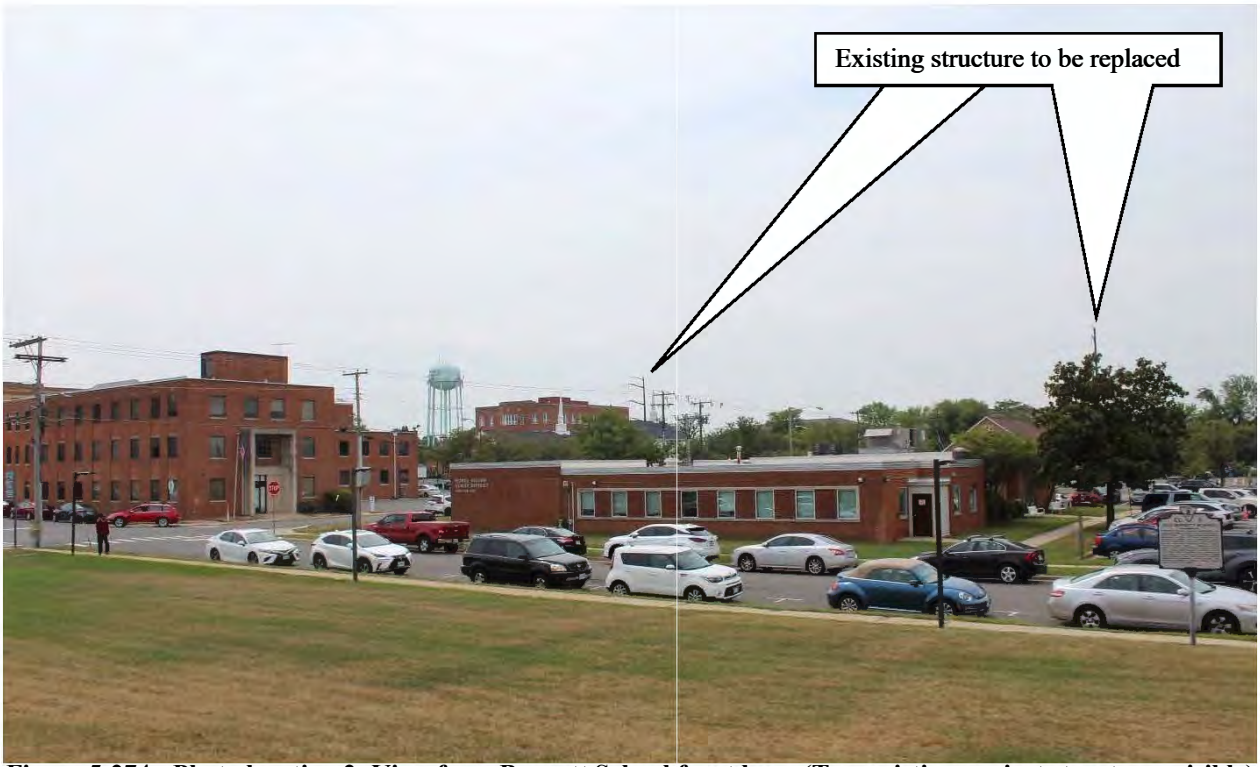

Figure 5-274: Photo location 2- View from Bennett School front lawn (Two existing project structures visible), facing southeast.

Figure 5-275: Photo location 3- View from Bennett School front lawn (Two existing project structures visible), facing southwest.

Figure 5-276: Photo location 4- View from parking lot to rear of Bennett School (Two existing project structures visible), facing south.

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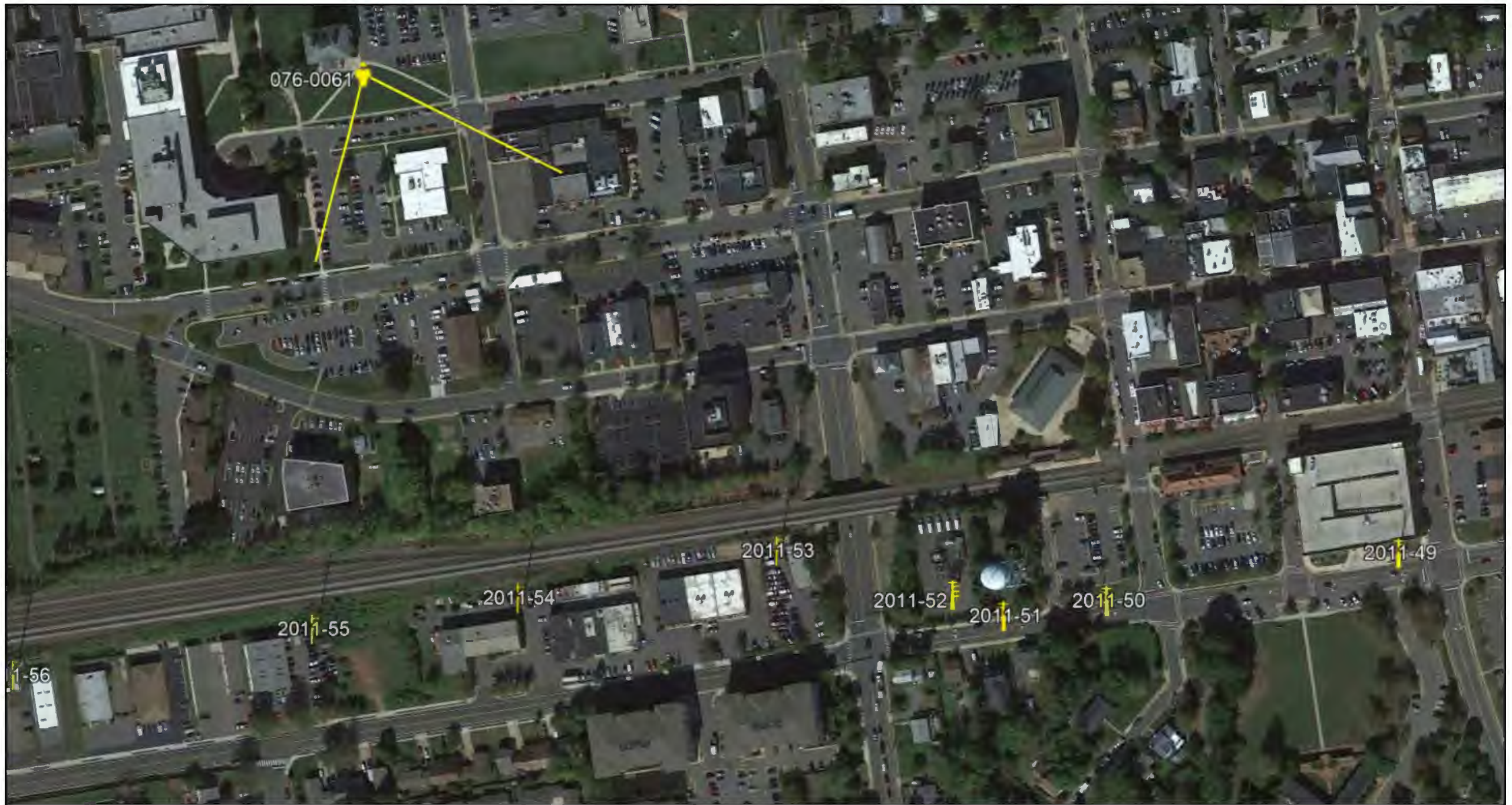

