

APPALACHIAN POWER COMPANY  
BEFORE THE  
VIRGINIA STATE CORPORATION COMMISSION  
CASE NO. PUR-2021 -00001

APPLICATION FOR APPROVAL AND CERTIFICATION OF  
ELECTRICAL TRANSMISSION LINE

Central Virginia Transmission  
Reliability Project

VOLUME 3 OF 4

DEQ Supplements

January 2021

**JAMES RIVER 138 kV SUBSTATION  
VDEQ SUPPLEMENT**

# **VDEQ SUPPLEMENT**

**Central Virginia Transmission Reliability Project**

**Component 2:  
James River 138-kV Substation**

**Nelson County, Virginia**

**Prepared For:**  
Appalachian Power Company

**Prepared by:**  
POWER Engineers, Inc.

**December 2020**

Based on consultations with the Virginia Department of Environmental Quality (VDEQ), POWER Engineers, Inc. (POWER) on behalf of Appalachian Power Company (Appalachian Power or the Company) has developed this VDEQ Supplement to facilitate review and analysis of the James River Substation Component of the Central Virginia Transmission Reliability Project (CVTRP) by the VDEQ and other relevant agencies.

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## **1. PROJECT DESCRIPTION**

Appalachian Power Company (Appalachian Power or the Company) is planning to upgrade the local electric transmission grid in five central Virginia counties: Amherst, Appomattox, Albemarle, Campbell and Nelson (“the Central Virginia Transmission Reliability Project” or “CVTRP”. The CVTRP provides a new electrical source for the region, increases reliability to customers and supports the retirement of aging equipment. The Company’s application to the Virginia State Corporation Commission (SCC), describes the overall need and necessity for the CVTRP.

The CVTRP has been broken into four components. This Virginia Department of Environmental Quality (VDEQ) supplement will focus on Component 2 or the James River 138-kV Substation Component, which involves building a new 138-kV substation (the “James River 138-kV Substation”) and approximately 400 feet of new 138-kV double circuit transmission line (which will require fewer than two spans and therefore is considered an in-line substation line connection) on a property purchased by the Company. The proposed James River 138-kV Substation will replace the existing Shipman Substation located off Craigtown Road in Nelson County. The associated 138-kV transmission line connection will connect the Company’s existing Reusens – Scottsville – Breomo Bluff 138-kV transmission line to the new James River 138-kV Substation.

The Project Team conducted a site selection process that identified and evaluated 12 feasible sites for the proposed James River 138-kV Substation and ultimately, two alternative sites were carried forward for various reasons such as size, land use compatibility, purchase availability, and potential viewshed impacts. Sites that were carried forward into the alternative analysis were crossed by or in immediate proximity to the 138-kV source, and thus would require a short transmission line connection. Therefore, a separate siting process for the associated 138 kV transmission line connected was not completed. The proposed James River 138-kV Substation site is located on James River Road and is forested and undeveloped. The proposed location for the James River 138-kV Substation on James River Road was ultimately chosen as it minimizes impacts to the natural and human environment and is crossed by the existing 138-kV transmission line.

The Company completed purchase of approximately 11.2 acres of a property in Nelson County for Component 2 in August 2020. The property consisting of slightly rolling topography and bisected by Dillard Creek. The property is categorized as agricultural, but densely forested and undeveloped. The Company’s Reusens – Scottsville – Breomo Bluff 138-kV transmission line crosses the parcel providing a direct in-line transmission line connection to the 138-kV source. The James River Substation pad is proposed to be at least 250 feet by 250 feet (approximately 1.5 acres) south of the 138-kV right-of-way (ROW) and can be positioned near James River Road with adequate space for a vegetative buffer.

## **2. ENVIRONMENTAL ANALYSIS**

Prior to purchasing the property for Component 3, the Company completed onsite wetland delineations, a cultural resources reconnaissance survey, and civil grading concepts as a due diligence effort. Geotechnical borings and groundwater elevation studies are ongoing. Threatened and endangered species surveys will be completed after the state approval process, prior to construction of the substation.

On behalf of the Company, POWER solicited input from a number of state and federal environmental agencies regarding the CVTRP. Responses to the CVTRP were received from 17 representatives of various federal, state, and local agencies, and are included in Volume 2 of this

Application. POWER also obtained relevant environmental data from field verification, online databases, and other available sources.

**A. Air Quality**

The CVTRP does not involve the construction or expansion of any thermal emission generating sources and therefore no direct operational emissions from the Project are anticipated. During construction, emissions from heavy equipment and dust would occur, but kept at a minimum. No permanent impacts on air quality are anticipated, and temporary impacts will only last the duration of the construction phase. The Company does not expect to burn cleared material but, if burning becomes necessary, the Company will coordinate with the responsible locality to obtain permits and will comply with conditions imposed by the locality. The Company's tree-clearing methods can be found in Section II.A.7 of the SCC Response to Guidelines in Volume 1 of the Application.

**B. Water Source**

The James River 138-kV Substation Component is located in the Rucker Run sub-watershed (Hydrologic Unit Code [HUC]12 020802030702) of the Middle James-Buffalo sub-basin (HUC8 02080203). No water source is required for substation operation. The Company requested comments on the James River 138-kV Substation Component from the Virginia Department of Health's Office of Drinking Water in a letter dated January 30, 2020. The Office of Drinking Water did not respond to this request for the potential location of public groundwater wells or surface water intakes. Additionally, no response was received from the VDEQ Office of Wetland and Stream Protection.

The Project Team submitted a project review request to the Virginia Department of Conservation (VDCR), Virginia Natural Heritage Program on January 30, 2020 and a response was received on March 6, 2020 (Attachment 2.B.1 to this VDEQ Supplement). The VDCR did not have any concerns for the James River 138-kV Substation Component.

The Virginia Marine Resources Commission (VMRC) noted in a letter dated February 24, 2020, that pursuant to Section 28.2-1200 et seq. of the Code of Virginia, they have jurisdiction over any encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks which are the property of the Commonwealth. Any jurisdictional impacts will be reviewed by VMRC during the Joint Permit Application process, as required. In a letter dated March 3, 2020, the VDEQ Blue Ridge Regional Office did not indicate any water resource concerns for the CVTRP (agency responses included in Volume 2 of the Application).

**C. Discharge of Cooling Waters**

No discharge of cooling waters is associated with the Project.

**D. Tidal Wetlands**

No tidal wetlands are associated with the Project.

**E. Non-tidal Wetlands Impact Consultation**

POWER biologists completed a wetland and stream delineation on March 23 – 24, 2020 for the James River Substation. The Survey Area is identified as an area of approximately 72 acres of a 250-acre parcel (prior to final purchase of the property) that includes the James River 138-kV Substation and its associated 138-kV transmission line connection, and stormwater controls. Multiple wetlands

and streams were identified within the Survey Area and details of the onsite wetland and stream assessment is included as Attachment 2.E.1 of this VDEQ Supplement.

Prior to the field survey, hydrologic resource mapping including floodplains and National Wetland Inventory (NWI) data was reviewed within the Survey Area. A hand-held Trimble Global Positioning System (GPS) capable of sub-meter accuracy was used to gather data points and determine boundaries of all identified aquatic resources. Field collected resource locations, National Hydrography Dataset (NHD) streams, and the Survey Area are shown in Figure 3 of Attachment 2.E.1 in this VDEQ Supplement. Locations of wetland determination data points were selected in accordance with procedures outlined in the United States Army Corps of Engineers (USACE) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*. Representative photographs of the identified wetland resources were taken at the Wetland Data Point locations shown on figures included in Attachment 2.E.1 of this VDEQ Supplement.

Three wetlands and 11 streams were identified within the Survey Area. Details of these aquatic resources are listed in the following two tables and also located in the Attachment 2.E.1.

WETLAND ID	COWARDIN WETLAND TYPE <sup>1</sup>	ACREAGE WITHIN SURVEY AREA
WET-JRSS-01	PFO	0.03
WET-JRSS-02	PSS	0.04
WET-JRSS=03	PEM	0.04
<b>Wetlands within Survey Area Total</b>		<b>0.11</b>

<sup>1</sup> PFO = Palustrine Forested; PSS = Palustrine Scrub-Shrub; PUB = Palustrine Unconsolidated Bottom.

STREAM ID	FLOW REGIME	LENGTH WITHIN SURVEY AREA (FEET)
STRM-JRSS-01	Ephemeral	120
STRM-JRSS-02	Intermittent	1,363
STRM-JRSS-03	Intermittent	1,091
STRM-JRSS-04	Intermittent	336
STRM-JRSS-05	Intermittent	458
STRM-JRSS-06	Intermittent	33
STRM-JRSS-07	Perennial (Dillard Creek)	2,599
STRM-JRSS-08	Intermittent	386
STRM-JRSS-09	Intermittent	272
STRM-JRSS-10	Ephemeral	65
STRM-JRSS-11	Perennial	208
<b>Streams within Survey Area Total</b>		<b>6,931</b>



No wetlands or streams were identified within the disturbance limits of the proposed James River 138-kV Substation or transmission line connection based on the wetland and stream assessment (Figure 3 of Attachment 2.E.1 to this VDEQ Supplement). One stream (STRM-JRSS-04) and one wetland (WET-JRSS-01) are located west and outside of the anticipated disturbance limits for the James River 138-kV Substation Component. Erosion control best management practices will be applied where appropriate to minimize stormwater runoff related impacts during construction activities per requirements by the VDEQ and/or the USACE. The Company will continue to work with the VDEQ to minimize impacts to wetlands and streams for Component 2.

#### **F. Solid and Hazardous Waste**

A database search was conducted to identify solid and hazardous waste sites in the James River Substation Component. The database search included the USEPA's National Priority List (NPL); the USEPA's Superfund Enterprise Management System; the USEPA's Resource Conservation and Recovery Act Information System (RCRA); the USEPA's Toxics Release Inventory (TRI); the VDEQ's Solid Waste Management Facilities; and the VDEQ's Voluntary Remediation Program (VRP). Results from the solid and hazardous waste database search are included in Attachment 2.F.1 to this supplement.

The USEPA's Superfund NPL online mapper identified no NPL sites in proximity to James River Substation Component in addition to the Superfund Enterprise Management System database (database last updated November 2019). The RCRA database includes information on facilities that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA. Facilities are classified as large quantity generators, small quantity generators, or conditionally exempt small quantity generators depending on the amount of waste they handle. The USEPA's RCRA database (database last updated June 2020) identified no RCRA facilities in the vicinity of the proposed James River Substation Component. The TRI database (database last updated September 2020) includes information about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. The TRI database identified no TRI sites within 10 miles of the proposed James River 138-kV Substation Component. In addition, no facilities registered in the VRP database were identified in Nelson County.

Nelson County is a member of the Region 2000 Services Authority, which serves the four collections centers in the county. The Region 2000 Services Authority is located over 30 miles west from the Company; however, the Shipman Collection Center is less than a mile south on James River Road.

Care will be taken to operate and maintain construction equipment to prevent any fuel or oil spills. Any waste created by the construction crews will be disposed of in a proper manner and recycled where appropriate and will be further detailed in the Company's stormwater pollution prevention plan, a component of the Virginia Stormwater Management Program, which will be submitted to the VDEQ. The James River 138-kV Substation Component is located within dense forested land. Based on the information obtained from the USEPA and the VDEQ databases, it is anticipated the James River Substation 138-kV Component and associated transmission line connection will not impact contaminated soils or groundwater during construction. The Company will monitor soil and

groundwater quality in areas of soil disturbance locations, which will be outlined in the stormwater pollution prevention plan.

#### **G. Natural Heritage, Threatened and Endangered Species**

A USFWS Information for Planning and Consultation (IPaC) report was generated to verify potential habitat occurrences of threatened and endangered species near James River 138-kV Substation Component. A one-mile search buffer was added to the James River 138-kV Substation Component location and two USFWS-listed species (Northern long-eared bat and James spiny mussel) that might occur were identified through the IPaC (Attachment 2.G.1 to this VDEQ Supplement).

The Project Team submitted a project review request to the Virginia Department of Conservation (VDCR), Virginia Natural Heritage Program on January 30, 2020 and a response was received on March 6, 2020 (see Attachment 2.B.1 to this VDEQ Supplement). The VDCR did not have any concerns or listed species for the Company, but recommends following the Project's maintenance practices as preventative measures to protect potential habitats of USFWS-listed species:

- Invasive species plan including invasive species inventory for the Project based on the current VDCR Invasive Species List from VDCR's website; methods for treating the invasive species.
- ROW restoration and revegetation including native species in a mix of grasses and forbs; monitoring and adaptive management plan for unsuccessful restoration efforts.

The VDCR notes any permanent tree removal by the Project will fragment Ecological Core(s) (C2, C3, C4, and C5) as identified in the Virginia Natural Landscape Assessment. Ecological Cores are areas of unfragmented natural cover with at least 100 acres of interior that provide habitat for a wide range of species. The cores are ranked from C1 to C5 (C5 being the least ecologically relevant) using a multi-level criterion. Habitat fragmentation can reduce biodiversity and habitat quality due to limited recolonization, increased predation, and spread invasive species. The VDCR notes the key to mitigation of fragmentation is minimization measures applied, to the extent feasible, that will preserve the natural patterns and connectivity of habitats that are key components of biodiversity (Attachment 2.B.1 to this supplement).

The Project Team submitted a project review request to the Virginia Department of Wildlife Resources (VDWR) [previously the Virginia Department of Game and Inland Fisheries (VDGIF)]. The Company did not receive comments from the VDWR. A review of the VDWR's online mapper was used to view sensitive species and resulted in three USFWS-listed species (Northern long-eared bat, James spiny mussel, and [USFWS-proposed listed] yellow lance) within a 3 mile radius of Component 2). The James River 138-kV Substation Component area is not located in proximity to any potential Northern long-eared bat, little brown bat, or tri-colored bat habitat and roost tree locations according to the information obtained in VDWR's online mapper (various survey dates). In addition, no bald eagle nests documented by The Center for Conservation Biology's (CCB) Eagle Nest Locator were located in proximity to the proposed substation site. If found, USFWS eagle guidance recommends that a 660-foot buffer between project activities and eagle nests be maintained.

A total of seven state-listed species could occur in the James River Substation Component based on the VDWR list. The full list can be found in Attachment 2.G.3 and in the below table. The Company

will coordinate with the VDWR, the USFWS, and the VDCR as appropriate to minimize impacts on these resources during the environmental permitting phase of the CVTRP.

VDWR-LISTED SPECIES WITHIN 3 MILES OF COMPONENT 2	
SPECIES NAME	STATUS
Little brown bat	Endangered
Tri-colored bat	Endangered
Eastern tiger salamander	Endangered
Peregrine falcon	Threatened
Loggerhead shrike (migrant)	Threatened
Appalachian grizzled skipper	Threatened
Green floater	Threatened

**H. Erosion and Sediment Control**

The Company’s General Erosion and Sediment Control Specifications for the Construction and Maintenance of Electric Utility Lines are submitted annually to the VDEQ for all upcoming projects. The approved General Erosion and Sediment Control Specifications will be implemented for all transmission facility construction related to the proposed CVTRP, including the James River 138-kV Substation Component, which will require substation construction, ROW clearing, structure erection, and use of an existing access road within the 138-kV transmission line ROW. In addition, a site-specific erosion and sediment control plan will be prepared as required by the VDEQ.

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

Per the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (2008) or simply *Guidelines*, issued by the Virginia Department of Historic Resources (VDHR), POWER contracted Dutton + Associates to complete a Pre-Application Analysis for the James River 138-kV Substation Component (see Attachment 2.I.1).

As per the Guidelines, the Area of Potential Effect is a tiered radial buffer framework, as defined by the VDHR. The buffer extends 1.5 miles for National Historic Landmarks; 1.0 mile for resources listed on the National Register of Historic Places (NRHP) and Virginia Landmarks Register maintained by the Virginia Board of Historic Resources and historic districts/battlefields that have been determined eligible for the NRHP/ Virginia Landmarks Register; and 0.5 mile used for NRHP-eligible historic properties. The Pre-Application Analysis also includes a review of known or previously surveyed archaeological sites near the proposed James River 138-kV Substation Component.

