EXHIBIT 9: CONSTRUCTION AND OUTAGE SEQUENCE

CONFIDENTIAL INFORMATION

SEE VOLUME 2: CONFIDENTIAL APPENDIX - EXHIBIT 9-C FOR CONSTRUCTION AND OUTAGE SEQUENCE

EXHIBIT 10: VDOT HIGHWAY MAP AND EXISTING TRANSMISSION FACILITIES

CONFIDENTIAL INFORMATION

SEE VOLUME 2: CONFIDENTIAL APPENDIX - EXHIBIT 10-C FOR VDOT HIGHWAY MAP AND EXISTING TRANSMISSION FACILITIES

EXHIBIT 11: PHOTO SIMULATION

ABINGDON
138 KV SUBSTATION TRANSMISSION PROJECT

SUBSTATION TO BE EXPANDED
EXISTING TRANSMISSION LINE
TRANSMISSION LINE TO BE RETIRED
PHOTO VIEWPOINT LOCATION
PROPOSED ROUTE

APPALACHIAN POWER
An AEP Company

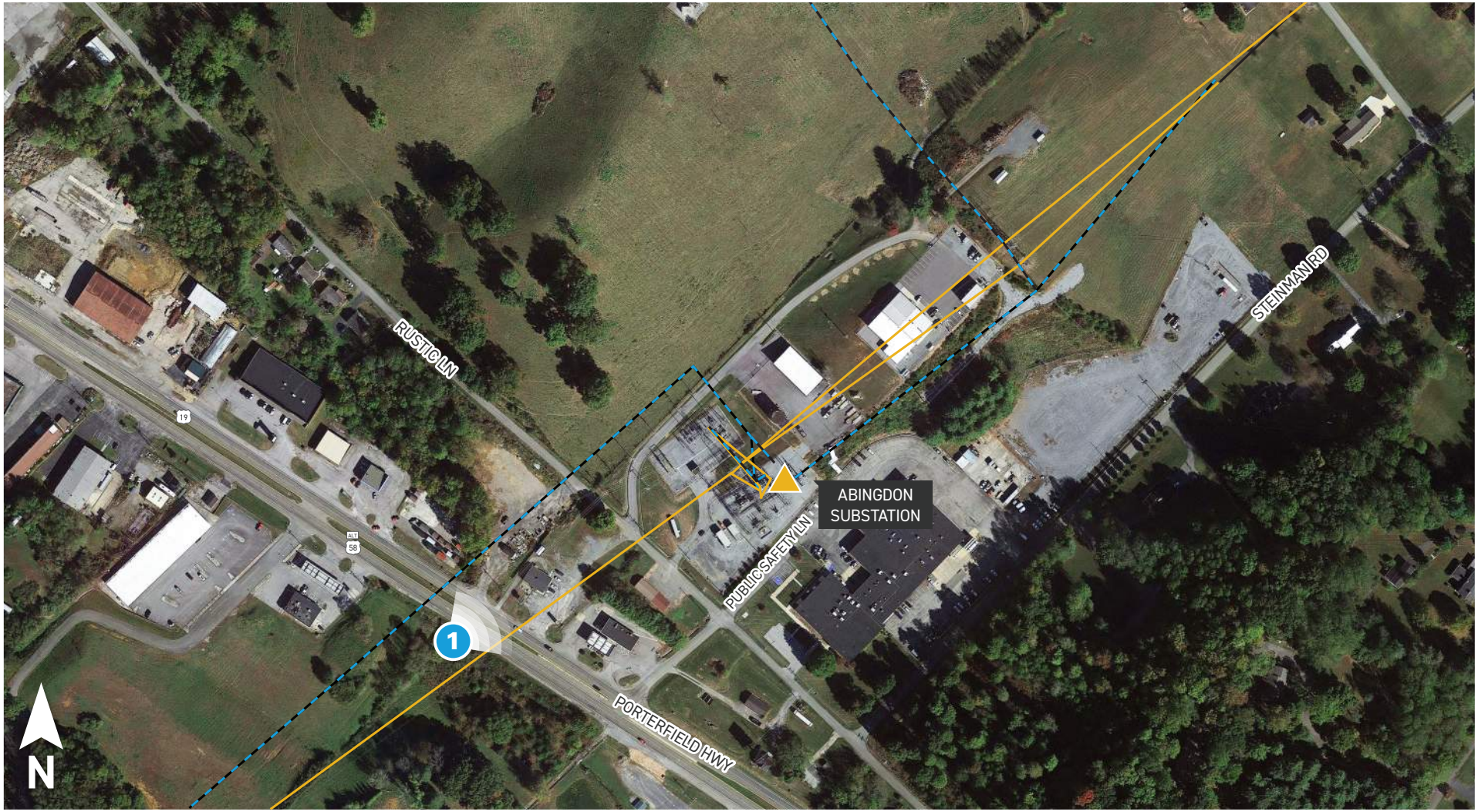


EXHIBIT 11
PHOTO SIMULATION
PAGE 1 OF 2

ABINGDON
138 KV SUBSTATION TRANSMISSION PROJECT

Viewpoint 1

DATE: 01/11/2024

TIME: 12:07 PM

VIEWING DIRECTION: NORTHEAST

- PHOTO VIEWPOINT LOCATION
- SUBSTATION TO BE EXPANDED
- EXISTING TRANSMISSION LINE
- TRANSMISSION LINE TO BE RETIRED
- PROPOSED ROUTE