Photo simulations
prepared by:
GTTE LLC
email:
info@gttellc.com
703 447 1350

Location: 076-0061

Line # 2011 230kV Partial Rebuild Project
(Clifton to Winters Branch)

Structure	Distance (ft)	Height (ft)
Str 2011-50	1609	80.0
Str 2011-51	1481	80.0
Str 2011-52	1425	0.0
Str 2011-53	1114	105.0
Str 2011-54	961	120.0
Str 2011-55	981	125.0

Figure 5-277: Bennett School Simulation 1 – Simulation location, direction of view, and structures modeled front of building. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	Line #2011 230kV Partial Rebuild	Location: 076-0061	Existing View
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.

Figure 5-278: Bennett School Simulation 1 – Existing view from front of building. Source: GTTE, LLC

Photo simulations prepared by: GTTE LLC email: info@gttellc.com 703 447 1350	Line #2011 230kV Partial Rebuild	Location: 076-0061	Proposed View (Location of towers not visible are overlaid with yellow tower icon)	0 1' 2' 3' 4'
	Photo Simulations and diagrams represent approximate heights for electric transmission structures from the conceptual design used for the proposed project. These illustrations do not necessarily depict exact structure design or location.		This simulation is designed for viewing on a computer monitor. To achieve the correct scale, the image should be increased or decreased in size until the scale above measures 4". When viewed with the eye at 31" from the screen the image will have the same scale as if the viewer were standing at the camera location.	

Figure 5-279: Bennett School Simulation 1 – Proposed view from front of building – (Visible structures shown as they would appear). Source: GTTE, LLC

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Pickeral House (VDHR ID# 055-0171)

The Pickeral House was previously described as a two-story Folk Victorian frame single dwelling built circa 1875. The home was associated with the early development Manassas and was built by one of the earliest developers. The earliest deed firmly establishing the town's existence is dated September 11, 1865, when Fewell sold a lot to Sumner Fitts of New York. Fitts built the first hotel in town, the Eureka House (1865), as well as a number of residences, including the Pickeral House. As such, the house was determined potentially eligible for listing in the NRHP and was also considered contributing to the Manassas Historic District. Unfortunately, the Pickeral House, which was the last known Fitts-built house located within the historic district, was demolished in 1986.

The Pickeral House site is located within one-half mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the property and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. As the site is located within the downtown core of Manassas, inspection was conducted from public ROW as well as sidewalks immediately bordering it. The property is located north of the central length of the project alignment. The project alignment extends in a generally east-west orientation through the landscape to the south, roughly 0.13 mile away at its nearest point.

A site visit to the resource confirmed that the original building has been demolished and no evidence remains, and also revealed that the site has been further compromised by recent redevelopment including a surface parking lot and multi-story office building. While inspection revealed that the existing transmission line and several structures are visible from the site, it is seen in conjunction with other modern development and infrastructure.

Visual impacts are defined as the introduction of visual elements that might diminish or alter the setting of any historic property listed on or eligible for listing on the NRHP. As this building has been demolished, it no longer retains architectural significance, and as the setting around and within the site is also compromised by modern development, this project which entails the rebuild of an existing transmission line already within the viewshed will not further alter or diminish the qualities that made it eligible for listing. Therefore, it is D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose ***no impact*** to the Pickeral House.

Figure 5-280 depicts the location of the Pickeral House site in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-281 and 5-282 are representative photographs of the site, as well as those taken from locations near the site towards the project area.