Background archival research was conducted regarding surveyed properties within the buffers established by Guidelines for the Project. Review of the VDHR VCRIS inventory records revealed a total of 16 previously recorded architectural resources are located 1.5-miles of the James River 138-kV Substation Component area. Of these, there are no NHLs located within 1.5-miles of the component area, no properties listed in the NRHP or battlefields located within 1-mile of the

component area, and no properties that have been determined eligible for listing in the NRHP within 0.5-miles of the component area. VCRIS also revealed there are no previously recorded archaeological sites within one mile of the James River 138-kV Substation Component. The James River 138-kV Substation Component is anticipated to pose no impacts to previously recorded cultural resources. The Company will continue to work with the VDHR to minimize impacts to cultural resources as the CVTRP progresses.

#### **J. Chesapeake Bay Preservation Areas**

Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the Chesapeake Bay Act as stated in the exemption for public utilities, railroads, public roads, and facilities in 9 VAC 10-20-150. The Company will meet applicable conditions.

#### **K. Wildlife Resources**

As noted in Section 2.G, two federally-listed species may be found within one mile of the James River Substation Component according to the IPaC. Consultation with the USFWS, the VDWR and the VDCR will be on-going as the CVTRP progresses. As required, the Company will perform the appropriate surveys to determine if protected species are present and to coordinate with the USFWS and the VDWR as appropriate to minimize impacts on these species and their habitat.

#### **L. Recreation, Agricultural, and Forest Resources**

Component 2 is expected to have minimal impact on recreation, agricultural, and forest resources. The property purchased for the James River 138-kV Substation is largely forested but crossed by the Company's existing Reusens – Scottsville – Brems Bluff 138-kV Transmission Line. Based on preliminary grading concepts for the new substation, approximately 5.6 acres of tree clearing is anticipated for the new substation and associated stormwater controls. The Company's tree clearing methods utilize the Virginia Department of Forestry (DOF)'s BMPs for water quality. Specific sections of the BMPs that are pertinent to transmission line clearing operations include:

- Equipment Maintenance and Litter
- Harvest Closure (rehabilitation of the ROW after construction)
- Revegetation of Disturbed Areas

The Company will utilize the above BMPs for the CVTRP. Further discussion of ROW clearing, rehabilitation and maintenance can be found in Section II.A.7 of the SCC Response to Guidelines in Volume 1 of the Application.

#### **M. Use of Pesticides and Herbicides**

When herbicides are used to maintain the Company's transmission ROW, they are registered with the USEPA and with the Virginia Department of Agriculture and Consumer Services. All herbicides

will be used in accordance with label and manufacturer directions. Regarding herbicide applications (additionally, see Section II.A.7 of the SCC Response to Guidelines in Volume 1 of the Application):

- Herbicides will not be applied when rainfall is imminent, during rainfall, or within one day of large rain events (usually greater than one centimeter) that result in soil moisture capacity occurring above field capacity.
- Buffer zones will be maintained around streams, ponds, karst features, springs, wetlands, and water supply wells in accordance and compliance with herbicide label and manufacturer directions.
- In karst features and channelized drainage ways (perennial or intermittent) draining to a karst feature, wetland-approved herbicides shall be used in accordance with label and manufacturer directions.

## ATTACHMENTS

**ATTACHMENT 2.B.1:  
VDCR AGENCY LETTER RESPONSE**

Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

March 6, 2020

Emily Larson  
Power Engineers, Inc.  
11 S. 12<sup>th</sup> Street, Suite 315  
Richmond, VA 23219

Re: Central Virginia Transmission Reliability Project

Dear Ms. Larson:

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.

**Amherst-Reusens 69kV and James River Substation**

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100-foot buffer. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. In addition, the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

**Joshua Falls-Gladstone 138kV**

According to the information currently in our files, Allens Creek Stream Conservation Unit (SCU) is located within the project area. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Allens Creek SCU has been given a biodiversity ranking of B4, which represents a site of moderate significance. The natural heritage resource associated with this site is:

Aquatic Natural Community (NP-Middle James-Buffalo Third Order Stream) G2?/S2?/NL/NL

The documented Aquatic Natural Community is based on Virginia Commonwealth University's **INSTAR** (*Interactive Stream Assessment Resource*) database, which includes over 2,000 aquatic (stream and river) collections statewide for fish and macroinvertebrate. These data represent fish and macroinvertebrate assemblages, instream habitat, and stream health assessments. The associated Aquatic Natural Community is significant on multiple levels. First, this stream is a grade A, as per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. This stream reach also holds as a "Outstanding" stream designation as per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of this

600 East Main Street, 24<sup>th</sup> Floor | Richmond, Virginia 23219 | 804-786-6124

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Natural Heritage • Dam Safety and Floodplain Management • Land Conservation*



stream to ideal stream conditions of biology and habitat for this region. Lastly, this stream contributes to high Biological Integrity at the watershed level (6<sup>th</sup> order) based on number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

Threats to the significant Aquatic Natural Community and the surrounding watershed include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species. To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian buffers with native plant species and maintaining natural stream flow.

In addition, the James River has been designated as a “Threatened and Endangered Species” Water by VDGIF for the Green floater (*Lasmigona subviridis*).

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

### **Soapstone Substation**

According to the information currently in our files, the Rockfish River Stream Conservation Unit (SCU) is located within the project area. The Rockfish River SCU has been given a biodiversity ranking of B3, which represents a site of high significance. The natural heritage resource associated with this site is:

Aquatic Natural Community (NP-Middle James-Buffalo Fifth Order Stream)      G2?/S2?/NL/NL

The documented Aquatic Natural Community is based on Virginia Commonwealth University's **INSTAR** (*Interactive Stream Assessment Resource*) database which includes over 2,000 aquatic (stream and river) collections statewide for fish and macroinvertebrate. These data represent fish and macroinvertebrate assemblages, instream habitat, and stream health assessments. The associated Aquatic Natural Community is significant on multiple levels. First, this stream is a grade A, as per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. This stream reach also holds as a “Healthy” stream designation as per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of this stream to ideal stream conditions of biology and habitat for this region. Lastly, this stream contributes to high Biological Integrity at the watershed level (6<sup>th</sup> order) based on number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

Threats to the significant Aquatic Natural Community and the surrounding watershed include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species. To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian buffers with native plant species and maintaining natural stream flow.

DCR recommends the development and implementation of an invasive species plan to be included as part of the maintenance practices for the right-of-way (ROW). The invasive species plan should include an invasive species inventory for the project area based on the current DCR Invasive Species List (<http://www.dcr.virginia.gov/natural-heritage/document/nh-invasive-plant-list-2014.pdf>) and methods for treating the invasives. DCR also recommends the ROW restoration and maintenance practices planned include appropriate revegetation using native species in a mix of grasses and forbs, robust monitoring and adaptive management plan to provide guidance if initial revegetation efforts are unsuccessful or if invasive species outbreaks occur.

If permanent tree removal is proposed, the project will fragment Ecological Core(s) (C2, C3, C4 C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection.

Ecological Cores are areas of unfragmented natural cover with at least 100 acres of interior that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Cores also provide benefits in terms of open space, recreation, water quality (including drinking water protection and erosion prevention), and air quality (including carbon sequestration and oxygen production), along with the many associated economic benefits of these functions. The cores are ranked from C1 to C5 (C5 being the least ecologically relevant) using many prioritization criteria, such as the proportions of sensitive habitats of natural heritage resources they contain.

Fragmentation occurs when a large, contiguous block of natural cover is dissected by development, and other forms of permanent conversion, into one or more smaller patches.. Habitat fragmentation results in biogeographic changes that disrupt species interactions and ecosystem processes, reducing biodiversity and habitat quality due to limited recolonization, increased predation and egg parasitism, and increased invasion by weedy species.

Therefore minimizing fragmentation is a key mitigation measure that will preserve the natural patterns and connectivity of habitats that are key components of biodiversity. The deleterious effects of fragmentation can be reduced by minimizing edge in remaining fragments; by retaining natural corridors that allow movement between fragments; and by designing the intervening landscape to minimize its hostility to native wildlife (natural cover versus lawns).

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. Please note, the Rockfish River has been designated as a scenic river in the state of Virginia and DCR recommends coordination with Lynn Crump of the DCR-Division of Planning and Recreational Resources at 804-786-5054 or [Lynn.Crump@dcr.virginia.gov](mailto:Lynn.Crump@dcr.virginia.gov).

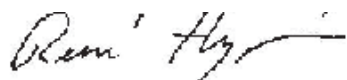
New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

A fee of \$395.00 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, 24<sup>th</sup> 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 Game and Inland Fisheries (VDGIF) 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 Ernie Aschenbach at 804-367-2733 or [Ernie.Aschenbach@dgif.virginia.gov](mailto:Ernie.Aschenbach@dgif.virginia.gov).

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

Sincerely,

A handwritten signature in black ink, appearing to read "S. René Hypes". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

S. René Hypes  
Natural Heritage Project Review Coordinator

Cc: Ernie Aschenbach, VDGIF  
Lynn Crump, DCR-PRR

**ATTACHMENT 2.E.1:  
WETLAND AND STREAM DELINEATION REPORT**



POWER ENGINEERS, INC.  
11733 CHESTERDALE ROAD  
CINCINNATI, OHIO 45246 USA

PHONE 513-258-7715  
FAX 513-326-1550

April 29, 2020

American Electric Power  
Attn: Tyler Emery  
Water & Ecological Resources Services (WERS)  
40 Franklin Road  
Roanoke, VA 24011

Subject: Proposed James River 138 kV Substation Project (BPID P17081010)  
Nelson County, Virginia  
Wetland Determination and Stream Assessment Letter Report

Mr. Emery,

This letter presents a summary of the results of the wetland and stream assessment conducted by POWER Engineers, Inc. (POWER) for the Appalachian Power Company's (Appalachian) proposed James River 138 kilovolt (kV) Substation Project (Project) in Nelson County, Virginia. The Project is a component of the larger Central Virginia Transmission Reliability Project (CVTRP) which consists of four phases within five Virginia counties. The purpose of the CVTRP is to introduce a new 138 kV source into the area to help support the generation retirement at Brems (Dominion) and ultimately allow Appalachian to retire approximately 30 miles of aging 46 kV and 69 kV infrastructure. The Project, together with the Soapstone Substation Project, forms the Shipman-Schuyler phase of the CVTRP. The two new substations are replacing Appalachian's existing Shipman and Schuyler substations which will be retired. The new James River and Soapstone Substations will be served from the Reusens – Scottsville – Brems Bluff 138 kV transmission line via a new double circuit loop. The existing 138 kV source crosses both properties.

The Project consists of the construction of a new substation on a parcel that Appalachian currently has a signed option to purchase. Activities associated with the proposed Project include clearing and grading at the site, and construction of a new substation. Construction of the proposed substation is scheduled to start in April 2023, with the substation anticipated to be in-service by December 2023. An overall Project Location map can be found in **Figure 1: Project Location**.

Appalachian retained POWER to determine the boundaries and limits of streams, wetlands, and other aquatic resources within the Project area. The findings and results of the on-site assessment are described below.

### **Methodology**

The review area encompassed 72.08 acres of the approximately 250-acre parcel, where the substation and stormwater controls will be generally be located. Collectively, these areas are herein referred to as the Survey Area.

Prior to the field survey, hydrologic resource mapping including floodplains and National Wetland Inventory (NWI) data was reviewed within the Project vicinity. A map of these resources is included as **Figure 2: Floodplain and NWI Wetlands**.

POWER biologists completed a pedestrian reconnaissance of the Survey Area on March 23-24, 2020, and March 26, 2020. A hand-held Trimble Global Positioning System (GPS) capable of sub-meter accuracy was used to gather data points and determine boundaries of all identified aquatic resources. Field collected resource locations, National Hydrography Dataset (NHD) streams, and the Survey Area are shown in **Figure 3: Resource Location**. Individual characteristics of each field collected resource are provided in Tables 1 and 2 of Attachment A.

Locations of wetland determination data points were selected in accordance with procedures outlined in the United States Army Corps of Engineers (USACE) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*. These data are presented in **Figure 3: Resource Location**. Representative photographs of the identified wetland resources were taken at the Wetland Data Point locations shown in these figures.

Delineated wetland and stream resources within the Survey Area were given an identifier based on the order of delineation in the field. For example, a wetland with the identifier WET-JRSS-01 equates to WET (wetland) -JRSS (project identifier, James River Substation) -01 (number assigned to the first resource identified). Similarly, delineated streams were given the identifier STRM and numbered in a similar manner as wetlands.

## **Results**

POWER biologists identified three wetlands totaling 0.11 acre within the Survey Area (shown on **Figure 3: Resource Location**). Details of these wetlands can be found in Table 1 of Attachment A. Representative photographs of these wetlands can be found in Attachment B; the USACE Wetland Determination Data Forms for these wetlands can be found in Attachment C; and the corresponding Upland Data Forms can be found in Attachment D.

As part of the field review, and to identify potential hydrological connection(s) to other Waters of the United States, POWER biologists examined the areas immediately adjacent to the delineated wetlands. Hydrological features that could convey water to or from the identified wetland might include, but may not be limited to, streams, pipes, swales, ditches, or other erosional conveyances. A brief description of any observed hydrological connections, or otherwise, is provided in the hydrology section of the USACE Wetland Determination Data Forms (Attachment C). The results of these determinations are also provided in Table 1 of Attachment A. All wetlands were determined to be likely jurisdictional. This determination represents the onsite POWER biologists' professional opinion regarding potential jurisdiction of the delineated features under Section 404 of the Clean Water Act. It is important to note that an official determination of the limits and jurisdictional status of onsite features is under the purview of the USACE and may require an onsite inspection with USACE representatives in order to provide an official jurisdictional determination.

POWER biologists identified 11 streams within the Survey Area. The total length of delineated streams within the Survey Area is 6,931 linear feet (shown on **Figure 3: Resource Location**). Additional details on the streams can be found in Table 2 of Attachment A. Representative photographs of these resources can be found in Attachment B.

It is the opinion of the POWER biologists who conducted the survey that all 11 of the delineated stream resources have a hydrological connection to other Waters of the United States. These determinations were made after a field inspection of the areas immediately adjacent to the

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downstream termini of the streams and a review of desktop resources. These examinations indicated that all 11 streams appear to have a downstream connection to a United States Geological Survey- or NHD-mapped stream. Therefore, it is POWER's professional opinion that all the identified streams are likely jurisdictional features under Section 404 of the Clean Water Act. However, as noted above regarding wetlands, an official determination of the limits of jurisdictional status on onsite features is under the purview of the USACE and may require an onsite inspection with USACE representatives in order to provide an official jurisdictional determination.

### **Summary and Recommendations**

POWER biologists identified a total of three wetlands with a total acreage of 0.11 acre and 11 streams with a total length of 6,931 linear feet within the Survey Area.

It is the professional opinion of POWER that all three delineated wetland resources are likely jurisdictional, under Section 404 of the Clean Water Act. It is also the professional opinion of POWER that all 11 delineated stream resources are also likely jurisdictional under Section 404 of the Clean Water Act.

Erosion control best management practices are expected to be used where appropriate to minimize stormwater runoff related impacts to wetlands and streams. Additional information regarding Appalachian's efforts to avoid or minimize impacts to wetlands, streams, and other aquatic resources to the extent possible during construction of the Project will be addressed in the Project's Stormwater Pollution Prevention Plan. Any required Project notification or permit applications under Sections 401 and/or 404 of the Clean Water Act, as mandated by the Virginia Department of Environmental Quality or the USACE, will be submitted as necessary.