APPALACHIAN POWER
An AEP Company

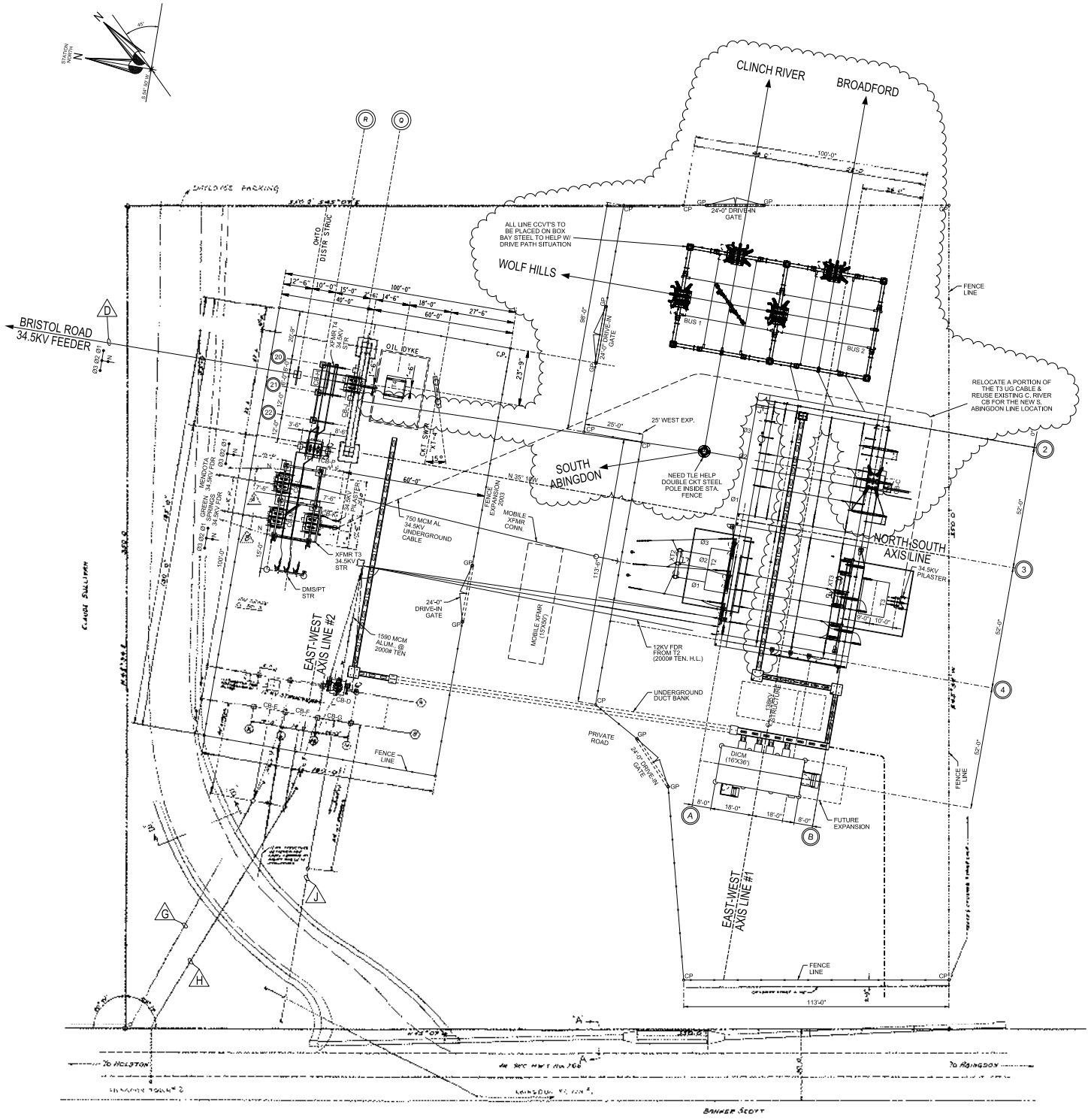
EXISTING CONDITIONS

PROPOSED CONDITIONS

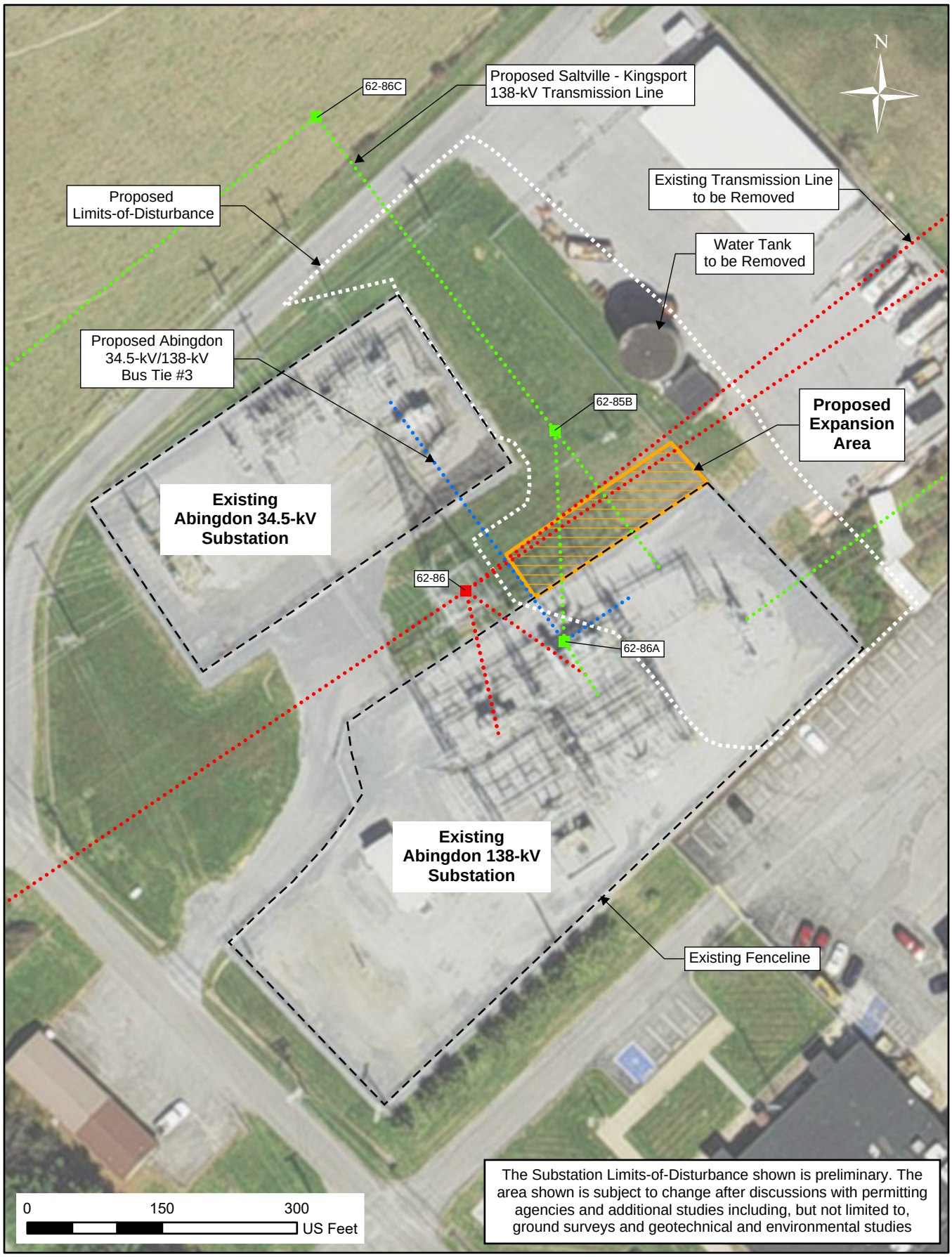
The visual simulation is an approximation using the best available data. Final engineering and construction details are not complete.