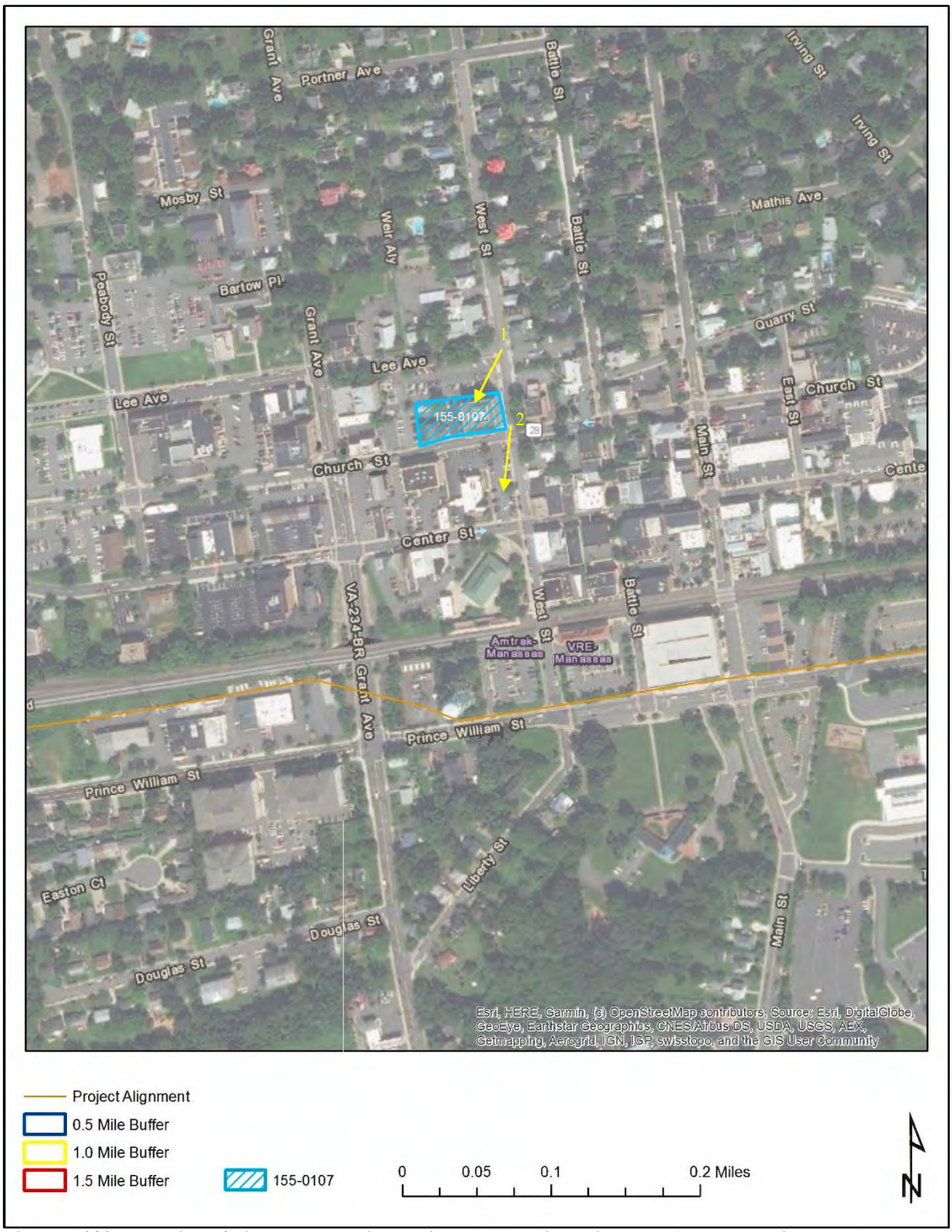

Figure 5-280: Location of Pickeral House in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-281: Photo location 1- Representative view of Pickeral House site (No project structures visible), facing southwest.

Figure 5-282: Photo location 2- View from vicinity of Pickeral House site (One existing project structure visible), facing south.

Manassas Cemetery and Confederate Cemetery in Manassas (VDHR ID# 155-0162)

The Manassas Cemetery and Confederate Cemetery in Manassas was erected by the Ladies Memorial Association of Manassas, as a burial ground for Confederate Soldiers, post-Civil War. The cemetery currently comprises approximately 300-500 internments. Stone piers note the side entrance to the cemetery, while an arched sign marks the main entrance. There are two mausoleums within the cemetery. In the southwest portion of the cemetery, there is a large monument commemorating Confederate soldiers. Due to its association to early memorialization efforts following the Civil War, the cemetery was determined potentially eligible for listing in the NRHP under Criterion A.

The Manassas Cemetery property is located within one-half mile of the project and was therefore subject to assessment for potential impacts. In order to assess the potential impact of the proposed project, visual inspection was conducted of the setting around and within the property and photographs were taken to document viewshed with emphasis on views from the resource towards the project alignment. As a municipal cemetery, the property is open to the public and inspection was conducted from the property as well as public ROW along the front edge. The Manassas Cemetery is located just west of the downtown core of Manassas north of the central length of the project alignment. The project alignment extends in a generally east-west orientation through the landscape south of the cemetery, just across a railroad corridor, roughly 0.03 mile away at its nearest point.

A site visit to the resource found that the property is set within a dense urban area and is bordered by modern development to three sides and a railroad corridor to the rear. Because the cemetery is flanked by private properties to both sides and a railroad corridor that is not open to the public to the rear, views of it are limited to along Center Street to the rear. Because the interior of the cemetery is lined by vegetation along both sides and the rear, views outward are also generally screened and limited to short distances.

As part of the project, structures along the project alignment to the south (rear) will be replaced on a one-to-one basis near the location of the existing structures, and will not require any additional ROW or clearing. As such, there will be no direct impact to the property, however, because some of the structures on the project alignment will be increased in height, the project has the potential to introduce indirect or visual impacts.

Inspection from the property and immediate vicinity found that several of the existing structures on the project alignment in the immediate vicinity are visible above the treeline and adjacent development from within and bordering the cemetery, however, those set further away are screened by additional development. The existing structures within the vicinity to be replaced as part of this project range from 115- to 129-feet in height and the proposed replacement structures will range from 120- to 125-feet in height. As such, the heights of the individual proposed structures may vary or increase slightly, although the tallest existing structure will be decreased in height. As such, it is anticipated that visibility will remain similar following the project with limited views of those structures in the immediate vicinity while those further away will remain screened. Therefore, the project will not introduce any noticeable change in setting or viewshed of or from the resource which already includes views of several structures which

will not noticeably change in height, and it is therefore D+A's opinion that the Line #2011 230kV Partial Rebuild (Clifton to Winters Branch) Project will pose no more than a ***minimal impact*** to the Manassas Cemetery.