Sincerely,



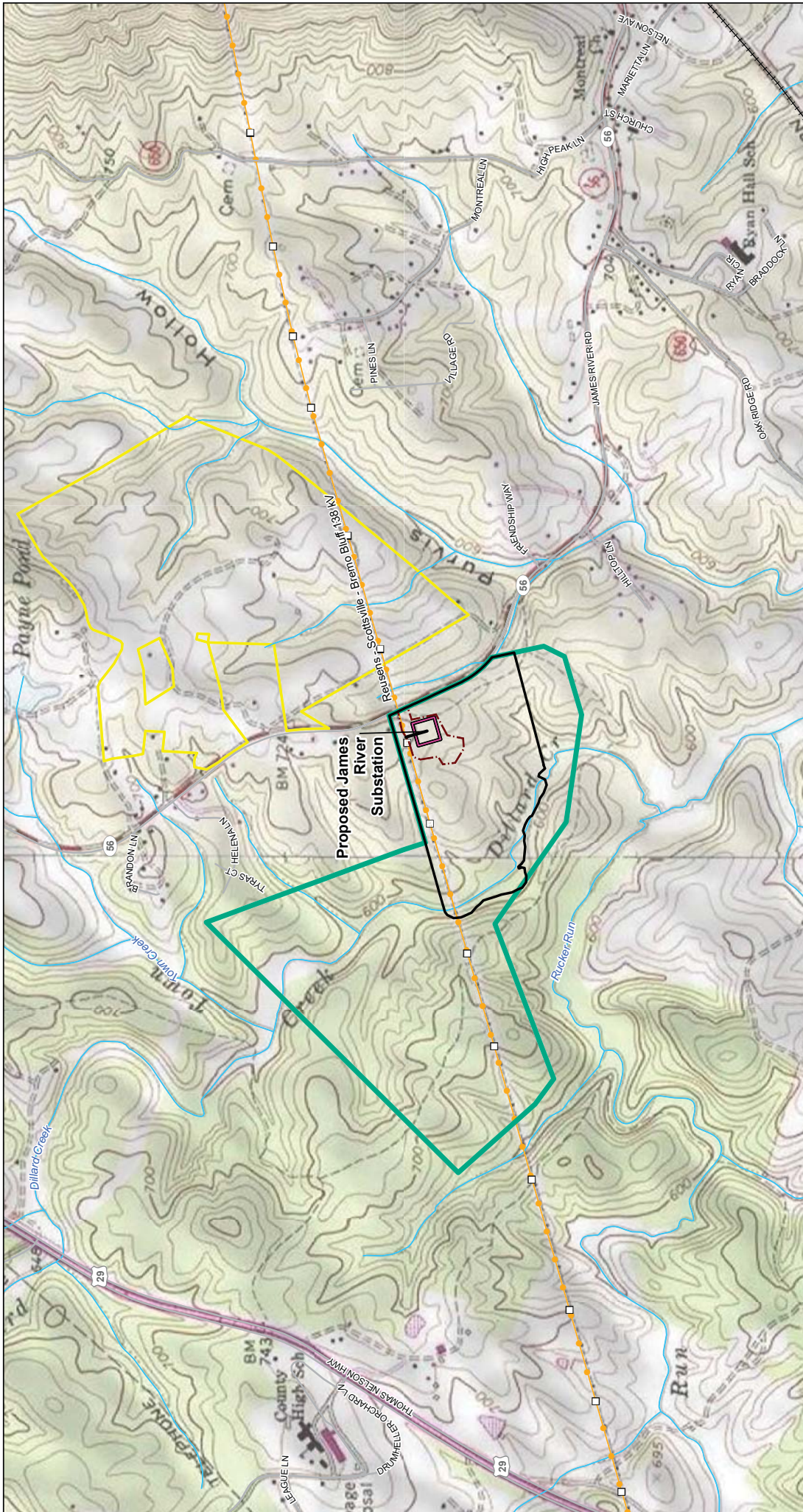
David Bell  
Biologist & Project Manager

Attachments: Figure 1 – Project Location  
Figure 2 – Floodplains and NWI Wetlands  
Figure 3 – Resource Location  
Attachment A – Delineated Wetland and Stream Tables  
Attachment B – Photographs  
Attachment C – Wetland Data Forms  
Attachment D – Upland Data Forms

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**FIGURE 1 PROJECT LOCATION**





**James River 138 kV Substation Project**  
 P17081010

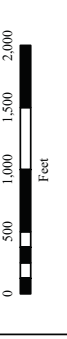
Figure 1: Project Location



Date: 10/6/2019, Author: CK, Project: 149232

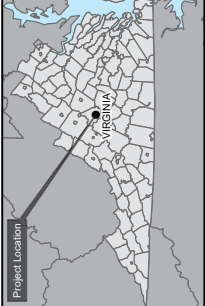
NAD 1983 StatePlane Virginia South FIPS  
 4502 Feet

Nelson County, Virginia



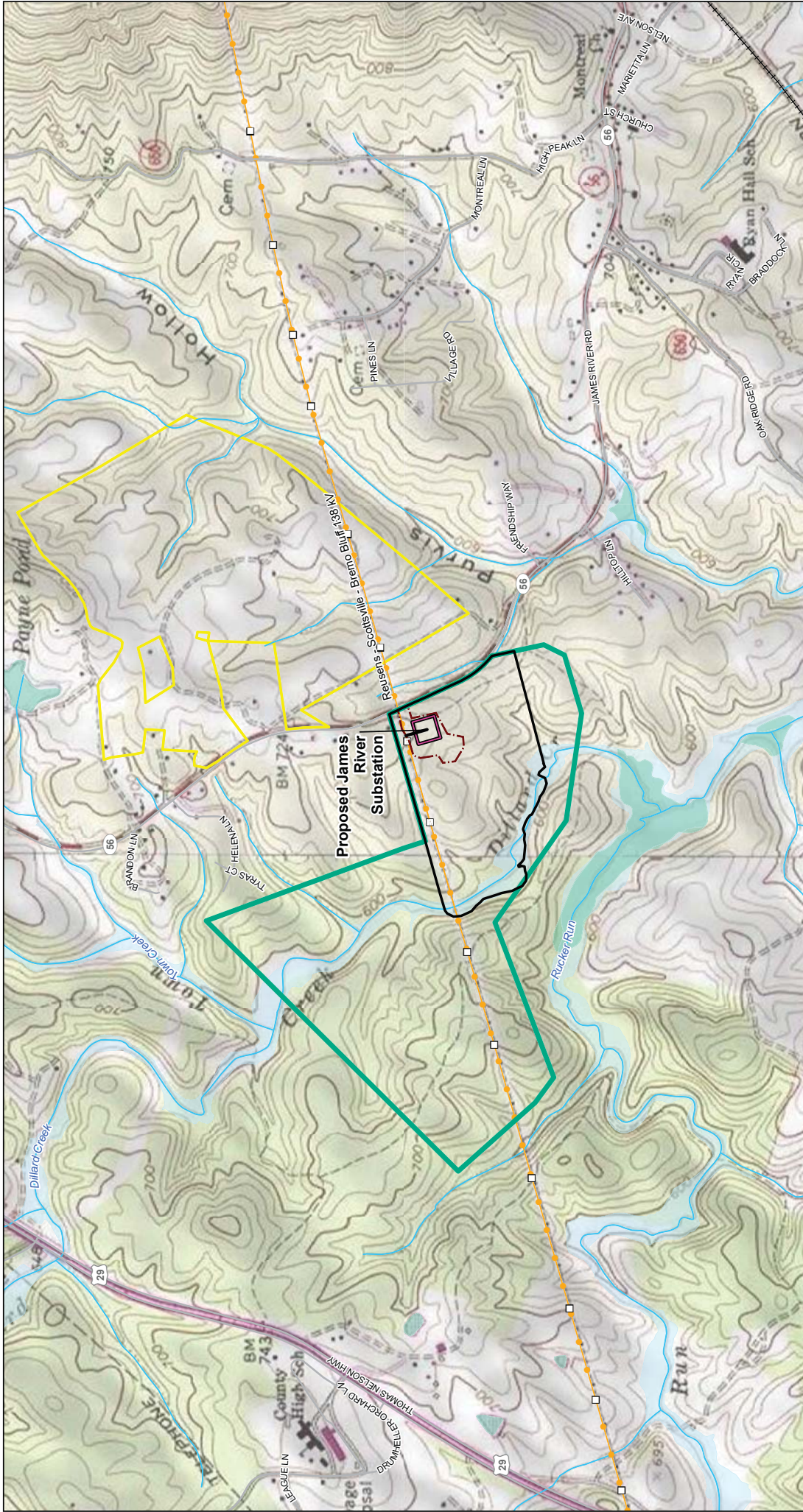
1" = 1,000'  
 OVERVIEW

- Survey Area
- Proposed Substation Limit of Disturbance
- Proposed Substation Fence Boundary
- James River Parcel
- 138 kV Transmission Line Connection
- Existing AEP Structure
- Existing AEP Transmission Line
- Railroad
- Stream (NHD)
- Virginia Outdoors Foundation (VOF) Easement
- Road



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**FIGURE 2 FLOODPLAINS AND NWI WETLANDS**



**James River 138 kV Substation Project**  
P17081010

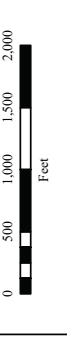
**Figure 2: Floodplain and NWI Wetlands**



Date: 10/6/2019, Author: RKS, Project: 149232

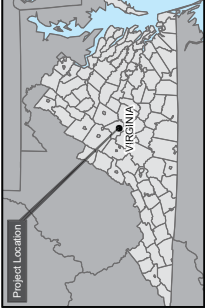
NAD 1983 StatePlane Virginia South FIPS  
4502 Feet

Nelson County, Virginia



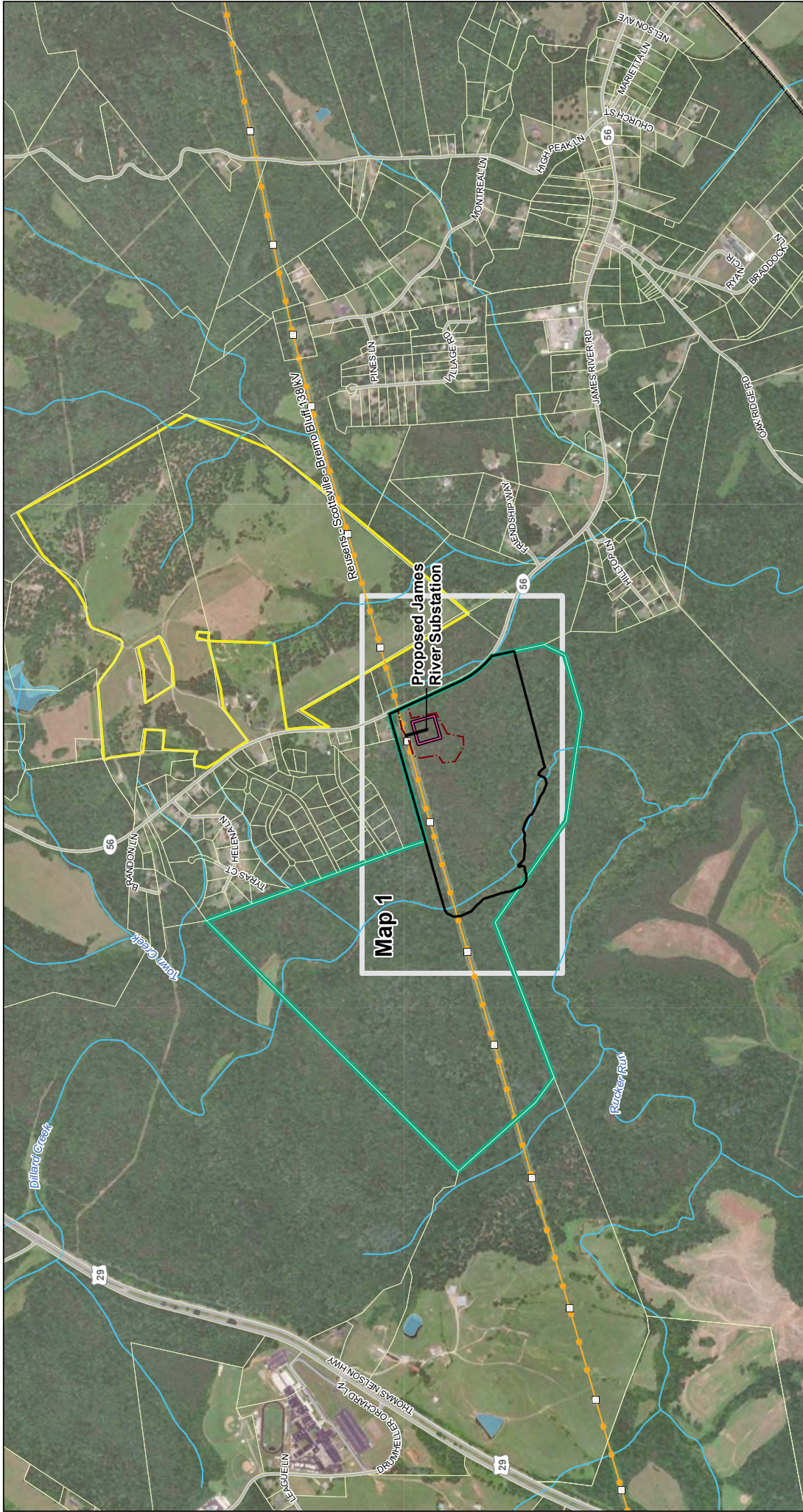
1" = 1,000'  
OVERVIEW

- Survey Area
- Proposed Substation Fence Boundary
- Proposed Substation Limit of Disturbance
- James River Parcel
- 138 kV Transmission Line Connection
- Existing AEP Structure
- Existing AEP Transmission Line
- Wetland (NWI)
- Railroad
- Stream (NHD)
- 100-Year Floodplain (FEMA)
- Virginia Outdoors Foundation (VOF) Easement
- Road



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**FIGURE 3 RESOURCE LOCATION**



**James River 138 kV Substation Project**  
P17081010

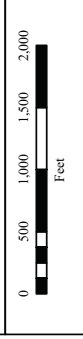
Figure 3: Resource Location



Date: 10/6/2020; Author: NKS; Project: 149232

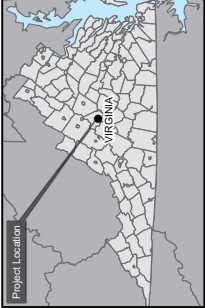
NAD 1983 StatePlane Virginia South FIPS  
4502 Feet