EXHIBIT 11
PHOTO SIMULATION
PAGE 2 OF 2

EXHIBIT 12: ABINGDON SUBSTATION LAYOUT, MAPS AND AERIAL VIEWS



PROPOSED ABINGDON SUBSTATION LAYOUT



SUBSTATION LOCATION MAP

EXISTING ABINGDON SUBSTATION (AERIAL VIEW, LOOKING NORTHWEST)

EXISTING ABINGDON SUBSTATION 34.5-kV YARD (LOOKING EAST)

EXISTING ABINGDON SUBSTATION 138-kV YARD (LOOKING SOUTH)

CONFIDENTIAL INFORMATION

SEE VOLUME 2: CONFIDENTIAL APPENDIX - EXHIBIT 12-C FOR ONE-LINE DIAGRAM

PROPOSED SUBSTATION ONE-LINE

EXHIBIT 13: PUBLIC NOTICE MAP

ABINGDON
138-KV SUBSTATION TRANSMISSION PROJECT

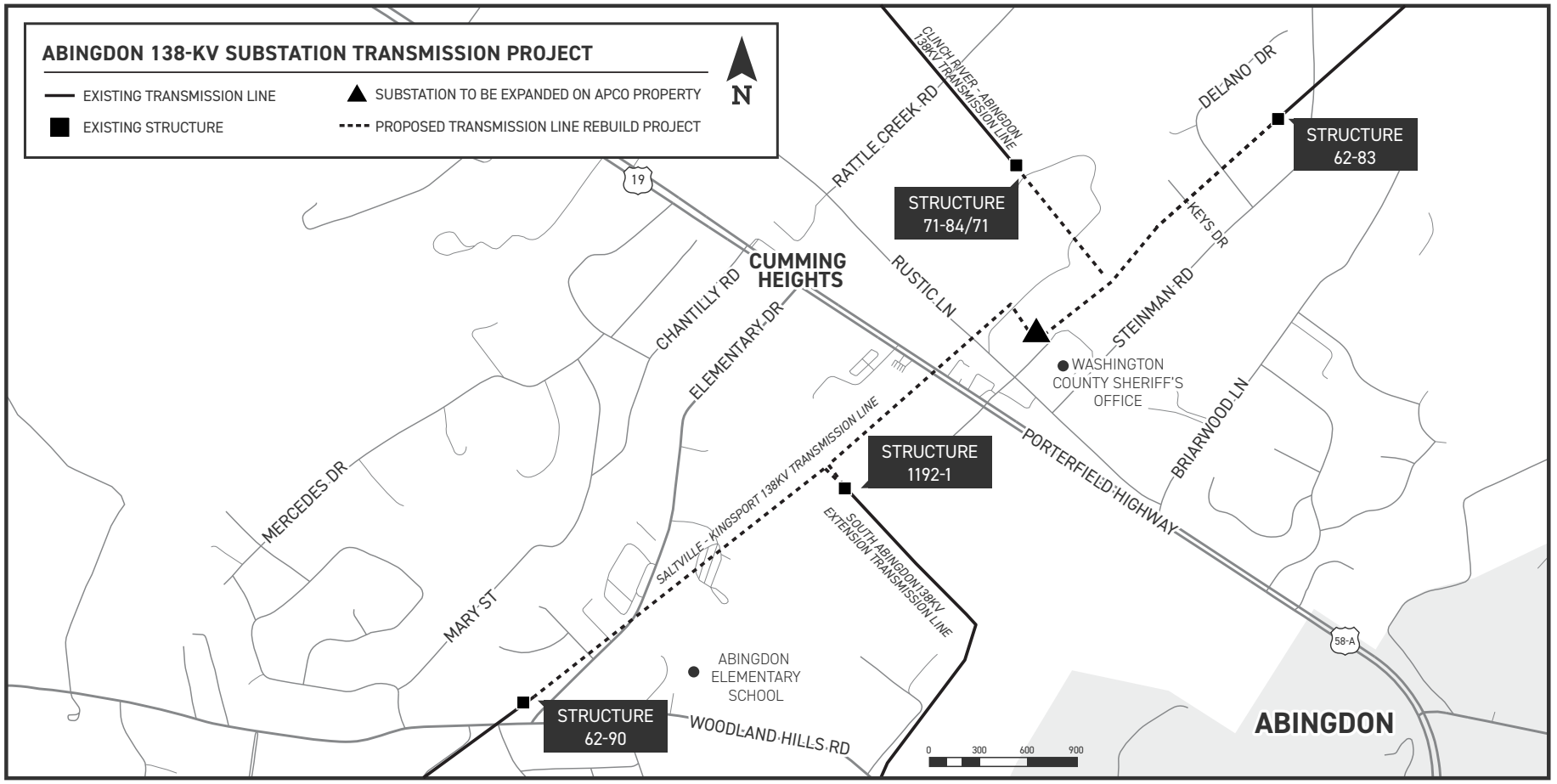


EXHIBIT 13
PUBLIC NOTICE MAP
PAGE 1 OF 1

September 2024

APPALACHIAN POWER COMPANY

Abingdon 138-kV Substation Transmission Project

SCC Case No. PUR-2024-00169
Washington County, Virginia

Virginia Department of Environmental Quality Supplement

PROJECT NUMBER:
0252635
PROJECT CONTACT:
Daniel Fraser, P.E.
EMAIL:
daniel.fraser@powereng.com
PHONE:
803-835-5954

POWER ENGINEERS

TABLE OF CONTENTS

TABLES

ATTACHMENTS

Based on coordination with the Virginia Department of Environmental Quality (“VDEQ”), POWER Engineers, Inc. on behalf of Appalachian Power Company has developed this VDEQ Supplement to facilitate review and analysis of the Abingdon 138-kV Substation Transmission Project by the VDEQ and other relevant agencies.