Figure 5-283 depicts the location of Manassas Cemetery in relation to the project alignment and viewshed buffers, with the location and direction of all representative photographs and photo simulations. Figures 5-284 through 5-286 are representative photographs of the resource, as well as those taken from locations near the resource towards the project area.

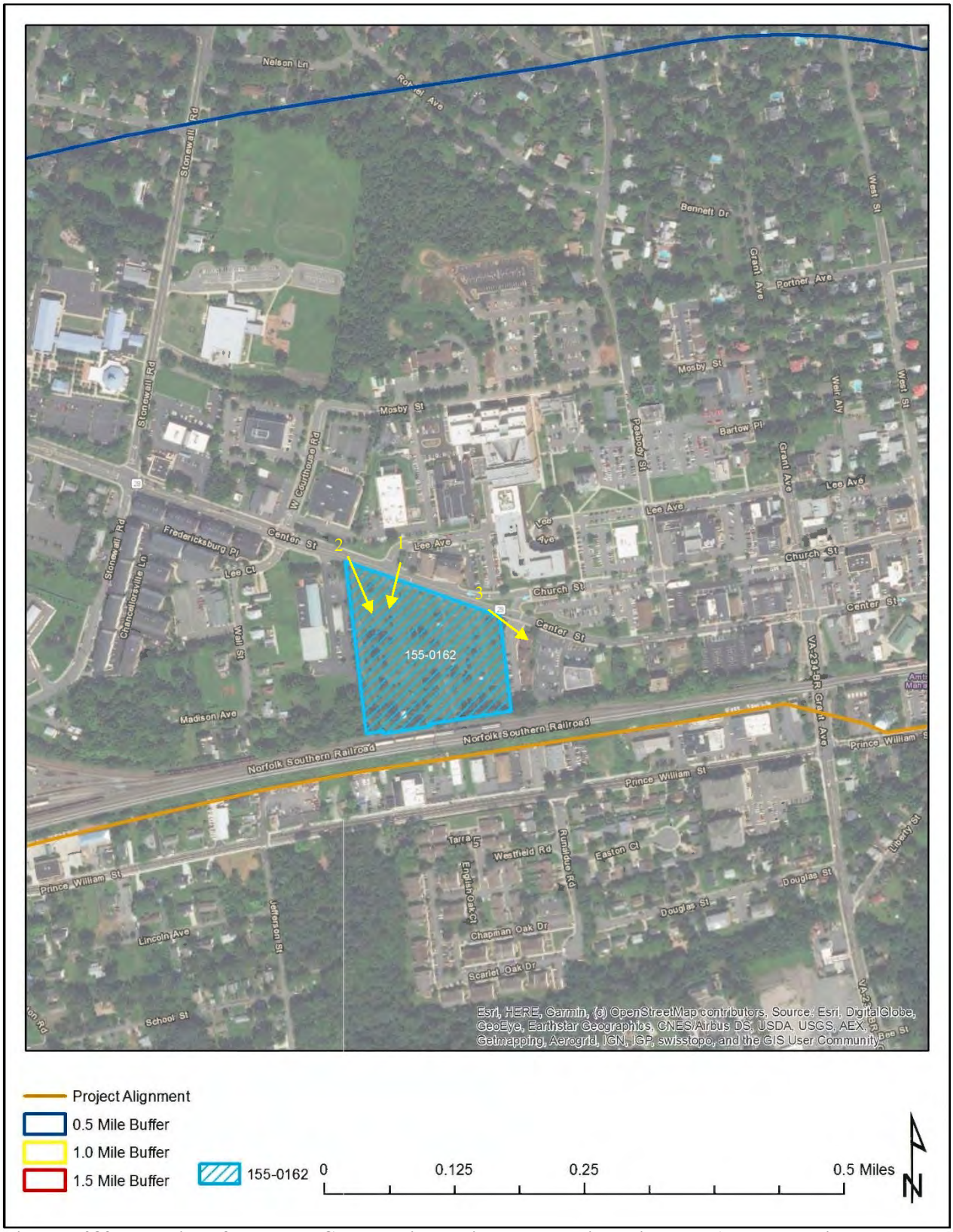

Figure 5-283: Location of Manassas Cemetery in relation to the project alignment (Representative photographs and views towards the project area depicted in yellow, photo simulations depicted in green).

Figure 5-284: Photo location 1- Representative view of gate to cemetery (One project structure visible), facing south.