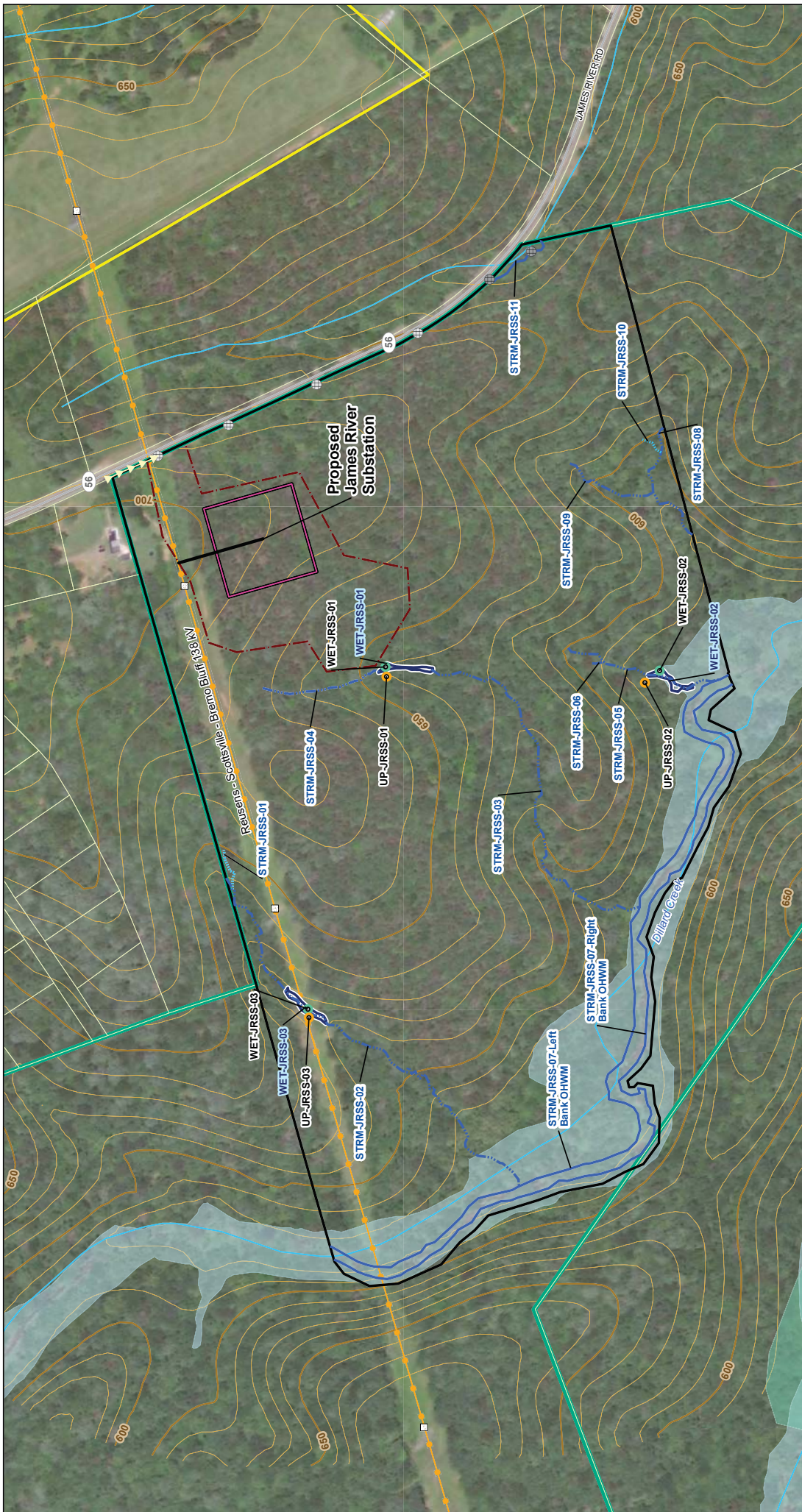
Nelson County, Virginia



1" = 1,000'  
MAP TILE INDEX

Survey Area	Railroad	World Imagery
Proposed Substation Fence Boundary	Stream (NHD)	Low Resolution 15m Imagery
Proposed Substation Limit of Disturbance	Lake/Pond (NHD)	High Resolution 60cm Imagery
James River Parcel	Parcel Boundary	High Resolution 30cm Imagery
138 kV Transmission Line Connection	Virginia Outdoors Foundation (VOF) Easement	Citations
Existing AEP Structure	Road	2.4m Resolution Metadata
Existing AEP Transmission Line	Map Tile	





**James River 138 kV Substation Project**  
P17081010

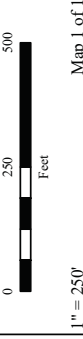
**Figure 3: Resource Location**



Date: 10/6/2020; Author: RKS; Project: 149232

NAD 1983 StatePlane Virginia South FIPS  
4502 Feet

Nelson County, Virginia



Map 1 of 1

- World Imagery**
- World Imagery
  - Low Resolution 15m Imagery
  - High Resolution 60cm Imagery
  - High Resolution 30cm Imagery
  - Citations
  - 60cm Resolution Metadata
- Legend**
- Wetland (Delimited)
  - Wetland (NWI)
  - 100-Year Floodplain (FEMA)
  - Parcel Boundary
  - Virginia Outdoors Foundation (VOF) Easement
  - Road
  - Index Contour (50')
  - Intermediate Contour (10')
- Upland Data Point**
- Existing Culvert; Inlet
  - Existing Culvert; Outlet
  - Ephemeral Stream (Delimited)
  - Intermittent Stream (Delimited)
  - Perennial Stream (Delimited)
  - Stream (NHD)
  - Roadside Ditch
- Survey Area**
- Proposed Substation Limit of Disturbance
  - Proposed Substation Fence Boundary
  - Potential James River Substation Site
  - 138 kV Transmission Line Connection
  - Existing AEP Structure
  - Existing AEP Transmission Line
  - Wetland Data Point
- Bank OHWM**
- Bank OHWM
  - Bank OHWM



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**ATTACHMENT A DELINEATED WETLAND AND STREAM TABLES**

**TABLE 1 DELINEATED WETLANDS IDENTIFIED WITHIN THE SURVEY AREA**

WETLAND ID	COWARDIN WETLAND TYPE <sup>1</sup>	COORDINATES OF CENTER POINT OF WETLAND		ACREAGE WITHIN SURVEY AREA	LIKELY JURISDICTIONAL STATUS <sup>2</sup>
WET-JRSS-01	PFO	37.728318	-78.871175	0.03	Jurisdictional (connected)
WET-JRSS-02	PSS	37.726334	-78.871283	0.04	Jurisdictional (connected)
WET-JRSS-03	PEM	37.729062	-78.874381	0.04	Jurisdictional (connected)
<b>Project Total</b>				<b>0.11</b>	

<sup>1</sup> PEM = Palustrine Emergent; PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested.

<sup>2</sup> Note that the official determination of the jurisdictional status of onsite features is under the purview of the USACE and may require an onsite inspection with USACE representatives in order to provide an official jurisdictional determination.

**TABLE 2 DELINEATED STREAMS IDENTIFIED WITHIN THE SURVEY AREA**

STREAM ID	FLOW REGIME	COORDINATES OF STREAM START WITHIN SURVEY AREA		COORDINATES OF STREAM END WITHIN SURVEY AREA		LENGTH WITHIN SURVEY AREA (FEET)	LIKELY JURISDICTIONAL STATUS <sup>1</sup>
STRM-JRSS-01	Ephemeral	37.729612	-78.873272	37.729678	-78.872900	120	Jurisdictional (connected)
STRM-JRSS-02	Intermittent	37.729662	-78.873164	37.727451	-78.876068	1,363	Jurisdictional (connected)
STRM-JRSS-03	Intermittent	37.728125	-78.871185	37.726553	-78.873419	1,091	Jurisdictional (connected)
STRM-JRSS-04	Intermittent	37.729392	-78.871366	37.728522	-78.871212	336	Jurisdictional (connected)
STRM-JRSS-05	Intermittent	37.727097	-78.870975	37.725968	-78.871273	458	Jurisdictional (connected)
STRM-JRSS-06	Intermittent	37.726918	-78.871120	37.726829	-78.871108	33	Jurisdictional (connected)
STRM-JRSS-07	Perennial (Dillard Creek)	37.725893	-78.871223	37.728869	-78.876643	2,599	Jurisdictional (connected)
STRM-JRSS-08	Intermittent	37.725863	-78.871311	37.728840	-78.876769	386	Jurisdictional (connected)
STRM-JRSS-09	Intermittent	37.726168	-78.869899	37.726391	-78.868891	272	Jurisdictional (connected)
STRM-JRSS-10	Ephemeral	37.727091	-78.869231	37.726465	-78.869501	65	Jurisdictional (connected)
STRM-JRSS-11	Perennial	37.726407	-78.869123	37.726548	-78.869002	208	Jurisdictional (connected)
<b>Project Total</b>						<b>6,931</b>	

<sup>1</sup> Note that the official determination of the jurisdictional status of onsite features is under the purview of the USACE and may require an onsite inspection with USACE representatives in order to provide an official jurisdictional determination.



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**ATTACHMENT B PHOTOGRAPHS**

**Photograph 1:**

Wetland WET-JRSS-01 (Forested  
Wetland, PFO)

Direction of View:  
North

Date:  
March 23, 2020



**Photograph 2:**

Wetland WET-JRSS-02 (Scrub-Shrub  
Wetland, PSS)

Direction of View:  
East

Date:  
March 24, 2020



**Photograph 3:**

Wetland WET-JRSS-03 (Emergent  
Wetland, PEM)

Direction of View:  
Northeast

Date:  
March 26, 2020



**Photograph 4:**

Stream STRM-JRSS-01 (Ephemeral Stream)

Direction of View:  
Downstream (West)

Date:  
March 23, 2020



**Photograph 5:**

Stream STRM-JRSS-02 (Intermittent Stream)

Direction of View:  
Downstream (West)

Date:  
March 23, 2020



**Photograph 6:**

Stream STRM-JRSS-03 (Intermittent Stream)

Direction of View:  
Upstream (Northeast)

Date:  
March 23, 2020



**Photograph 7:**

Stream STRM-JRSS-04 (Intermittent Stream)

Direction of View:  
Downstream (South)

Date:  
March 23, 2020



**Photograph 8:**

Stream STRM-JRSS-05 (Intermittent Stream)

Direction of View:  
Downstream (South)

Date:  
March 23, 2020



**Photograph 9:**

Stream STRM-JRSS-06 (Intermittent Stream)

Direction of View:  
Downstream (Southeast)

Date:  
March 23, 2020



**Photograph 10:**

Stream STRM-JRSS-07 (Perennial Stream, Dillard Creek)

Direction of View:  
Downstream (Northeast)

Date:  
March 23, 2020

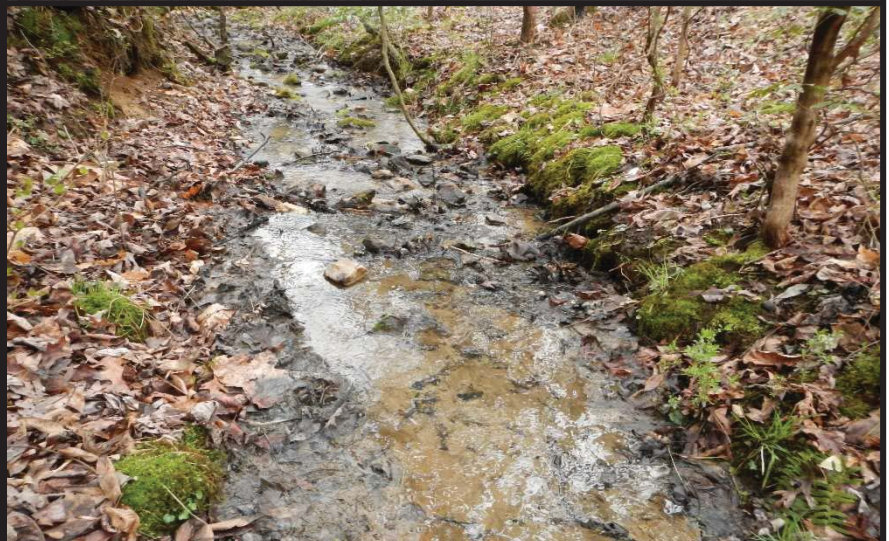


**Photograph 11:**

Stream STRM-JRSS-08 (Intermittent Stream)

Direction of View:  
Downstream (Southwest)

Date:  
March 23, 2020



**Photograph 12:**

Stream STRM-JRSS-09 (Intermittent Stream)

Direction of View:  
Downstream (South)

Date:  
March 23, 2020



**Photograph 13:**

Stream STRM-JRSS-10 (Ephemeral Stream)

Direction of View:  
Downstream (Southwest)

Date:  
March 23, 2020

Note: This stream contained flowing water in the channel during the field survey on March 23, 2020, due to stormwater runoff resulting from approximately 0.39 inches of rainfall over the 24 hour period preceding the survey (precipitation data sourced from Weather Underground's historical dataset for Lynchburg, Virginia, located at [www.wunderground.com](http://www.wunderground.com)).



**Photograph 14:**

Stream STRM-JRSS-11 (Perennial Stream)

Direction of View:  
Upstream (Northwest)

Date:  
March 24, 2020



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**ATTACHMENT C WETLAND DATA FORMS**

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Substation City/County: Nelson County Sampling Date: 2020-03-23  
 Applicant/Owner: Appalachian Power Company State: Virginia Sampling Point: WET-JRSS-01  
 Investigator(s): Dave Bell and Eric Duenkel Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 37.7284305 Long: -78.8711755 Datum: WGS 84  
 Soil Map Unit Name: Occoquan loam, 15 to 25 percent slopes (34D) NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 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? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <b>Forested (PFO) wetland</b>	

### HYDROLOGY

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

<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.5</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**Remarks:**

A direct hydrologic connection with an intermittent stream (STRM-JRSS-03) was observed in the field. Stream STRM-JRSS-03 flows through this wetland. This stream is likely a water of the US and Wetland WET-JRSS-01 is, therefore, likely jurisdictional.



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

Sampling Point: WET-JRSS-01

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carpinus caroliniana</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Liriodendron tulipifera</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
3. <u>Ulmus americana</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
4. <u>Fagus grandifolia</u>	<u>2</u>		<u>FACU</u>
5. _____	<u>0</u>		
6. _____	<u>0</u>		
<u>32%</u> = Total Cover			
50% of total cover: <u>16</u> 20% of total cover: <u>6</u>			
Sapling Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carpinus caroliniana</u>	<u>2</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
<u>2%</u> = Total Cover			
50% of total cover: <u>1</u> 20% of total cover: <u>0</u>			
Shrub Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
<u>50%</u> = Total Cover			
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>			
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rosa multiflora</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. <u>Ligustrum sinense</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
3. <u>Packera aurea</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
4. <u>Juncus effusus</u>	<u>1</u>		<u>FACW</u>
5. _____	<u>0</u>		
6. _____	<u>0</u>		
7. _____	<u>0</u>		
8. _____	<u>0</u>		
9. _____	<u>0</u>		
10. _____	<u>0</u>		
11. _____	<u>0</u>		
<u>21%</u> = Total Cover			
50% of total cover: <u>11</u> 20% of total cover: <u>4</u>			
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
<u>5%</u> = Total Cover			
50% of total cover: <u>3</u> 20% of total cover: <u>1</u>			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 56 (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>16</u>	x 2 = <u>32</u>
FAC species <u>17</u>	x 3 = <u>51</u>
FACU species <u>77</u>	x 4 = <u>308</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>110</u> (A)	<u>391</u> (B)

Prevalence Index = B/A = 3.6

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - 2 - Dominance Test is >50%
  - 3 - Prevalence Index is ≤3.0<sup>1</sup>
  - 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)
- <sup>1</sup>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?**      Yes       No

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

**SOIL**

Sampling Point: WET-JRSS-01

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	10YR 4/6	100					Sandy loam	
2 - 16	10YR 4/2	95	5YR 3/4	5	C	M	Sandy clay loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (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)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Substation City/County: Nelson County Sampling Date: 2020-03-24  
 Applicant/Owner: Appalachian Power Company State: Virginia Sampling Point: WET-JRSS-02  
 Investigator(s): Dave Bell and Eric Duenkel Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 37.7264303 Long: -78.8712238 Datum: WGS 84  
 Soil Map Unit Name: Colvard fine sandy loam, 0 to 2 percent slopes, occasionally flooded (10A) NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 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? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <b>Scrub-Shrub (PSS) wetland</b>	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.5</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**Remarks:**

A direct hydrologic connection with an intermittent stream (STRM-JRSS-05) was observed in the field. Stream STRM-JRSS-05 flows through this wetland. This stream is likely a water of the US and Wetland WET-JRSS-02 is, therefore, likely jurisdictional.