1.0 PROJECT DESCRIPTION

With the Abingdon 138-kV Substation Transmission Project (the "Project"), Appalachian Power Company ("Appalachian" or "Company") proposes to upgrade the existing Abingdon Substation and terminate the existing Broadford – Wolf Hills 138-kilovolt ("kV") Circuit into the substation in Washington County, Virginia. The Project will expand the existing Abingdon Substation on Company-owned property and rebuild approximately 1.0 mile of the Company's Saltville – Kingsport 138-kV Transmission Line. The purpose of the Project is to address reliability criteria violations identified through the PJM Interconnection, L.L.C. ("PJM") Regional Transmission Expansion Plan process.

Four new 138-kV circuit breakers, two new box bays, associated disconnect switches, and new bus work will be installed at the existing Abingdon Substation to bifurcate an existing circuit and provide additional protection and controls. These improvements require expanding the existing substation by approximately 2,450 square feet on Appalachian property. The proposed substation expansion area is approximately 25 by 98 feet to accommodate the new equipment. A short portion of the existing Saltville – Kingsport 138-kV Transmission Line, which was originally constructed in the 1920s as a double-circuit transmission line primarily using steel lattice steel structures, will be rebuilt to connect the existing line into the expanded Abingdon Substation. The transmission line is expected to be rebuilt primarily using modern steel lattice towers and monopoles; however, final structure types will be determined following additional studies and final engineering. The proposed structure heights are anticipated to range from 86 to 145 feet tall. The average height of the proposed structures is 110 feet, which is 5 feet taller than the average height of the existing structures to meet current design standards. The typical right-of-way ("ROW") width is 100 feet; however, the width of the ROW may be increased depending on safety, engineering, or operational requirements.

The Project, including the substation improvements and transmission line work, will be constructed on Company property or near the existing Saltville – Kingsport 138-kV Transmission Line ROW.

The Company's application to the Virginia State Corporation Commission ("SCC"), describes the overall need and necessity for the Project (SCC Case No. PUR-2024-00169).

2.0 ENVIRONMENTAL ANALYSIS

In a letter dated July 26, 2024, the Company and POWER Engineers, Inc. ("POWER") requested input from 32 local, state, and federal agencies and/or officials regarding the Project. Responses to the request for input were received from 22 representatives of various agencies and are included in Attachment 2.0.1. POWER also obtained relevant environmental data from field reconnaissance, online databases, and other publicly available sources.

A. Air Quality

The Project 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 could occur but would be kept to a minimum. No permanent impacts on air quality are anticipated, and temporary impacts will only last for 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 appropriate 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 Response to Guidelines.

B. Water Source

No permanent water source is required for the operation of the Project. The Project is located in the South Fork Holston sub-basin (Hydrologic Unity Code ["HUC"] 8 06010102) and the Spoon Gap Creek – Wolf Creek sub-watershed (HUC12 060101020402). According to a response from the United States Army Corps of Engineers ("USACE") on August 7, 2024, any work in regulated waters and/or wetlands may require a permit from the USACE, VDEQ, and/or local authorities.

The Virginia Department of Health Office of Drinking Water and Virginia Marine Resources Commission did not provide comments regarding the Project.

C. Discharge of Cooling Waters

No discharge of cooling waters is associated with the Project.

D. Tidal and Non-tidal Wetlands

No tidal wetlands are associated with the Project.

A desktop wetland and stream delineation report was prepared in September 2024 to identify potential wetlands and streams crossed by the Project (see **Attachment 2.D.1**). The desktop features were identified within the proposed limits of disturbance for the substation expansion and the typical 100-foot-wide ROW centered on the proposed route of the Saltville – Kingsport 138-kV Transmission Line. No viable alternative routes were identified for the transmission line work. The results of the desktop review are briefly summarized below.

Table 1 below shows the criteria used to determine the wetland and stream probability for the Project. The current potential streams and wetlands were assigned a probability of low potential, moderate potential, or high potential of being a regulated resource.