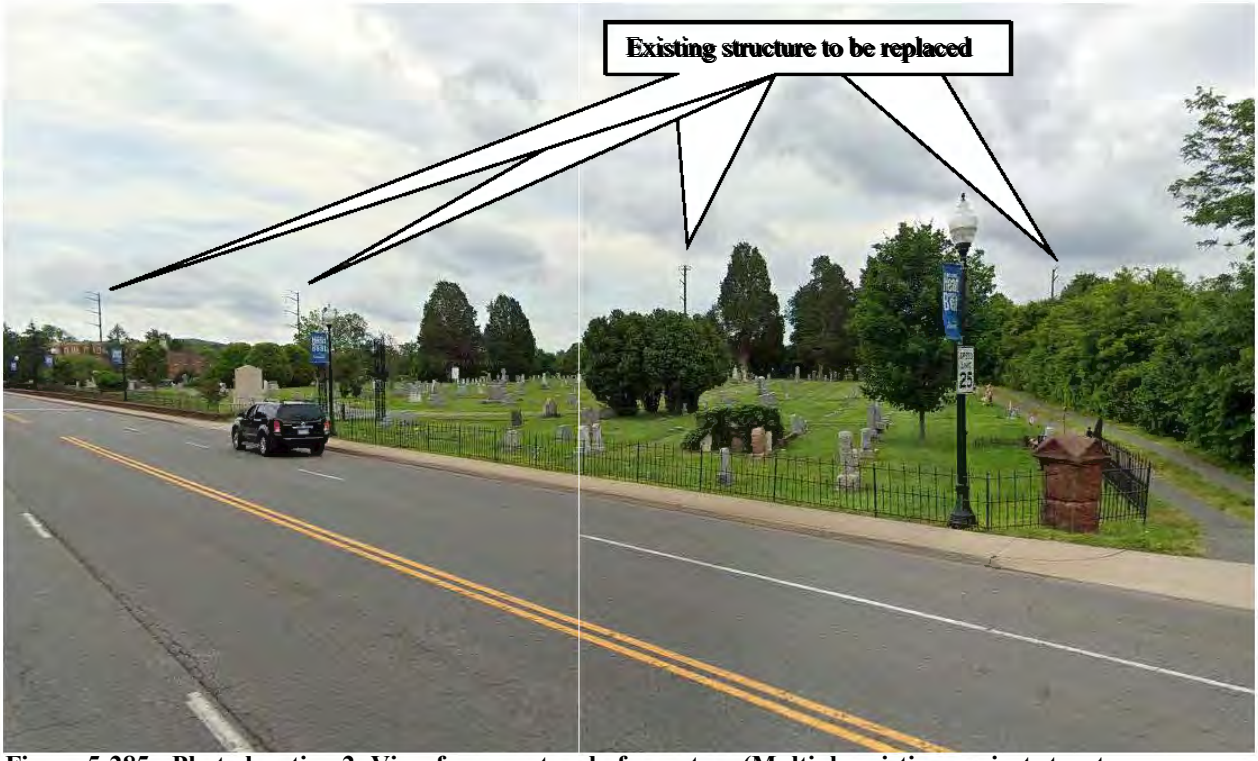

Figure 5-285: Photo location 2- View from west end of cemetery (Multiple existing project structures visible), facing southeast.

Figure 5-286: Photo location 3- View from east end of cemetery (Two existing project structures visible), facing southeast.

6. SUMMARY OF POTENTIAL IMPACTS

As part of this pre-application analysis of cultural resources for the Line #2011 230 kV Partial Rebuild Project (Clifton to Winters Branch), potential impacts to previously recorded historic properties designated an NHL, NRHP-listed, or considered eligible for listing in the NRHP within the VDHR-defined buffered tiers around the rebuild portion of the project were assessed in accordance with the VDHR guidelines. The new build length of the project was previously coordinated with the VDHR (File No. 2021-4980) and is therefore not included in this study. For the purposes of this analysis, an impact is one that alters, either directly or indirectly, those qualities or characteristics that qualify a particular property for listing in the NRHP and does so in a manner that diminishes the integrity of a property's materials, workmanship, design, location, setting, feeling, and/or association. With respect to transmission lines, direct impacts typically are associated with ground disturbance resulting from ROW clearing and structure construction. Indirect impacts typically are associated with the introduction of new visual elements or changes to the physical features of a property's setting or viewshed. According to VDHR guidance, project impacts are characterized as such:

- **None** – Project is not visible from the property
- **Minimal** – Occur within viewsheds that have existing transmission lines, locations where there will only be a minor change in tower height, and/or views that have been partially obstructed by intervening topography and vegetation.
- **Moderate** – Include viewsheds with expansive views of the transmission line, more dramatic changes in the line and tower height, and/or an overall increase in the visibility of the route from the historic properties.
- **Severe** – Occur within viewsheds that do not have existing transmission lines and where the views are primarily unobstructed, locations where there will be a dramatic increase in tower visibility due to the close proximity of the route to historic properties, and viewsheds where the visual introduction of the transmission line is a significant change in the setting of the historic properties.

With regards to architectural resources, there are a total of twenty-two (22) historic properties located within the defined study tiers that warrant consideration of impacts. This includes no (0) NHLs located within 1.5 mile of the proposed project or closer, fourteen (14) properties listed in the NRHP located within 1.0 mile or closer of the project, four (4) battlefields located within 1.0 mile or closer of the project, no (0) historic landscapes within 1.0 mile or closer of the project, and four (4) properties that have been determined eligible or potentially eligible for listing in the NRHP within 0.5 mile or closer of the project. Of these resources, one (1) of the NRHP-listed properties, three (3 battlefields, and one (1) NRHP-eligible property are directly crossed by the project alignment

Inspection of and from these resources found that most are located within the vicinity of the City of Manassas and the associated urban and suburban areas. As such, the setting of most resources already includes a wide variety of nonhistoric features including dense development and modern infrastructure. The existing project transmission line and multiple structures are currently visible from many of the resources, particularly those in close proximity to or crossed by the project. Meanwhile, the line and structures tend to be partially to completely screened

from resources set further away due to the development and vegetation patterns in the area. Because the line is to rebuilt with replacement structures generally in the same locations and the same or only minimal increase in height, there will not be a substantial, or in most cases perceptible change in visibility as a result of the project. ***It is therefore D+A's opinion that based upon the definition of impacts above, the proposed Line #2011 230 kV Partial Rebuild Project (Clifton to Winters Branch) – Rebuild Portion, will have no more than a minimal impact on any architectural resources that are designated an NHL, listed in the NRHP, or determined eligible or potentially eligible for listing (Table 6-1).***

Table 6-1: Potential impacts summary for architectural resources.