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

Sampling Point: WET-JRSS-02

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Carpinus caroliniana</u>	5	✓	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)														
2. _____	0																	
3. _____	0																	
4. _____	0																	
5. _____	0																	
6. _____	0																	
5% = Total Cover																		
50% of total cover: <u>3</u> 20% of total cover: <u>1</u>																		
<b>Sapling Stratum</b> (Plot size: <u>15 ft r</u> )																		
1. <u>Carpinus caroliniana</u>	2	✓	FAC	<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>7</u></td> <td>x 3 = <u>21</u></td> </tr> <tr> <td>FACU species <u>62</u></td> <td>x 4 = <u>248</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>94</u> (A)</td> <td><u>334</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.6</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>7</u>	x 3 = <u>21</u>	FACU species <u>62</u>	x 4 = <u>248</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>94</u> (A)	<u>334</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>20</u>	x 2 = <u>40</u>																	
FAC species <u>7</u>	x 3 = <u>21</u>																	
FACU species <u>62</u>	x 4 = <u>248</u>																	
UPL species <u>5</u>	x 5 = <u>25</u>																	
Column Totals: <u>94</u> (A)	<u>334</u> (B)																	
2. _____	0																	
3. _____	0																	
4. _____	0																	
5. _____	0																	
6. _____	0																	
2% = Total Cover																		
50% of total cover: <u>1</u> 20% of total cover: <u>0</u>																		
<b>Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																		
1. <u>Ligustrum sinense</u>	50	✓	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Rosa multiflora</u>	2		FACU															
3. _____	0																	
4. _____	0																	
5. _____	0																	
6. _____	0																	
52% = Total Cover																		
50% of total cover: <u>26</u> 20% of total cover: <u>10</u>																		
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																		
1. <u>Juncus effusus</u>	20	✓	FACW	<b>Definitions of Five Vegetation Strata:</b>  <b>Tree</b> – 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).  <b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  <b>Shrub</b> – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  <b>Herb</b> – 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.  <b>Woody vine</b> – All woody vines, regardless of height.														
2. <u>Rosa multiflora</u>	10	✓	FACU															
3. <u>Stellaria media</u>	5		UPL															
4. _____	0																	
5. _____	0																	
6. _____	0																	
7. _____	0																	
8. _____	0																	
9. _____	0																	
10. _____	0																	
11. _____	0																	
35% = Total Cover																		
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. _____	0																	
2. _____	0																	
3. _____	0																	
4. _____	0																	
5. _____	0																	
_____ = Total Cover																		
50% of total cover: _____      20% of total cover: _____																		

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

**SOIL**

Sampling Point: WET-JRSS-02

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	10YR 4/2	60	10YR 3/6	40	C	M	Sandy loam	
2 - 16	10YR 3/1	90	10YR 4/6	10	C	M	Sandy loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (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)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Substation City/County: Nelson County Sampling Date: 2020-03-26  
 Applicant/Owner: Appalachian Power Company State: Virginia Sampling Point: WET-JRSS-03  
 Investigator(s): Dave Bell and Eric Duenkel Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): P 136 Lat: 37.7290383 Long: -78.8744372 Datum: WGS 84  
 Soil Map Unit Name: Occoquan loam, 25 to 50 percent slopes, very stony (35E) NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 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? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: <b>Emergent (PEM) wetland</b>	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.5</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	

Remarks:  
 A direct hydrologic connection with an intermittent stream (STRM-JRSS-02) was observed in the field. Stream STRM-JRSS-02 flows through this wetland. This stream is likely a water of the US and Wetland WET-JRSS-03 is, therefore, likely jurisdictional.

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

Sampling Point: WET-JRSS-03

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____	0	_____	_____	
2. _____	0	_____	_____	
3. _____	0	_____	_____	
4. _____	0	_____	_____	
5. _____	0	_____	_____	
6. _____	0	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Sapling Stratum</b> (Plot size: <u>15 ft r</u> )				
1. _____	0	_____	_____	
2. _____	0	_____	_____	
3. _____	0	_____	_____	
4. _____	0	_____	_____	
5. _____	0	_____	_____	
6. _____	0	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				
1. _____	0	_____	_____	
2. _____	0	_____	_____	
3. _____	0	_____	_____	
4. _____	0	_____	_____	
5. _____	0	_____	_____	
6. _____	0	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				
1. <u>Juncus effusus</u>	60	✓	FACW	
2. <u>Dichanthelium clandestinum</u>	15	_____	FAC	
3. <u>Impatiens capensis</u>	15	_____	FACW	
4. <u>Eupatorium perfoliatum</u>	5	_____	FACW	
5. <u>Scirpus cyperinus</u>	5	_____	FACW	
6. _____	0	_____	_____	
7. _____	0	_____	_____	
8. _____	0	_____	_____	
9. _____	0	_____	_____	
10. _____	0	_____	_____	
11. _____	0	_____	_____	
_____ = Total Cover				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____	0	_____	_____	
2. _____	0	_____	_____	
3. _____	0	_____	_____	
4. _____	0	_____	_____	
5. _____	0	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
<b>Dominance Test worksheet:</b>				
Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)				
Total Number of Dominant Species Across All Strata: <u>1</u> (B)				
Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)				
<b>Prevalence Index worksheet:</b>				
Total % Cover of: _____ Multiply by:				
OBL species	<u>0</u>	x 1 = <u>0</u>		
FACW species	<u>85</u>	x 2 = <u>170</u>		
FAC species	<u>15</u>	x 3 = <u>45</u>		
FACU species	<u>0</u>	x 4 = <u>0</u>		
UPL species	<u>0</u>	x 5 = <u>0</u>		
Column Totals:	<u>100</u>	(A)	<u>215</u>	(B)
Prevalence Index = B/A = <u>2.2</u>				
<b>Hydrophytic Vegetation Indicators:</b>				
<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>				
<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Definitions of Five Vegetation Strata:</b>				
<b>Tree</b> – 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).				
<b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.				
<b>Shrub</b> – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.				
<b>Herb</b> – 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.				
<b>Woody vine</b> – All woody vines, regardless of height.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: WET-JRSS-03

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 2	10YR 3/3	100					Sandy loam	
2 - 16	2.5Y 4/2	95	10YR 5/6	5	C	PL / M	Sandy loam	
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (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)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



American Electric Power  
April 29, 2020

**ATTACHMENT D UPLAND DATA FORMS**

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Substation City/County: Nelson County Sampling Date: 2020-03-23  
 Applicant/Owner: Appalachian Power Company State: Virginia Sampling Point: UP-JRSS-01  
 Investigator(s): Dave Bell and Eric Duenkel Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 37.7284578 Long: -78.8712530 Datum: WGS 84  
 Soil Map Unit Name: Hayesville loam, 7 to 15 percent slopes (22C) NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 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? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: UP-JRSS-01

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus alba</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. <u>Quercus falcata</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
3. <u>Juniperus virginiana</u>	<u>5</u>		<u>FACU</u>
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
<u>35%</u> = Total Cover			
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>			
Sapling Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	<u>0</u>		
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
_____ = Total Cover			
50% of total cover: _____      20% of total cover: _____			
Shrub Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
<u>10%</u> = Total Cover			
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>			
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	<u>0</u>		
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
7. _____	<u>0</u>		
8. _____	<u>0</u>		
9. _____	<u>0</u>		
10. _____	<u>0</u>		
11. _____	<u>0</u>		
_____ = Total Cover			
50% of total cover: _____      20% of total cover: _____			
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	<u>0</u>		
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
_____ = Total Cover			
50% of total cover: _____      20% of total cover: _____			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>45</u>	x 4 =	<u>180</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>45</u> (A)		<u>180</u> (B)

Prevalence Index = B/A = 4

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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**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.

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**Hydrophytic Vegetation Present?**      Yes \_\_\_\_\_      No

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

**SOIL**

Sampling Point: UP-JRSS-01

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	7.5YR 4/6	100					Clay loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (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)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Substation City/County: Nelson County Sampling Date: 2020-03-24  
 Applicant/Owner: Appalachian Power Company State: Virginia Sampling Point: UP-JRSS-02  
 Investigator(s): Dave Bell and Eric Duenkel Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): P 136 Lat: 37.7264860 Long: -78.8713307 Datum: WGS 84  
 Soil Map Unit Name: Hayesville Colvard fine sandy loam, 0 to 2 percent slopes, occasionally flooded (10A) NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 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? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: UP-JRSS-02

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
2. <u>Quercus alba</u>	<u>10</u>		<u>FACU</u>
3. <u>Platanus occidentalis</u>	<u>5</u>		<u>FACW</u>
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
<u>65%</u> = Total Cover			
50% of total cover: <u>33</u>		20% of total cover: <u>13</u>	
Sapling Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carpinus caroliniana</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Liriodendron tulipifera</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
<u>10%</u> = Total Cover			
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>	
Shrub Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	<u>0</u>		
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
_____ = Total Cover			
50% of total cover: _____		20% of total cover: _____	
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Stellaria media</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>UPL</u>
2. <u>Lonicera japonica</u>	<u>5</u>		<u>FACU</u>
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
6. _____	<u>0</u>		
7. _____	<u>0</u>		
8. _____	<u>0</u>		
9. _____	<u>0</u>		
10. _____	<u>0</u>		
11. _____	<u>0</u>		
<u>35%</u> = Total Cover			
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>	
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	<u>0</u>		
2. _____	<u>0</u>		
3. _____	<u>0</u>		
4. _____	<u>0</u>		
5. _____	<u>0</u>		
_____ = Total Cover			
50% of total cover: _____		20% of 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species <u>30</u>	x 5 = <u>150</u>
Column Totals: <u>110</u> (A)	<u>455</u> (B)

Prevalence Index = B/A = 4.1

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>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?** Yes \_\_\_\_\_ No

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

**SOIL**

Sampling Point: UP-JRSS-02

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	10YR 3/6	100					Sandy clay loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (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)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Substation City/County: Nelson County Sampling Date: 2020-03-26  
 Applicant/Owner: Appalachian Power Company State: Virginia Sampling Point: UP-JRSS-03  
 Investigator(s): Dave Bell and Eric Duenkel Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10  
 Subregion (LRR or MLRA): P 136 Lat: 37.7290465 Long: -78.8744805 Datum: WGS 84  
 Soil Map Unit Name: Occoquan loam, 25 to 50 percent slopes, very stony (35E) NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 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? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	



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

Sampling Point: UP-JRSS-03

<p><b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:35%;"></th> <th style="width:15%; text-align: center;">Absolute % Cover</th> <th style="width:15%; text-align: center;">Dominant Species?</th> <th style="width:15%; text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>2. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>3. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>4. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>5. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>6. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> <tr><td colspan="4" style="text-align: center;">50% of total cover: _____ 20% of total cover: _____</td></tr> </tbody> </table> <p><b>Sapling Stratum</b> (Plot size: <u>15 ft r</u> )</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>2. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>3. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>4. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>5. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>6. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> <tr><td colspan="4" style="text-align: center;">50% of total cover: _____ 20% of total cover: _____</td></tr> </tbody> </table> <p><b>Shrub Stratum</b> (Plot size: <u>15 ft r</u> )</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>2. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>3. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>4. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>5. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>6. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> <tr><td colspan="4" style="text-align: center;">50% of total cover: _____ 20% of total cover: _____</td></tr> </tbody> </table> <p><b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Andropogon virginicus</u></td><td style="text-align: center;">70</td><td style="text-align: center;">✓</td><td style="text-align: center;">FACU</td></tr> <tr><td>2. <u>Achillea millefolium</u></td><td style="text-align: center;">5</td><td></td><td style="text-align: center;">FACU</td></tr> <tr><td>3. <u>Ligustrum sinense</u></td><td style="text-align: center;">2</td><td></td><td style="text-align: center;">FACU</td></tr> <tr><td>4. <u>Rubus occidentalis</u></td><td style="text-align: center;">2</td><td></td><td style="text-align: center;">UPL</td></tr> <tr><td>5. <u>Smilax rotundifolia</u></td><td style="text-align: center;">2</td><td></td><td style="text-align: center;">FAC</td></tr> <tr><td>6. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>7. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>8. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>9. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>10. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>11. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: right;">81% = Total Cover</td></tr> <tr><td colspan="4" style="text-align: center;">50% of total cover: <u>41</u> 20% of total cover: <u>16</u></td></tr> </tbody> </table> <p><b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )</p> <table style="width:100%; 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Indicator Status	1. _____	0			2. _____	0			3. _____	0			4. _____	0			5. _____	0			6. _____	0			_____ = Total Cover				50% of total cover: _____ 20% of total cover: _____				1. _____	0			2. _____	0			3. _____	0			4. _____	0			5. _____	0			6. _____	0			_____ = Total Cover				50% of total cover: _____ 20% of total cover: _____				1. _____	0			2. _____	0			3. _____	0			4. _____	0			5. _____	0			6. _____	0			_____ = Total Cover				50% of total cover: _____ 20% of total cover: _____				1. <u>Andropogon virginicus</u>	70	✓	FACU	2. <u>Achillea millefolium</u>	5		FACU	3. <u>Ligustrum sinense</u>	2		FACU	4. <u>Rubus occidentalis</u>	2		UPL	5. <u>Smilax rotundifolia</u>	2		FAC	6. _____	0			7. _____	0			8. _____	0			9. _____	0			10. _____	0			11. _____	0			81% = Total Cover				50% of total cover: <u>41</u> 20% of total cover: <u>16</u>				1. _____	0			2. _____	0			3. _____	0			4. _____	0			5. _____	0			_____ = Total Cover				50% of total cover: _____ 20% of total cover: _____				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)</p> <p><b>Prevalence Index worksheet:</b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%; text-align: left;">Total % Cover of:</th> <th style="width:50%; text-align: left;">Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr> <tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr> <tr><td>FAC species <u>2</u></td><td>x 3 = <u>6</u></td></tr> <tr><td>FACU species <u>77</u></td><td>x 4 = <u>308</u></td></tr> <tr><td>UPL species <u>2</u></td><td>x 5 = <u>10</u></td></tr> <tr><td>Column Totals: <u>81</u> (A)</td><td><u>324</u> (B)</td></tr> </tbody> </table> <p style="text-align: right;">Prevalence Index = B/A = <u>4</u></p> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> 2 - Dominance Test is &gt;50%</p> <p><input type="checkbox"/> 3 - Prevalence Index is ≤3.0<sup>1</sup></p> <p><input type="checkbox"/> 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p><b>Definitions of Five Vegetation Strata:</b></p> <p><b>Tree</b> – 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).</p> <p><b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.</p> <p><b>Shrub</b> – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.</p> <p><b>Herb</b> – 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.</p> <p><b>Woody vine</b> – All woody vines, regardless of height.</p> <p><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/></p>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>2</u>	x 3 = <u>6</u>	FACU species <u>77</u>	x 4 = <u>308</u>	UPL species <u>2</u>	x 5 = <u>10</u>	Column Totals: <u>81</u> (A)	<u>324</u> (B)
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**SOIL**

Sampling Point: UP-JRSS-03

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	10YR 4/6	100					Sandy clay loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (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)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

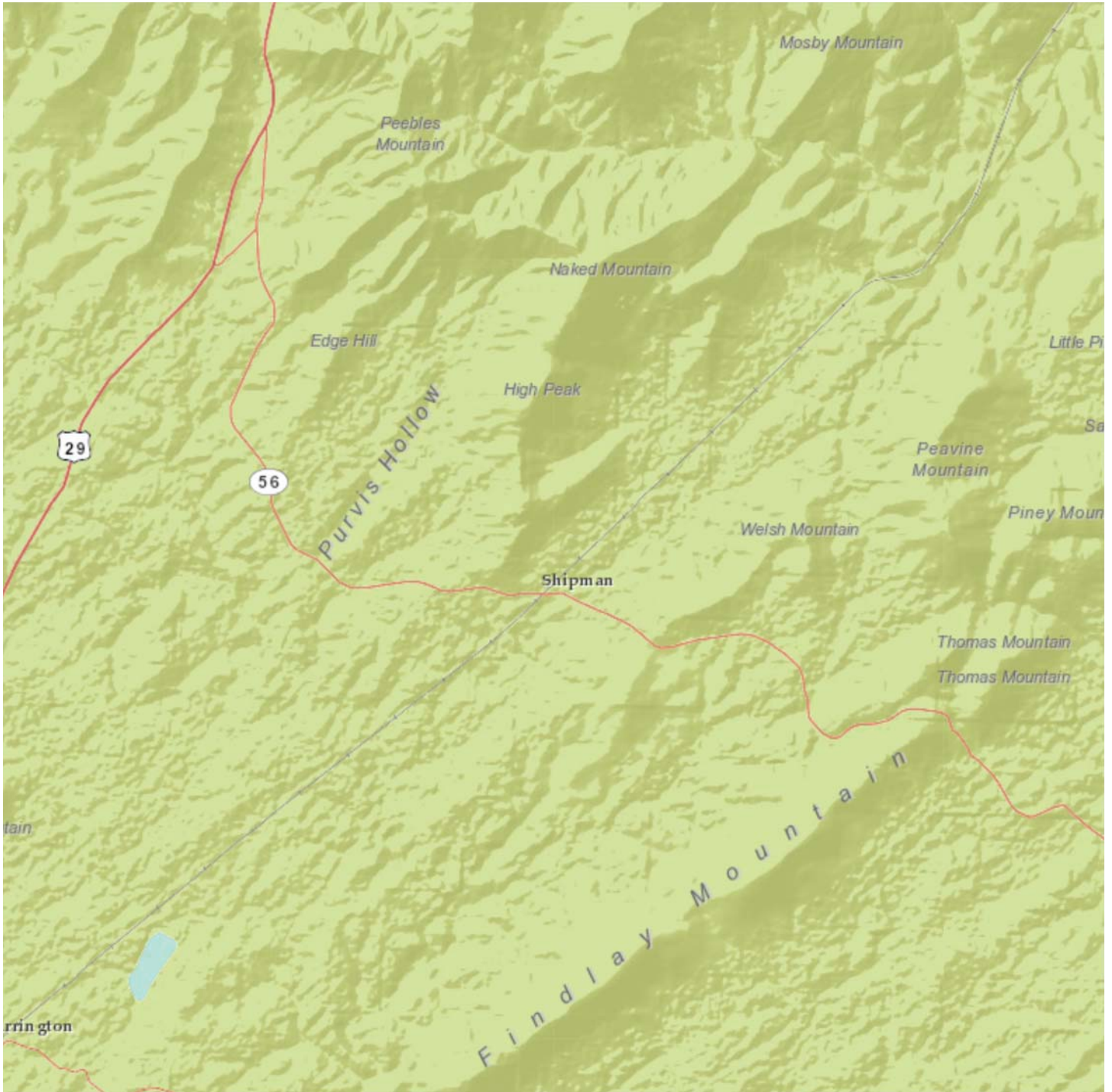
**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes \_\_\_\_\_    No

Remarks:

**ATTACHMENT 2.F.1:  
HAZARDOUS WASTE INFORMATION**





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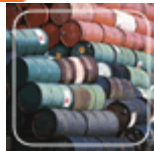
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**Search Parameters:** ZIP Code: 22922

**Location Address:** 12340-12498 James River Road

**City Name:** Arington

**County Name:** Nelson

**State Abbreviation:** VA

Results are based on data extracted on NOV-25-2019



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**Search Parameters: ZIP Code: 22922**

**Location Address:** 12340-12498 James River Road

**City Name:** Arlington

**County Name:** nelson

**State Abbreviation:** VA

**Sites:** 1 Only Active

Results are based on data extracted on JUN-01-2020

**No Results found.**

**Total Number of Facilities Retrieved: 0**

An official website of the United States government.