TABLE 1 WETLAND AND STREAM EVALUATION CRITERIA

PROBABILITY	WETLAND ASSESSMENT CRITERIA	STREAM ASSESSMENT CRITERIA
High	Aerial imagery (color and CIR) and/or topography combined with **two** other indicators such as NWI wetlands, NHD streams, hydric soils, or a regulated floodplain.	Streams identified with NHD and aerial imagery (color and CIR) or topography.
Moderate	Aerial imagery (color and CIR) and/or topography combined with **one** other indicator such as NWI wetlands, NHD streams, hydric soils, or a regulated floodplain.	Either (1) streams identified with aerial imagery (color and CIR) and topography; or (2) aerial imagery or topography combined with one other indicator, such as NWI riverine features or county or city stream data.
Low	Areas identified as wetland with topography and aerial photography only.	Areas identified as streams with topography or aerial photography only.

Notes: NWI = National Wetland Inventory; NHD = National Hydrography Dataset.

No stream or wetlands were identified within the Abingdon Substation preliminary limits of disturbance.

The proposed route for the 138-kV transmission line is approximately 1.0 mile long and crosses multiple tributaries of Wolf Creek parallel to or near the existing ROW. The results of the desktop wetland and stream delineations for the Project are summarized in **Table 2** below.

TABLE 2 DESKTOP WETLAND AND STREAM DELINEATION RESULTS

PROBABILITY LEVEL	WATER OF THE UNITED STATES TYPE*	NUMBER OF OCCURRENCES	ACREAGE OR FEET IN RIGHT-OF-WAY
High			
	PEM	1	0.07 acres
	PSS	1	0.08 acres
	PFO	0	0.00 acres
	PUB	0	0.00 acres
	Streams	2	695 feet
Moderate			
	PEM	2	0.45 acres
	PSS	0	0.00 acres
	PFO	0	0.00 acres
	PUB	0	0.00 acres
	Streams	2	164 feet
Low			
	PEM	3	0.31 acres
	PSS	0	0.00 acres
	PFO	0	0.00 acres
	PUB	0	0.00 acres
	Streams	4	292 feet
Wetland Total		7	0.91 acres
Stream Total		8	1,151 feet

*Note: PEM = Palustrine Emergent; PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested; PUB = Palustrine Unconsolidated Bottom.

Within the typical 100-foot-wide ROW of the proposed route, the desktop wetland and stream delineation identified an estimated seven wetlands with a total combined area of 0.91 acres and eight streams with a total combined linear footage of 1,151 feet. High probability streams, which include unnamed tributaries of Wolf Creek, are crossed at or adjacent to the existing crossing locations. Overall, impacts to stream and wetland features should result in minimal impacts given the proposed route will largely be rebuilt within or near to the existing 100-foot-wide ROW.

Strategic siting of transmission structures/foundations and construction access roads should minimize impacts to regulated resources. In most cases, wetlands and streams can be spanned entirely by a transmission line; however, ROW clearing may still result in permanent conversion of forested wetlands. Impacts to wetlands from access roads and clearing equipment can be minimized through the use of temporary timber matting. In some cases, timber mat bridges can also be used to span stream channels.

E. Solid and Hazardous Waste

A Geographic Information System database search was conducted to identify solid and hazardous waste sites near the Project. The following databases were searched:

- United States Environmental Protection Agency ("USEPA") National Priority List ("NPL"): database last updated July 2024
- USEPA Superfund Enterprise Management System: database last updated July 2024
- USEPA Resource Conservation and Recovery Act Information System ("RCRA"): database last updated in July 2024 for Washington County
- USEPA Toxics Release Inventory ("TRI"): database last updated in 2024
- VDEQ's Voluntary Remediation Program: last updated in August 2023
- VDEQ's Solid Waste Management Facilities

The USEPA's Superfund NPL online mapper and Superfund Enterprise Management System database identified no NPL sites within 1.0 mile of the Project. 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 identified 165 active RCRA sites within Washington County. The closest active RCRA facility to the Project is located approximately 1.0 mile from the proposed route and will not be crossed by the Project. The TRI database includes information about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. The TRI database identified 25 TRI facilities in Washington County. The closest TRI site to the Project is located approximately 3.0 miles away and will not be crossed by the Project. There are no facilities registered in the Voluntary Remediation Program database within 1.0 mile of the Project. There are 14 refuse collection sites that are operating and located in Washington County. The Green Spring Community Manned Solid Waste Convenience Station is approximately 5.0 miles northwest of the Project.

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.

F. Natural Heritage, Threatened and Endangered Species

A United States Fish and Wildlife Service ("USFWS") Information for Planning and Consultation ("IPaC") resource list was generated to verify potential occurrences of threatened and endangered species in September 2024. Three USFWS-listed species, one proposed endangered species, and one candidate species were identified to potentially occur within the filing corridor for the Project and are listed in Table 3. The USFWS IPaC report is included as Attachment 2.F.1.