VDHR #	Resource Name, Address	NRHP-Status	Distance from Project	Recommended Impact
029-0410	Union Hills Historic District	NRHP-Eligible	Directly Crossed	Minimal
029-5006	Battery Hill Redoubt, Fort "A"	NRHP-Listed	~0.53 Mile	No Impact
029-5117	Blackburn's Ford Battlefield	NRHP-Eligible	~0.57 Mile	No Impact
076-0016	Signal Hill	NRHP-Listed	~0.74 Mile	Minimal
076-0061	Bennett School	NRHP-Eligible	~0.17	Minimal
076-0238	Orange and Alexandria Railroad Bridge Piers	NRHP-Listed	Directly Crossed	Minimal
076-5036	Bristoe Station Battlefield	Potentially NRHP-Eligible	Directly Crossed	Minimal
076-5080	Prince William County Courthouse	NRHP-Listed	~0.16 Mile	Minimal
076-5190	Second Battle of Manassas	Potentially NRHP-Eligible	Directly Crossed	Minimal
076-5335	First Battle of Manassas	Potentially NRHP-Eligible	Directly Crossed	Minimal
152-0001	Conner House	NRHP-Listed	~0.17 Mile	Minimal
152-5001	Louisiana Brigade Winter Camp	NRHP-Listed	~0.75 Mile	No Impact
155-0001	Liberia	NRHP-Listed	~0.74 Mile	No Impact
155-0010	Jennie Dean Memorial Site	NRHP-Listed	~0.06 Mile	Minimal
155-0021	Annaburg	NRHP-Listed	~0.28 Mile	Minimal
155-0107	Pickeral House	NRHP-Eligible	~0.13 Mile	No Impact
155-0141	Old Manassas Water Tower	NRHP-Listed	~0.16 Mile	Minimal
155-0161	Manassas Historic District	NRHP-Listed	Directly Crossed	Minimal
155-0162	Manassas Cemetery and Confederate Cemetery in Manassas	Potentially NRHP-Eligible		Minimal
155-5002	Mayfield Fortification	NRHP-Listed	~0.17 Mile	Minimal
155-5020	Cannon Branch Fort	NRHP-Listed	~0.9 Mile	No Impact
194-0003	Clifton Historic District	NRHP-Listed	~0.47 Mile	No Impact

With regards to archaeology, discrete portions of the project ROW have been subject to survey, although other portions of have not been previously surveyed. As a result of previous survey, a total of eleven (11) previously recorded sites are located directly within or adjacent to the project ROW (within 100 feet of the centerline). Of these, one (1) has been determined not eligible and the rest have not been formally evaluated. No archaeological field work was conducted as part of this effort and the previously recorded site within or adjacent to the project ROW was not

visited or assessed at this time (Table 6-2). ***It is therefore D+A's opinion that unsurveyed portions of the project ROW be surveyed and identified sites be assessed for impacts.***

Table 6-2: Summary of potential impacts summary for archaeological resources.

VDHR#/ Description	NRHP Status	Proximity to Project Area	Impacts
44FX0407/ prehistoric unknown	Not Evaluated	Directly Crossed	TBD
44FX0953/ early-woodland camp, 19th century earthworks	Not Evaluated	Directly Crossed	TBD
44FX1737/ middle-archaic camp	Not Evaluated	Directly Crossed	TBD
44FX1852/ prehistoric unknown, 19th century road trace	Not Evaluated	Adjacent	TBD
44FX1885/ 19th century gold mine and road	Not Evaluated	Directly Crossed	TBD
44FX1886/ historic unknown	Not Evaluated	Adjacent	TBD
44FX1888/ 19th century bridge	Not Evaluated	Adjacent	TBD
44FX1892/ historic unknown	Not Evaluated	Directly Crossed	TBD
44FX2324/ 19th century other	Not Evaluated	Directly Crossed	TBD
44PW0512/ Civil War earthworks and 20th century school	Not Evaluated	Adjacent	TBD
44PW1087/ temporary camp	DHR Staff: Not Eligible	Directly Crossed	TBD

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7. REFERENCES

National Park Service
2009 "Civil War Sites Advisory Commission Report Update and Resurvey," American Battlefield Protection Program

Virginia Department of Historic Resources
2008 *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia*

Virginia Department of Historic Resources
2016 Virginia Cultural Resource Information System (VCRIS) database and GIS server.

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Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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

Travis A. Voyles
Secretary of Natural and Historic Resources

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

MEMORANDUM

TO: James P. Young, Dominion Energy

FROM: Daniel Moore, Principal Environmental Planner

DATE: October 26, 2022

SUBJECT: Dominion Energy Proposed Line #2011 Partial Rebuild Project – Fairfax and Prince William Counties

We have reviewed the EA for the proposed project and offer the following comments regarding consistency with the provisions of the *Chesapeake Bay Preservation Area Designation and Management Regulations* (Regulations):

In Prince William County, the areas protected by the Chesapeake Bay Preservation Act, as locally implemented, require conformance with performance criteria. These areas include Resource Protection Areas (RPAs) and Resource Management Areas (RMAs) as designated by the local government. RPAs include tidal wetlands, certain non-tidal wetlands and tidal shores. RPAs also include a 100-foot vegetated buffer area located adjacent to and landward of these features and along both sides of any water body with perennial flow. RMAs, which require less stringent performance criteria, include all areas of each county not included in the RPAs. The City of Manassas is not subject to the Chesapeake Bay Preservation Act or the Regulations.

The Partial Rebuild Project involves the replacement of aging infrastructure at the end of its serviceable life on the existing 230 kV Cannon Branch-Clifton Line #2011 located in the City of Manassas and in Prince William and Fairfax Counties. Specifically, the applicant proposes to rebuild approximately 7.25 miles of the Cannon Branch-Clifton Line #2011 predominantly within existing right-of-way, existing easements and on property owned by the applicant. The Partial Rebuild Project will include replacement of structures, conductors and shield wire along this rebuilt segment of Line #2011.