[Close](#)

We've made some changes to [EPA.gov](#). If the information you are looking for is not here, you may be able to find it on the [EPA Web Archive](#) or the [January 19, 2017 Web Snapshot](#).



## It's National Pollution Prevention (P2) Week!

The TRI tracks how facilities are reducing the amount of chemical waste generated and released into the environment.

- [Find out about the TRI P2 information and how to get it](#)
- [Read chemical- and industry-specific P2 analyses](#)

1 2 3 4

**What is the TRI?** The Toxics Release Inventory (TRI) is a resource for learning about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. TRI data support informed decision-making by communities, government agencies, companies, and others. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program.

### What is the TRI?



[Learn why the TRI was created and what](#)

### Report TRI Data



[Resources for facilities to complete and](#)

### Access & Use Data



[TRI data, materials for specific audiences, and](#)



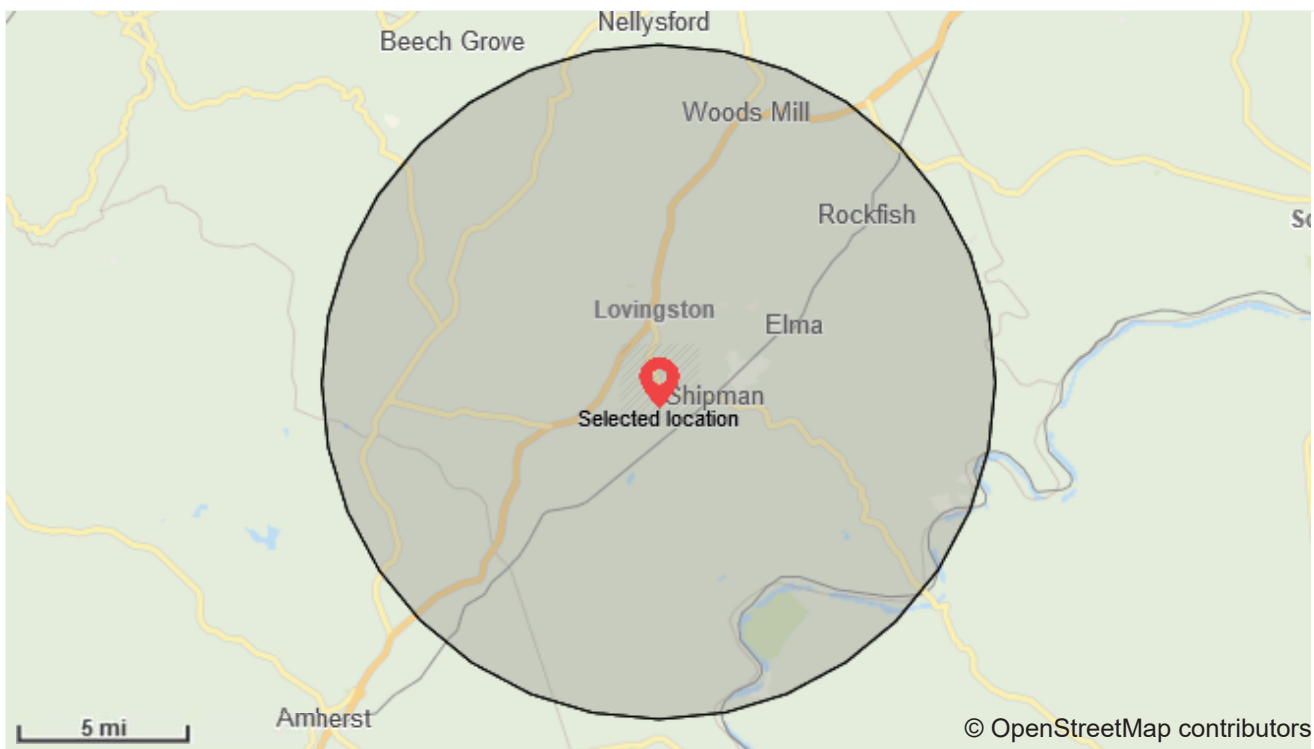
[chemicals and industry sectors it covers](#)

[submit TRI reporting forms](#)

[examples of TRI uses](#)

The map shows the location of TRI facilities for Reporting Year 2018 based on your search criteria. Use the menu options on the left to learn more about these facilities.

There are no facilities within 10 miles of your location. If you think this is a mistake, go to "New Search" to refresh the search and try again.



### Map Options

Add non-TRI facilities to map

Enter a value between 1 and 100 miles in the box below to find facilities within that distance of the location you selected.

Miles:

**ATTACHMENT 2.G.1:  
USFWS IPAC REPORT**

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Nelson County, Virginia



## Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

📅 (804) 693-9032

6669 Short Lane

Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*  
 No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/9045>

Threatened

## Clams

NAME

STATUS

James Spiny mussel *Pleurobema collina*  
 No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/2212>

Endangered

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

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.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

**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](#) and/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 migratory birds potentially occurring 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 [AKN Phenology 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 to 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, migrating or present year-round in my project 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 refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). 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.

## Facilities

### National Wildlife Refuge lands

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 AT THIS LOCATION.

## Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

### FRESHWATER EMERGENT WETLAND

[PEM1A](#)

[PEM1C](#)

### FRESHWATER FORESTED/SHRUB WETLAND

[PFO1A](#)

[PSS1/EM1E](#)

[PFO1C](#)

[PSS1/FO1A](#)

[PFO1/EM1C](#)

[PFO1Ah](#)

[PFO1/SS1A](#)

[PSS1A](#)

[PFO1/EM1E](#)

[PSS1/4A](#)

### FRESHWATER POND

[PUBHh](#)

[PUBFh](#)

[PABHh](#)

[PUBFb](#)

[PUBHx](#)

### RIVERINE

[R5UBH](#)

[R4SBC](#)



## ATTACHMENT 2.G.3: VDWR RESOURCES

**VaFWIS Search Report** Compiled on 10/7/2020, 6:54:30 PM

[Help](#)

Observations reported or potential habitat occurs within a **3 mile radius around point 37,43,46.1 -78,52,10.7**  
 in **125 Nelson County, VA**

[View Map of Site Location](#)

467 Known or Likely Species ordered by Status Concern for Conservation  
 (displaying first 25) (25 species with Status\* or Tier I\*\* or Tier II\*\* )

<a href="#">BOVA Code</a>	<a href="#">Status*</a>	<a href="#">Tier**</a>	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>
060017	FESE	Ia	<a href="#">Spinymussel, James</a>	Parvaspina collina
050022	FTST	Ia	<a href="#">Bat, northern long-eared</a>	Myotis septentrionalis
060029	FTST	IIa	<a href="#">Lance, yellow</a>	Elliptio lanceolata
050020	SE	Ia	<a href="#">Bat, little brown</a>	Myotis lucifugus
050027	SE	Ia	<a href="#">Bat, tri-colored</a>	Perimyotis subflavus
020052	SE	IIa	<a href="#">Salamander, eastern tiger</a>	Ambystoma tigrinum
040096	ST	Ia	<a href="#">Falcon, peregrine</a>	Falco peregrinus
040293	ST	Ia	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus
100155	ST	Ia	<a href="#">Skipper, Appalachian grizzled</a>	Pyrgus wyandot
060081	ST	IIa	<a href="#">Floater, green</a>	Lasmigona subviridis
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	Lanius ludovicianus migrans
030063	CC	IIIa	<a href="#">Turtle, spotted</a>	Clemmys guttata
030031	CC	IIIc	<a href="#">Kingsnake, scarlet</a>	Lampropeltis elapsoides
030012	CC	IVa	<a href="#">Rattlesnake, timber</a>	Crotalus horridus
040092		Ia	<a href="#">Eagle, golden</a>	Aquila chrysaetos
040040		Ia	<a href="#">Ibis, glossy</a>	Plegadis falcinellus
040306		Ia	<a href="#">Warbler, golden-winged</a>	Vermivora chrysoptera
100248		Ia	<a href="#">Fritillary, regal</a>	Speyeria idalia idalia
020023		IIa	<a href="#">Salamander, mole</a>	Ambystoma talpoideum
040052		IIa	<a href="#">Duck, American black</a>	Anas rubripes
040320		IIa	<a href="#">Warbler, cerulean</a>	Setophaga cerulea
040140		IIa	<a href="#">Woodcock, American</a>	Scolopax minor
040203		IIb	<a href="#">Cuckoo, black-billed</a>	Coccyzus erythrophthalmus
040105		IIb	<a href="#">Rail, king</a>	Rallus elegans
040304		IIc	<a href="#">Warbler, Swainson's</a>	Limnothlypis swainsonii

To view **All 467 species** [View 467](#)

\*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 Wildlife Action Plan Conservation Opportunity Ranking:  
 a - On the ground management strategies/actions exist and can be feasibly implemented.;  
 b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;  
 c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

**Anadromous Fish Use Streams**

N/A

**Impediments to Fish Passage** ( 1 records )

[View Map of All Fish Impediments](#)

ID	Name	River	View Map
420	<a href="#">NELSON DAM</a>	TR-BOBS CREEK	<a href="#">Yes</a>

**Threatened and Endangered Waters**

N/A

**Managed Trout Streams**

N/A

**Bald Eagle Concentration Areas and Roosts**

N/A

**Bald Eagle Nests**

N/A

**Habitat Predicted for Aquatic WAP Tier I & II Species** ( 1 Reach )

[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					
Dillard Creek (20802031)	ST	060081	ST	IIa	<a href="#">Floater, green</a>	Lasmigona subviridis	<a href="#">Yes</a>

Dillard Creek (20802031)	ST	060081	ST	Ila	<a href="#">Floater, green</a>	Lasmigona subviridis	<a href="#">Yes</a>
-----------------------------	----	--------	----	-----	------------------------------------	-------------------------	---------------------

**Habitat Predicted for Terrestrial WAP Tier I & II Species**

N/A

**Virginia Breeding Bird Atlas Blocks** ( 2 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**	
39116	<a href="#">Horseshoe Mtn., SE</a>	55		II	<a href="#">Yes</a>
40115	<a href="#">Lovington, SW</a>	2			<a href="#">Yes</a>

**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
125	<a href="#">Nelson</a>	396	FTSE	I

**USGS 7.5' Quadrangles:**

Arrington  
 Horseshoe Mtn.  
 Shipman  
 Lovington

**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
JM27	<a href="#">Tye River-Brown Creek</a>	61	ST	I
JM32	<a href="#">Rucker Run</a>	53	ST	I
JM38	<a href="#">Rockfish River-Buck Creek</a>	54	ST	I

JM40	<a href="#">Rockfish River-Dutch Creek</a>	61	ST	I
------	--	----	----	---

Compiled on 10/7/2020, 6:54:31 PM V1056816.0 report=V searchType= R dist= 4828.032 poi= 37,43,46.1 -78,52,10.7

**ATTACHMENT 2.I.1:  
VDHR PRE-APPLICATION ANALYSIS**

REPORT >

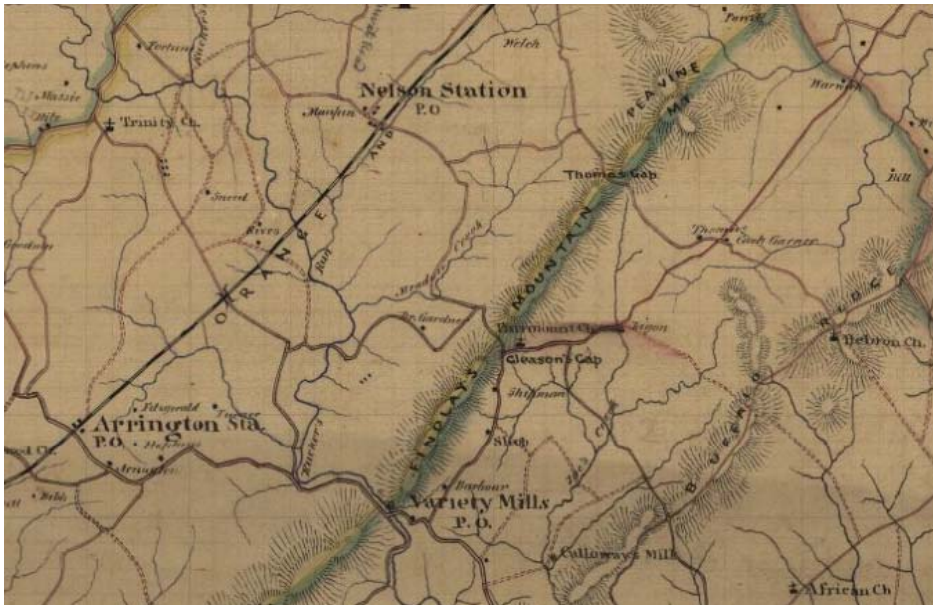
# SCC Pre-Application Analysis Cultural Resources for the James River 138 kV Substation

LOCATION > Nelson County, Virginia

DATE > NOVEMBER 2020

PREPARED FOR >

POWER Engineers, Inc.



PREPARED BY >

Dutton + Associates, LLC

PROJECT REVIEW # >

## Dutton + Associates

CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

**SCC Pre-Application Analysis  
Cultural Resources for the  
James River 138 kV Substation**

**Nelson County, Virginia**

***PREPARED FOR:***

POWER ENGINEERS, INC.

***PREPARED BY:***

DUTTON + ASSOCIATES, LLC  
1115 Crowder Drive  
Midlothian, Virginia 23236  
804.644.8290

***PRINCIPAL INVESTIGATOR:***

Robert J. Taylor, Jr. M.A.