TABLE 3 USFWS IPaC IDENTIFIED SPECIES

SPECIES NAME	STATUS
Gray bat (*Myotis grisescens*)	Endangered
Indiana bat (*Myotis sodalis*)	Endangered
Virginia big-eared bat (*Corynorhinus townsendii virginianus*)	Endangered
Tennessee pigtoe (*Pleuronaia barnesiana*)	Proposed Endangered
Monarch butterfly (*Danaus plexippus*)	Candidate

In a letter received from the Virginia Department of Conservation and Recreation's ("VDCR") Division of Natural Heritage on August 21, 2024, the VDCR stated that the Project will not affect any documented state-listed plant or insect species and that there are no State Natural Area Preserves under VDCR's jurisdiction in the Project area. Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services ("VDACS") and the VDCR, the VDCR represents the VDACS in comments regarding potential impacts on state-listed, threatened, and endangered plant and insect species. VDCR recommended implementing two ROW maintenance practices:

- Develop and implement an invasive species plan to inventory invasive species based on VDCR's current list and document methods for treating the invasive species.
- Restore and revegetate the ROW using native species in a mix of grasses and forbs, monitor the revegetation activity, and implement an adaptive management plan for unsuccessful restoration efforts.

The Virginia Department of Wildlife Resources' ("VDWR") spatial dataset, Wildlife Environmental Review Map Service ("WERMS"), was reviewed to identify sensitive species potentially located within five miles of the Project. One federally-threatened species was identified in the VDWR WERMS dataset: eastern red bat (*Lasiurus borealis*). The Project does not intersect with any northern long-eared bat, little brown bat (*Myotis lucifugus*), or tricolored bat (*Perimyotis subflavus*) habitat or roost tree locations according to the VDWR WERMS,

however, two northern long-eared bat buffers are in proximity to the Project to the west and northeast. The closest bald eagle nest documented by the Center for Conservation Biology's Bald Eagle Nest Locator is approximately seven miles southeast of the proposed route ROW along the South Holston Lake (verified 2012). If previously unidentified bald eagle nests are observed near the Project, the USFWS eagle guidance recommends that a 660-foot buffer between project activities and eagle nests be maintained.

In response to the POWER's request for comment, VDWR identified three managed trout streams in the Project area: Beaver Creek, Glendale Creek, and Spring Creek. None of these streams are crossed by the proposed route or within the Abingdon Substation preliminary limits of disturbance and are not expected to be impacted by the Project.

The Company will coordinate with the VDWR, the USFWS, and the VDCR as appropriate to identify applicable surveys and minimize impacts on these resources during detailed engineering for the Project.

G. Erosion and Sediment Control

The Company submits their erosion and sediment control specifications for construction and maintenance of electric utility lines annually to the VDEQ for all upcoming projects. The approved erosion and sediment control specifications will be implemented for all transmission facility construction related to the Project, which includes, but is not limited to, transmission line construction, structure erection, site development, substation upgrades, construction of new or upgrade of existing access roads, when practicable. In addition, a site-specific erosion and sediment control plan will be prepared for the Project as required by the VDEQ.

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

In August 2024, POWER and Dutton + Associates, LLC conducted a Pre-Application Analysis of Cultural Resources for the Project in support of the Application. The background research conducted as part of this analysis was designed to identify all previously recorded cultural resources using the tiered study areas outlined within the Virginia Department of Historic Resources' ("VDHR") *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (2008). Archival research of previously recorded historic resources was part of the analysis and is summarized in Table 5. A full copy of the Pre-Application Analysis for Cultural Resources has been provided to the VDHR for review and is included as **Attachment 2.H.1**.

TABLE 4 PREVIOUSLY RECORDED HISTORIC RESOURCES IN PROJECT AREA

RADIAL BUFFER FROM PROJECT (MILES)	CONSIDERED RESOURCES	RESOURCE NAME (VDHR ID)
0 to 1.5	National Historic Landmarks	None
0 to 1.0	NRHP (listed) (e.g., Historic Landscapes, Battlefields, Rural Historic District)	None
0 to 0.5	NRHP-eligible (Determined by VDHR)	None
0 (within ROW)	Archaeological sites	None

No historic properties were identified in the tiered study areas; therefore, the Project is not anticipated to result in adverse impacts to archaeological, historic, scenic, cultural or architectural resources.

I. Chesapeake Bay Preservation Areas

Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the Chesapeake Bay Preservation Act as stated in the exemption for public utilities, railroads, public roads, and facilities in 9 VAC 25-830-150. The Company will meet applicable conditions.