The proposed project is considered exempt from §9 VAC 25-830-150 B 2 of the Regulations provided the proposed electrical transmission lines in accord with the following conditions:

(a) to the degree possible, the location of such utilities and facilities should be outside the RPA;
(b) no more land shall be disturbed than is necessary to provide for the proposed utility installation;
(c) all such construction, installation and maintenance of such utilities and facilities shall be in compliance with all applicable state and federal permits and designed and conducted in a manner that protects water quality; and
(d) any land disturbance exceeding an area of 2,500 square feet complies with all erosion and sediment control regulations promulgated pursuant to the *Virginia Erosion and Sediment Control Law* and the *Virginia Stormwater Management Act*, (ii) an erosion and sediment control plan and a stormwater management plan approved by DEQ, or (iii) local water quality protection criteria at least as stringent as the above state requirements.

Provided adherence to the above requirements, the proposed activity would be consistent with the Regulations and the *Chesapeake Bay Preservation Act.*

James P Young (Services - 6)

From: ImpactReview <impactreview@vof.org>
Sent: Monday, October 31, 2022 10:55 AM
To: Fulcher, Valerie; James P Young (Services - 6)
Subject: [EXTERNAL] RE: NEW SCOPING Line 2011 Cannon Branch-Clifton Line

Mr. Young,

The Virginia Outdoors Foundation has reviewed the project referenced below. As of October 31, 2022, there are not any existing nor proposed VOF open-space easements in the immediate vicinity of the project.

Please contact VOF again for further review if the project area changes or if this project does not begin within 24 months. Thank you for considering conservation easements.

Thanks,
Baron

Baron Lin (*he/they*)
GIS Specialist
Virginia Outdoors Foundation
cell: 540-935-3163
other work #: 844-863-9800, ext. 355
email: blin@vof.org

From: Fulcher, Valerie <valerie.fulcher@deq.virginia.gov>
Sent: Tuesday, October 25, 2022 2:04 PM
To: rr dgif-ESS Projects <essprojects@dwr.virginia.gov>; Keith Tignor <keith.tignor@vdacs.virginia.gov>; rr DCR-PRR Environmental Review <envreview@dcr.virginia.gov>; odwreview (VDH) <odwreview@vdh.virginia.gov>; Carlos Martinez <carlos.martinez@deq.virginia.gov>; Kotur Narasimhan <kotur.narasimhan@deq.virginia.gov>; Lawrence Gavan <larry.gavan@deq.virginia.gov>; Daniel Moore <daniel.moore@deq.virginia.gov>; Mark Miller <mark.miller@deq.virginia.gov>; Roger Kirchen <roger.kirchen@dhr.virginia.gov>; Bob Lazaro <rlazaro@novaregion.org>; Karl Didier <karl.didier@dof.virginia.gov>; Terrance Lasher <terry.lasher@dof.virginia.gov>; rr EIR Coordination <eir.coordination@vdot.virginia.gov>; ImpactReview <impactreview@vof.org>; Michelle Henicheck <michelle.henicheck@deq.virginia.gov>; Scott Kudlas <scott.kudlas@deq.virginia.gov>; jspatton@pwcgov.org; Atkinson, Kelly <Kelly.Atkinson@fairfaxcounty.gov>; citymanager@ci.manassas.va.us; David Spears <david.spears@dmme.virginia.gov>
Cc: james.p.young@dominionenergy.com
Subject: NEW SCOPING Line 2011 Cannon Branch-Clifton Line

Alert: This email originated from outside VOF
Good afternoon—attached is a request for scoping comments on the following:

Dominion Energy Virginia's Proposed Cannon Branch-Clifton Line #2011 230kV Partial Rebuild Project, City of Manassas, Prince William County and Fairfax County, Virginia

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

DEQ-OEIR's scoping response is also attached.

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

Valerie

--

Valerie A. Fulcher, CAP, OM, Admin/Data Coordinator Senior

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

NEW PHONE NUMBER: 804-659-1550

Email: Valerie.Fulcher@deq.virginia.gov

https://www.deq.virginia.gov/permits-regulations/environmental-impact-review

OUR ENFORCEABLE POLICIES HAVE BEEN UPDATED FOR 2021: https://www.deq.virginia.gov/permits-regulations/environmental-impact-review/federal-consistency

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

From: Burke, Richard
To: Craig R Hurd (Services - 6)
Subject: [EXTERNAL] Fwd: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project
Date: Friday, October 21, 2022 7:12:23 AM
Attachments: Project Overview Map (Cannon - Clifton) _ 10.20.2022.pdf
Agency Letter - Lynch (Cannon - Clifton) _ 10.20.2022.pdf

Craig --

Good morning, Mr. Lynch shared this email with me. I will coordinate with the VDOT NOVA teams in Fairfax and Prince William to get a quick review. Would it be possible to get a more detailed map or street names for the route? The overview map attached looks like it may be on the railroad but I just wanted to be sure before I share with our teams for review.

Thanks,

Dic Burke
Transportation Director / NOVA District
Virginia Department of Transportation
703-366-1935
Richard.Burke@VDOT.Virginia.gov

---------- Forwarded message ---------
From: **Craig.R.Hurd@dominionenergy.com** <Craig.R.Hurd@dominionenergy.com>
Date: Thu, Oct 20, 2022 at 4:57 PM
Subject: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project
To: john.lynch@vdot.virginia.gov <john.lynch@vdot.virginia.gov>

Mr. Lynch,

Please see the attached documents regarding a proposed project in the City of Manassas, Prince William County and Fairfax County, Virginia.