**November 2020**



**ABSTRACT**

*In October 2020, Dutton + Associates, LLC (D+A) conducted a Pre-Application Analysis (Analysis) of cultural resources for the James River 138 kV Substation in Nelson County, Virginia. The analysis was performed for POWER Engineers on behalf of Appalachian Power Company (Appalachian Power) 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 James River 138 kV Substation is Component 2 of the larger Appalachian Power Central Virginia Transmission Reliability Project (CVTRP) throughout the region to upgrade the power grid in Virginia by making improvements to the transmission infrastructure. As part of the , Appalachian Power proposes to construct a new in-line substation with a one span drop from the existing Reusens - Scottsville - Bremono 138 kV transmission line. The new substation will be located on an approximately 11.2-acre property, purchased by the Company and will be built on a wooded property crossed by the existing 100-foot transmission line right-of-way (ROW). Two existing structures on each side of the proposed substation location and one within the footprint will be rebuilt to provide the new connection.*

*The background research conducted as part of this analysis was guided by VDHR guidance and designed to identify all previously recorded National Historic Landmarks (NHL) located within 1.5 miles of the James River 138 kV Substation Component Area, all historic properties listed in the National Register of Historic Places (NRHP) or battlefields located within 1 mile of the James River 138 kV Substation Component Area, all historic properties considered eligible for listing in the NRHP located within 0.5 miles of the James River 138 kV Substation Component Area, and all buildings, structures, and archaeological sites located directly within the James River 138 kV Substation Component 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 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 Virginia Department of Historic Resources (VDHR) Virginia Cultural Resource Information System (VCRIS) inventory records revealed that a total of 16 previously recorded architectural resources are located 1.5 miles of the James River 138 kV Substation Component*

*Area. Of these, there are no NHLs located within 1.5 miles of the Project area, no properties listed in the NRHP or battlefields located within 1 mile of the Project area, and no properties that have been determined eligible for listing in the NRHP within 0.5 miles of the Project area.*

*The VCRIS also revealed there are no previously recorded archaeological sites within 1.0 mile of the Project area.*

*As there are no previously recorded NHLs within 1.5 miles, NRHP-listed resources within 1.0 mile, NRHP-eligible properties within 0.5 miles, or archaeological sites within the Project area, the James River 138 kV Substation Component will not pose impacts to previously recorded cultural resources.*

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## 1. INTRODUCTION

In October 2020, Dutton + Associates, LLC (D+A) conducted a Pre-Application Analysis (analysis) of cultural resources for the James River 138 kV Substation Component in Nelson County, Virginia. The analysis was performed for POWER Engineers on behalf of Appalachian Power Company (Appalachian Power) 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 in the National Register of Historic Places (NRHP), battlefields, and historic landscapes located within a 1 mile buffer around the Project area, 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.

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## 2. PROJECT DESCRIPTION

The James River 138 kV Substation is Component 2 of the Company's larger CVTRP throughout the region to upgrade the power grid in Virginia by making improvements to the transmission infrastructure. The CVTRP will provides a new electrical source to the region, increases reliability to customers and supports the retirement of aging infrastructure. Component 2 is located on James River Road south of the Lovingston vicinity in Nelson County, Virginia (Figure 2-1.)

As part of the Project, Appalachian Power proposes to construct a new in-line substation with a one span drop from the existing Reusens - Scottsville - Bremono 138 kV transmission line (Figure 2-2). The new substation will be 11.24 acres and be built on a currently wooded property bordering the existing 100-foot transmission line right-of-way (ROW) (Figure 2-3). Two existing structures on each side of the proposed substation location and one within the footprint will be rebuilt to provide the new connection.

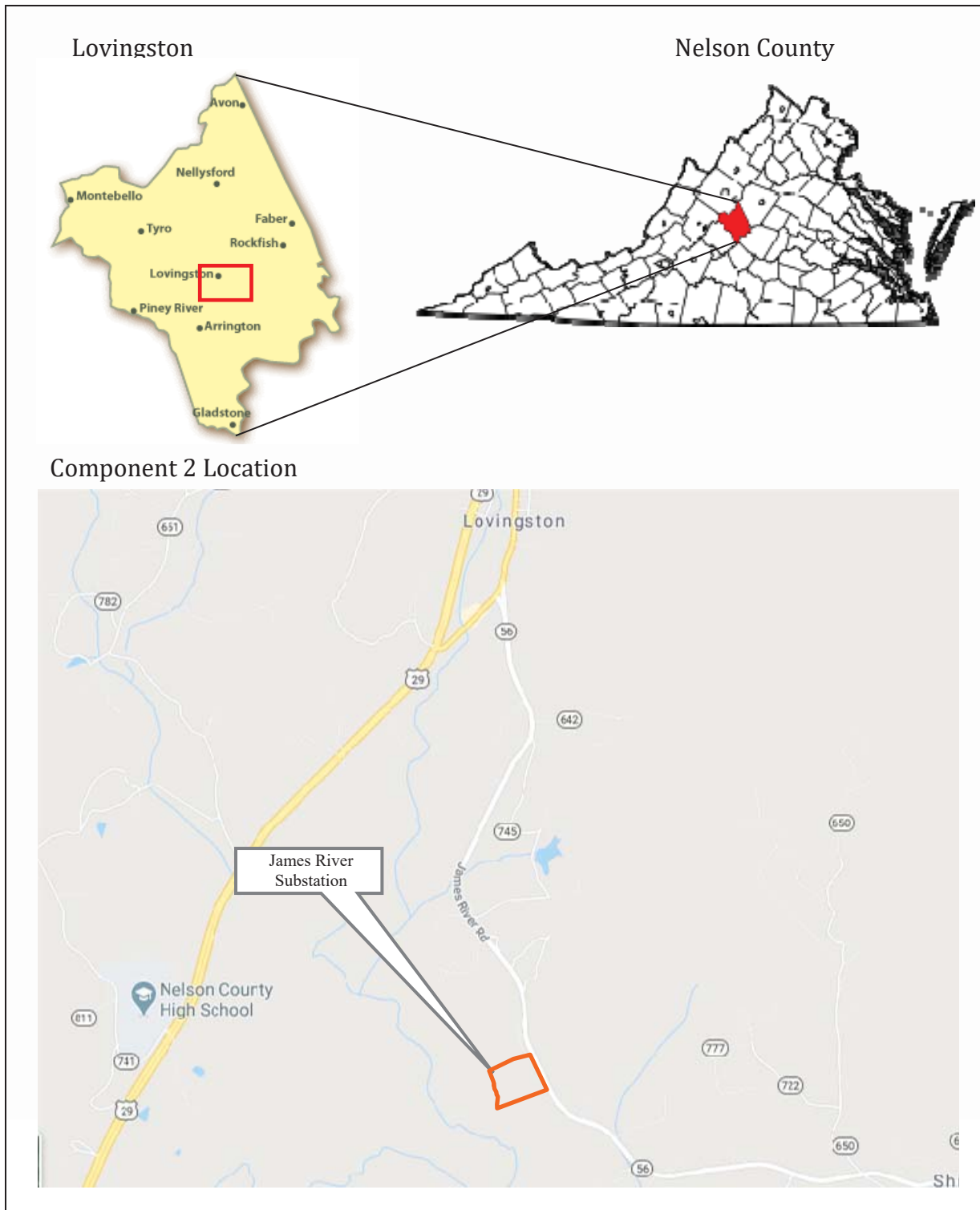


Figure 2-1: Project area general location



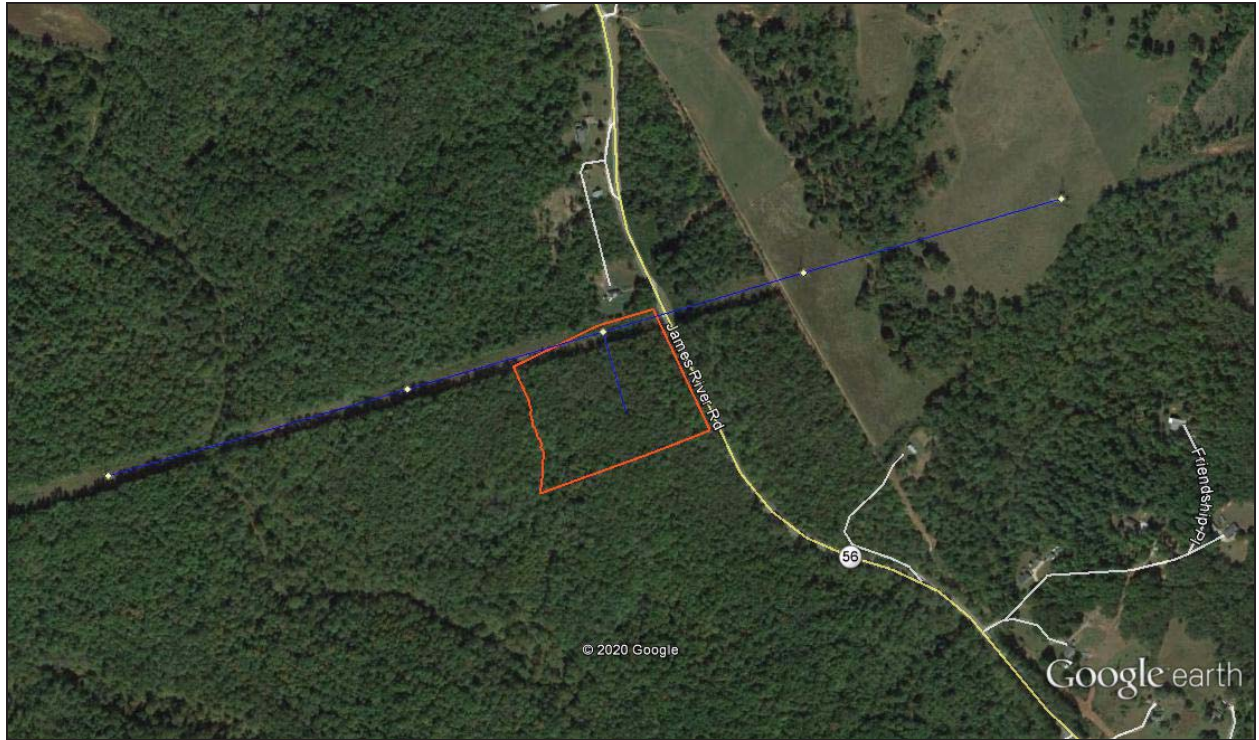


Figure 2-2: Aerial view of Project area



Figure 2-3: Site Plan and schematics. Source: POWER Engineers, Inc.

### 3. RESEARCH DESIGN

The intent of this effort was to identify all known historic properties within the vicinity of the James River 138 kV Substation Component 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 James River 138 kV Substation Component Area. 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 October 2020, 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. 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 James River 138 kV Substation Component Area, all historic properties listed in the NRHP, battlefields, and historic landscapes located within 1.0 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 would typically include visual inspection of those previously recorded historic properties listed in the NRHP located within 1.0 mile of the Project area, and all properties considered eligible for listing in the NRHP within 0.5 miles of the Project area; however, as no such properties were identified as part of the archives search, field reconnaissance was not conducted as part of this effort.

**ASSESSMENT OF POTENTIAL IMPACTS**

Following identification of historic properties, D+A assessed each resource for potential impacts brought about by the James River 138 kV Substation Component Area. When assessing impacts, D+A considered those qualities and characteristics that qualify the property for listing and whether the project had 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 James River 138 kV Substation Component Area 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 (fully visible and incompatible with character-defining viewshed or setting), moderate (partially visible and incompatible with character-defining viewshed or setting), or minimal (not visible and/or not out of character with existing viewscape).

**REPORT PREPARATION**

The results of the archival research 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 the Project area has not been subject to previous cultural resource study, nor have any mapped Phase I cultural resource surveys been conducted within 1.0 mile of the Project area (Figure 4-1).

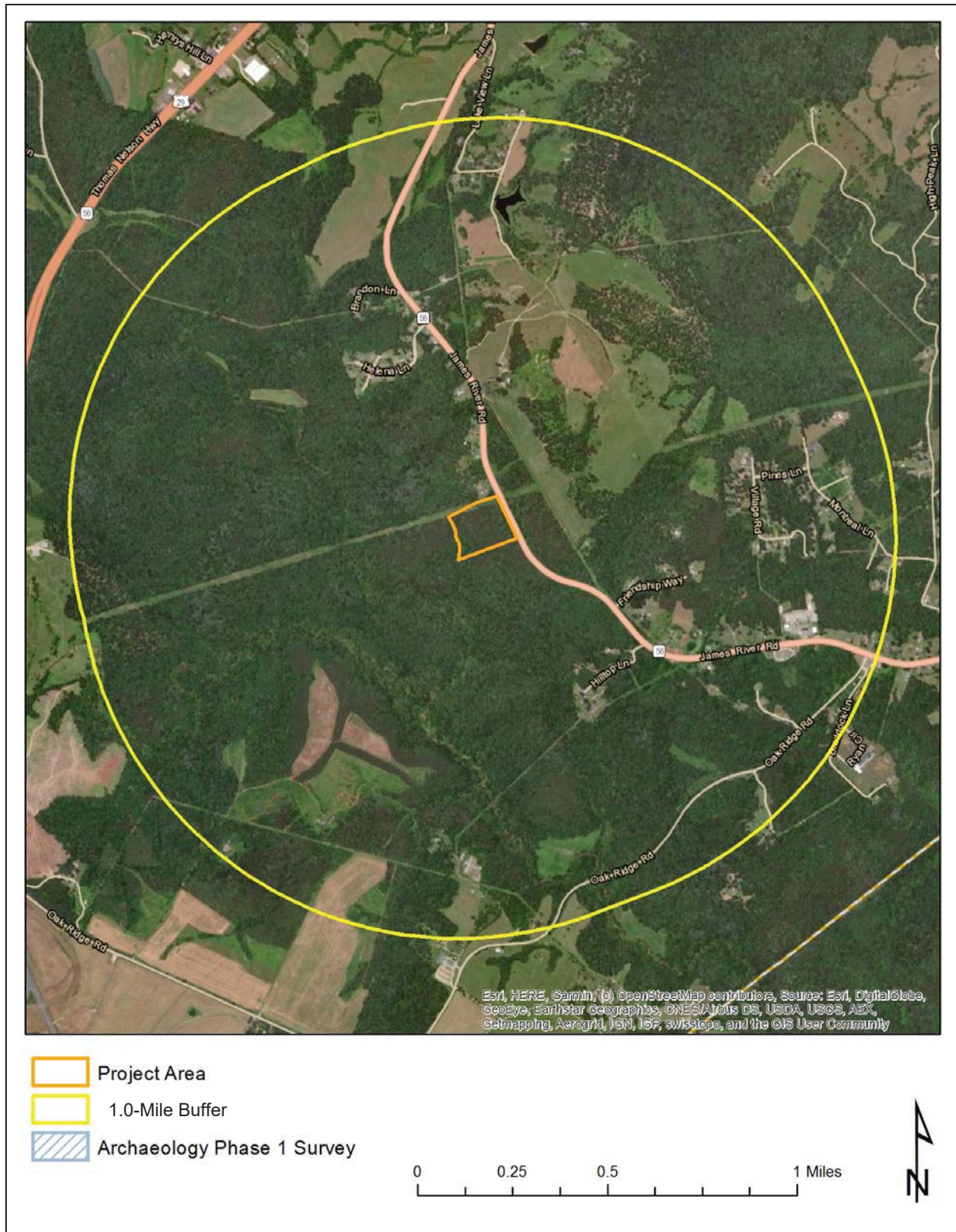


Figure 4-1: Previously conducted phase I surveys within 1.0 mile of the Project area. Source: VCRIS

## ARCHITECTURAL RESOURCES

Review of the VDHR VCRIS inventory records revealed a total of 16 previously recorded architectural resources are located 1.5 miles of the James River 138 kV Substation Component Area. Of these, there are no NHLs located within 1.5 miles of the James River 138 kV Substation Component Area, no properties listed in the NRHP or battlefields located within 1.0 mile of the James River 138 kV Substation Component Area, and no properties that have been determined eligible for listing in the NRHP within 0.5 miles of the James River 138 kV Substation Component Area.

Table 4-1 provides a list of all previously recorded architectural resources within 1.5 miles of the Project area and Table 4-2 lists NRHP-listed and eligible resources within their respective buffered tiers. A map of all previously recorded architectural resources within 1.5 miles of the project are depicted in Figure 4-2 and a map of NRHP-listed and Eligible resources is in Figure 4-3.

**Table 4-1: Previously recorded architectural resources within 1.5 miles of the Project area (bold listings denote sites determined eligible for the NRHP).**

VDHR #	Resource Name/ Address	NRHP Status	Distance Tier
062-0002	St. Mary's Catholic Church (Historic/Current)	Not Evaluated	1.5 Mile
<b>062-0011</b>	<b>Oak Ridge (Historic/Current), The Mansion Historic District (Descriptive)</b>	<b>DHR Board: Eligible</b>	<b>1.0 Mile</b>
062-0019	White Plains (Historic/Current)	Not Evaluated	0.5 Mile
062-0037	Edge Hill (Historic), Edgehill Inn (Current Name)	Not Evaluated	1.5 Mile
062-0107	Shipman Community Center (Current), Shipman High School (Historic)	DHR Board Det. Not Eligible	1.5 Mile
062-0421	House, Rtes. 56 and 639, s.e. corner (Current)	Not Evaluated	1.5 Mile
062-0422	Montreal United Methodist Church (Historic), Shipman Apostolic Chapel (Current)	Not Evaluated	1.5 Mile
062-0423	Berry House (Current), McAlexander House (Historic)	Not Evaluated	1.5 Mile
062-0424	House, Route 747 (Marietta Street), south side (Current)	Not Evaluated	1.5 Mile
062-0425	Carter (Leonard) House (Current)	Not Evaluated	1.5 Mile
062-0426	Roberts (J.S.) House (Current)	Not Evaluated	1.5 Mile
062-0427	Browning House (Current), King (Billy) House (Historic)	Not Evaluated	1.5 Mile
<b>062-0430</b>	<b>Forkland (Historic/Current)</b>	<b>DHR Staff: Eligible</b>	<b>1.5 Mile</b>
<b>062-5003</b>	<b>Lovington High School (Historic/Current)</b>	<b>NRHP Listing, VLR Listing</b>	<b>1.5 Mile</b>
<b>062-5230</b>	<b>Ryan Hall (Historic), Ryan School (Current Name), Shipman Colored School (Historic)</b>	<b>DHR Board: Eligible</b>	<b>1.0 Mile</b>

<b>VDHR #</b>	<b>Resource Name/ Address</b>	<b>NRHP Status</b>	<b>Distance Tier</b>
062-5246	Frank Hill House (Current Name), House, 56 Braddock Lane (Function/Location)	Not Evaluated	1.0 Mile



**Table 4-2: Previously recorded architectural resources within their respective tiered buffer zones for the James River 138 kV Substation Component 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**

<b>Buffer(miles)</b>	<b>Considered Resources</b>	<b>VDHR #</b>	<b>Description</b>
<b>1.5</b>	National Historic Landmarks	None	N/A
<b>1.0</b>	National Register Properties (Listed)	None	N/A
	Battlefields	None	N/A
	Historic Landscapes	None	N/A
<b>0.5</b>	National Register-Eligible	None	N/A

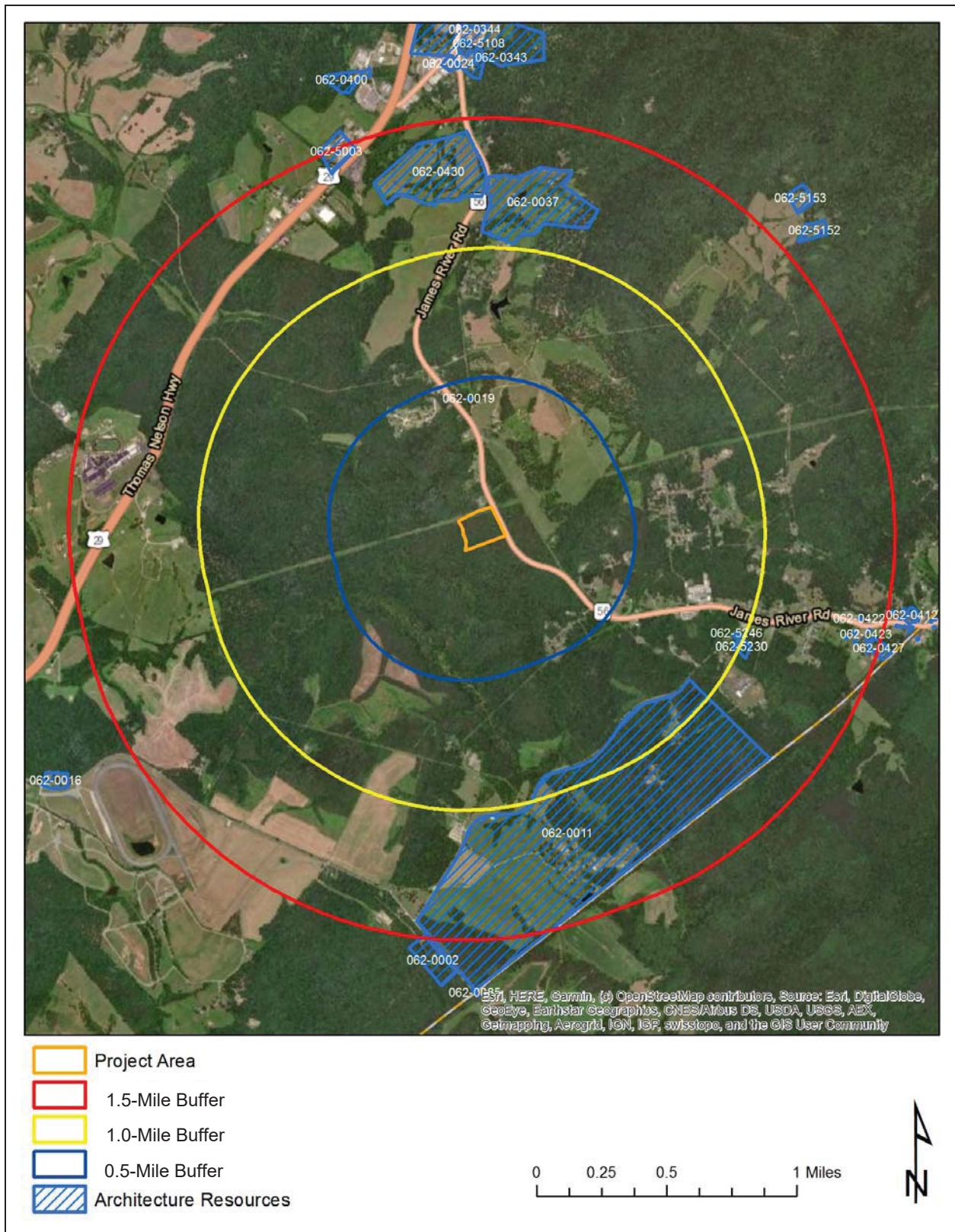


Figure 4-2: All previously identified architectural resources within 1.5 miles of the Project area. Source: VCRIS

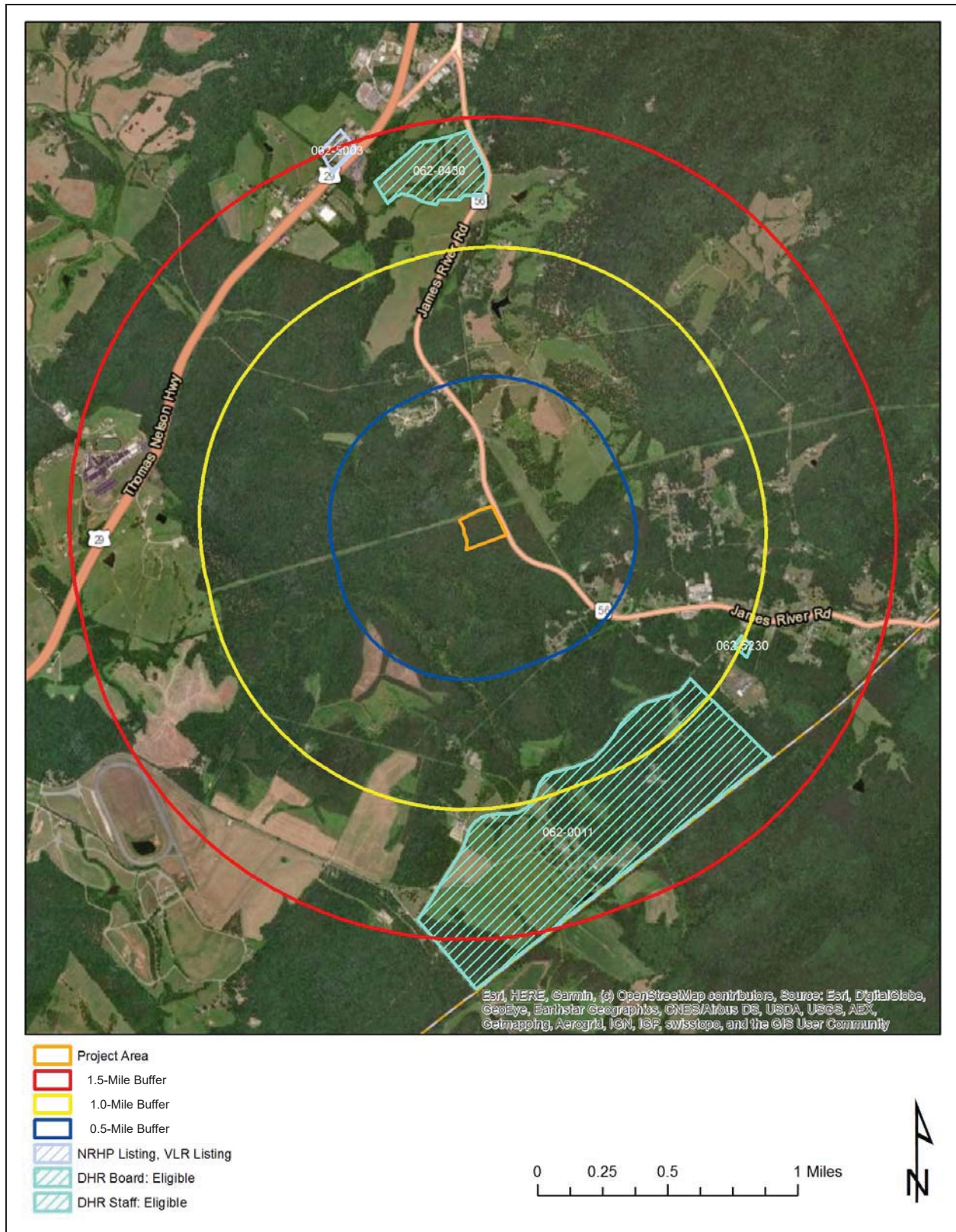


Figure 4-3: NRHP-Listed and Eligible architectural resources within 1.5 miles of the Project area. Source: VCRIS

**ARCHAEOLOGICAL SITES**

Review of the VDHR VCRIS records reveals there are no previously recorded archaeological sites are located within 1.0 mile of the Project area, as illustrated in Figure 4-4.

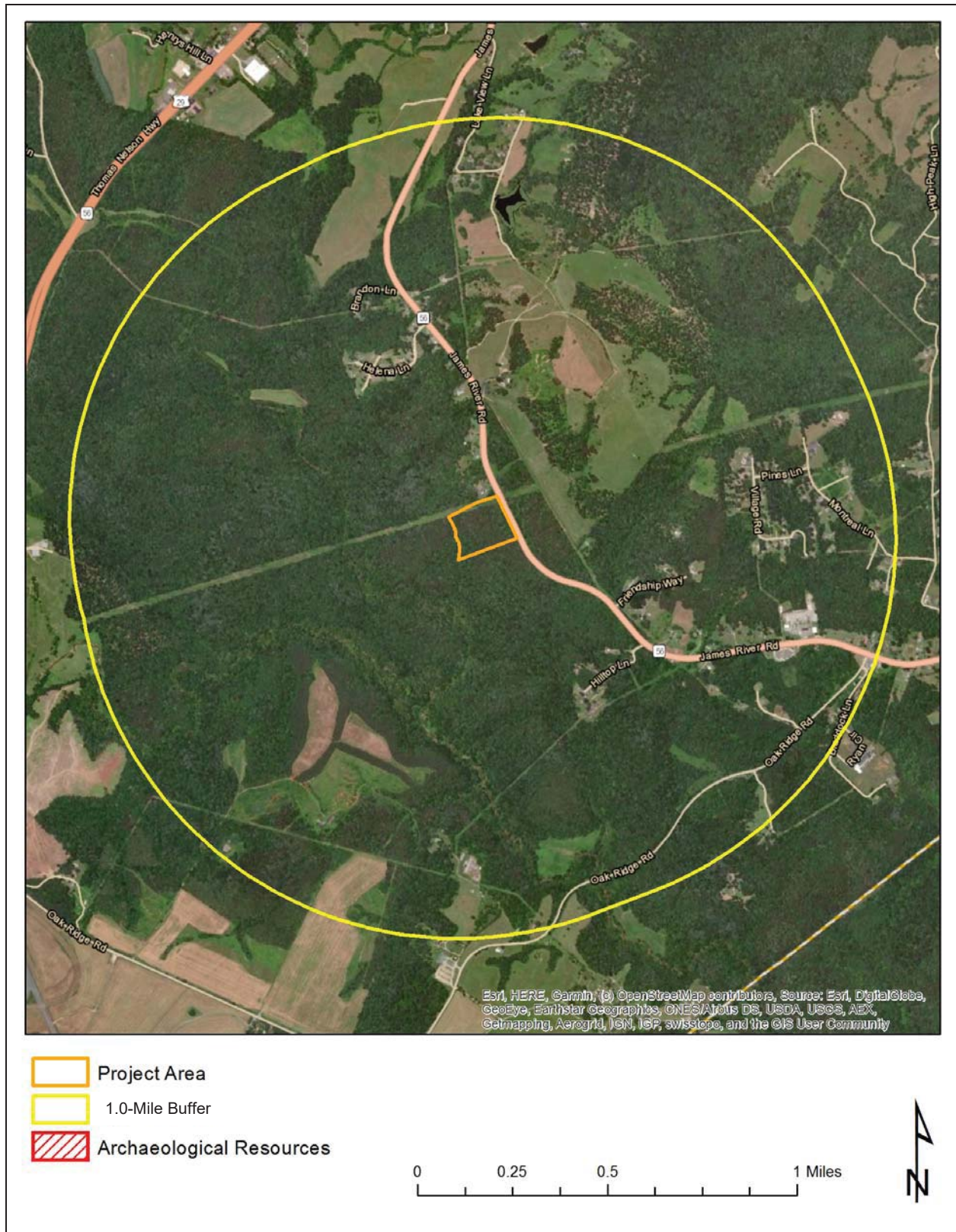


Figure 4-4: Previously recorded archaeological resources located within 1.0 mile of Project area. Source: VCRIS

**NPS AMERICAN BATTLEFIELD PROTECTION PROGRAM (ABPP)**

A review of the NPS ABPP records and maps prepared by the Civil War Sites Advisory Commission (CWSAC) revealed no portions of any noted battlefield are located within 1.0 mile of the Project area.

## **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 designated a NHL, or either listed or determined eligible for listing in the NRHP located within 1.0 mile or 0.5 miles of the project are to be field verified for existing conditions and photo documented. As there are no previously recorded NHLs within 1.5 miles, NRHP-listed resources within 1.0 mile, or NRHP-eligible properties within 0.5 miles, field reconnaissance was not necessary or performed.

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## 6. SUMMARY OF POTENTIAL IMPACTS

As part of this pre-application analysis of cultural resources for the James River 138 kV Substation and Line Connection Project, potential impacts to previously recorded historic properties listed or considered eligible for listing in the NRHP within the VDHR-defined buffered tiers were assessed in accordance with the VDHR guidelines. 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 line and substation projects, 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.

In accordance with the VDHR guidance for SCC Pre-Application Analyses of historic properties for proposed electric transmission lines or associated facilities, a review of previously recorded cultural resources was conducted. As there are no previously recorded NHLs within 1.5 miles, NRHP-listed resources within 1.0 mile, NRHP-eligible properties within 0.5 miles, or archaeological sites within the Project area, the James River 138 kV Substation and Line Connection Project will not pose impacts to previously recorded cultural resources.

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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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