Thanks

Craig R. Hurd

Siting and Permitting

Electric Transmission

Dominion Energy

10900 Nuckols Road Glen Allen VA 23060 Fourth Floor

O: 804.771.6489 C: 804.201.5020

--

John D. Lynch, P.E.
District Engineer
Northern Virginia District
703-259-2737
john.lynch@vdot.virginia.gov

From: Burke, Richard
To: Craig R Hurd (Services - 6)
Cc: Robert Burton; David A. Heironimus; John Lynch; Claudia, P.E. (VDOT) Llana
Subject: [EXTERNAL] Fwd: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project
Date: Wednesday, October 26, 2022 1:50:18 PM
Attachments: Project Overview Map (Cannon - Clifton)_10.20.2022.pdf
Agency Letter - Lynch (Cannon - Clifton)_10.20.2022.pdf

Craig --

Good afternoon, Mr. Lynch has asked I respond on his behalf. Our Permits teams have reviewed the route and most of it appears to be in existing easements along the railroad and in the Cities of Manassas/Manassas Park. The Cities maintain their own roads and I understand you have reached out to them separately. Therefore, impacts to VDOT right of way is limited.

VDOT Fairfax Permits may need to review the line coming in from their substation if an easement is needed. In Prince William, unless the route changes then nothing from VDOT is required. If you have any questions or need further coordination please reach out me or our Permit Managers (Mr. Burton (Fairfax) or Mr. Heironimu (Prince William).

Thanks,

Dic Burke
Transportation Director / NOVA District
Virginia Department of Transportation
703-366-1935
Richard.Burke@VDOT.Virginia.gov

---------- Forwarded message ---------
From: **Craig.R.Hurd@dominionenergy.com** <Craig.R.Hurd@dominionenergy.com>
Date: Thu, Oct 20, 2022 at 4:57 PM
Subject: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project
To: john.lynch@vdot.virginia.gov <john.lynch@vdot.virginia.gov>

Mr. Lynch,

Please see the attached documents regarding a proposed project in the City of Manassas, Prince William County and Fairfax County, Virginia.

Thanks

Craig R. Hurd

Siting and Permitting

Electric Transmission

Dominion Energy

10900 Nuckols Road Glen Allen VA 23060 Fourth Floor

O: 804.771.6489 C: 804.201.5020

--

John D. Lynch, P.E.
District Engineer
Northern Virginia District
703-259-2737
john.lynch@vdot.virginia.gov

From: Helvey, Michael (FAA)
To: Craig R Hurd (Services - 6)
Cc: Maddox, David (FAA)
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project
Date: Friday, October 21, 2022 9:20:29 AM
Attachments: image003.png
Agency Letter - Helvey (Cannon - Clifton) 10.20.2022.pdf
Project Overview Map (Cannon - Clifton) 10.20.2022.pdf

Craig,
Thank you for submitting the project information. If this is a one-for-one replacement with no change in location or heights, notification to the FAA is under 14 CFR Part 77 is not required. If this requires structures to be moved or raised, *and* it meets notice requirements in 14 CFR Part 77.9, notice will be required through the FAA's obstruction evaluation website (https://oeaaa.faa.gov). Also, any construction equipment that exceeds the height of the structure may need to be filed.

There is a notice criteria tool located on the website that will help identify if notice is required. Due to the volume of studies being conducted, I recommend filing notice (if required) well in advance of the 45-day requirement for time sensitive work.

Mike

Michael W. Helvey
Obstruction Evaluation Group | Aeronautical Information Services
Mission Support Services | Air Traffic Organization (ATO)
Federal Aviation Administration

Mobile: 202-510-6954
Email: michael.helvey@faa.gov
Web: www.faa.gov/go/missionsupport

From: Craig.R.Hurd@dominionenergy.com <Craig.R.Hurd@dominionenergy.com>
Sent: Thursday, October 20, 2022 4:53 PM
To: Helvey, Michael (FAA) <michael.helvey@faa.gov>
Subject: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project

Mr. Helvey,

Please see the attached documents regarding a proposed project in the City of Manassas, Prince

William County and Fairfax County, Virginia.

Thanks

Craig R. Hurd
Siting and Permitting
Electric Transmission

Dominion Energy
10900 Nuckols Road Glen Allen VA 23060 Fourth Floor
O: 804.771.6489 C: 804.201.5020

From: Scott Denny
To: Craig R Hurd (Services - 6)
Subject: [EXTERNAL] Re: Dominion Energy Virginia's Proposed Line #2011 230 kV Partial Rebuild Project
Date: Friday, October 21, 2022 11:59:40 AM

Mr. Hurd:

The Virginia Department has reviewed the information package you provided in your October 20, 2022 email regarding the Canon-Clifton 230kV Line Project, also identified as Project # 2011. Following our review it appears as though a portion of the project's footprint is within 20,000 linear feet of a public use airport, the Manassas Regional Airport. Therefore a 7460 form must be submitted to the Federal Aviation Administration to determine if the proposed project will constitute a hazard to air navigation. Provided the improvements do not result in a determination of a "hazard to Air Navigation" or result in the increase to any instrument approach minimums at the Manassas Regional Airport, the Departmen does not object to the project as it has been presented.

Please feel free to contact me at (804) 236-3638 if you have any questions regarding this matter.

Sincerely,

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

On Thu, Oct 20, 2022 at 4:55 PM Craig.R.Hurd@dominionenergy.com <Craig.R.Hurd@dominionenergy.com> wrote:

> Mr. Denny,
>
> Please see the attached documents regarding a proposed project in the City of Manassas, Prince William County and Fairfax County, Virginia.
>
> Thanks
>
> *Craig R. Hurd*
>
> **Siting and Permitting**

Electric Transmission

Dominion Energy

10900 Nuckols Road Glen Allen VA 23060 Fourth Floor

O: 804.771.6489 C: 804.201.5020

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S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation
804-236-3638
scott.denny@doav.virginia.gov

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

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

Best Regards,

Arlene Fields Warren

GIS Program Support Technician

Office of Drinking Water

Virginia Department of Health

109 Governor Street

Richmond, VA 23219

(804) 864-7781

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

Hello Ms. Warren,

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

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

Thank you,

Rachel Studebaker

Environmental Specialist II

Dominion Energy Services

120 Tredegar Street, Richmond, VA 23219

Office: (804) 273-4086

Cell: (804) 217-1847

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