J. Wildlife Resources

USFWS-listed and VDWR-listed species are discussed in Section 2.F.

On August 16, 2024, the VDWR offered to work with the Company to develop Project-specific mitigation measures but provided the following general recommendations to minimize adverse impacts from the Project:

- Avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable.
- Maintain naturally vegetated buffers of at least 100 feet in width around wetlands and on both sides of perennial and intermittent streams, where practicable.
- Conduct significant tree removal and ground clearing activities outside of the primary songbird nesting season of March 15 through August 15.
- Implement and maintain appropriate erosion and sediment controls throughout project construction and site restoration.
- Use matting made from natural/organic materials such as coir fiber, jute, and/or burlap.

Appalachian has and will continue to undertake efforts to minimize impacts to streams and wetlands (see Section 2.D) and to implement and maintain approved erosion and sediment control controls for the Project (see Section 2.G).

Based on past project experience, however, maintaining vegetated buffers of at least 100 feet in width around wetlands and on both sides of perennial and intermittent streams may present safety and service reliability risks to the Company due to the potential for vegetation and wire contact from tall tree growth. Additionally, maintaining a 100-foot undisturbed wooded buffer within the ROW, would require taller and heavier transmission line structures and additional line length, thereby unnecessarily increasing Project costs and visual presence. Instead, where applicable, the Company proposes to utilize selective clearing methods to retain low-growth shrubs and herbaceous vegetation within 50 feet of all year-round streams, ponds or wetlands, and road crossings, and within 25 feet of karst features and outcrops of limestone or dolomite rock.

Also, the general recommendation to conduct significant tree removal and ground clearing activities outside of the primary songbird nesting season of March 15 through August 15 would prevent clearing for almost half the year, during the months that constitute the prime time for such activities. This time of year restriction would adversely affect Appalachian's ability to complete this critical infrastructure upgrade in time to meet the Project's in-service date, which in turn would put system reliability at risk. The recommended restrictions would also increase costs and raise concerns about worker safety due to the greater likelihood in the non-summer months that clearing activities will occur under adverse weather conditions. Instead, Appalachian proposes to coordinate with the appropriate agencies to determine whether surveys are necessary and minimize impacts to wildlife resources to the extent practicable.

In some cases, the Company may be able to use matting made from natural/organic materials, as recommended by VDWR; however, the cost would increase. Additionally, on steep slopes that require greater stabilization, reinforced matting may be needed. The Company will coordinate with VDWR and other applicable agencies to determine appropriate stabilization methods, as needed.

Coordination with the appropriate agencies such as the USFWS, VDWR, and VDCR, to determine whether surveys are necessary, identify applicable Project-specific recommendations, and minimize impacts to wildlife resources to the extent practicable will be on-going as the Project progresses.

K. Recreation, Agricultural, and Forest Resources

The Project area is characterized predominantly commercially developed land uses and residential areas. The Project will be constructed on Company property or near the existing transmission line ROW. As a result, adverse impacts to recreation, agricultural, and forest resources are anticipated to be minimal.

Under the Virginia Open-Space Land Act, any public body can acquire title or rights to real property to provide means of preservation of open-space land as conservation easements. A response was received from the Virginia Outdoors Foundation ("VOF") on July 25, 2024, noting that the Project does not cross any existing or proposed VOF easements. No existing Virginia Department of Forestry ("VDOF") conservation easements are crossed by the Project, according to their publicly available database. Also, no local or state parks are crossed by the Project.

The ROW for the proposed route crosses approximately nine acres of either prime and unique farmland or farmland of statewide importance based on United States Department of Agriculture

Natural Resources Conservation Service ("NRCS") Soil Survey Geographic Database. Based on NRCS data, approximately six acres of pasture/rangeland is within the proposed route ROW. Because the Project will be constructed on Company property used for electric utilities or near the existing ROW, impacts on farmland are expected to be minimal.

Based on NRCS data, approximately three acres of forested land is within the proposed route ROW; however, the NRCS data includes the existing cleared transmission line ROW as forested land so the total amount of new tree clearing is anticipated to be minimal. Where clearing is required, the Company's tree clearing methods use the VDOF's best management practices ("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 Project. Further discussion of ROW clearing, rehabilitation and maintenance can be found in **Section II.A.7** of the Response to Guidelines.

L. 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 VDACS. All herbicides will be used in accordance with label and manufacturer directions. Regarding herbicide applications (additionally, see **Section II.A.7** of the Response to Guidelines):

- 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 will be used in accordance with label and manufacturer directions.

M. Geology and Mineral Resources

According to the Virginia Department of Energy's Division of Geology and Mineral Resources Interactive Geologic Map, the Project is in the Valley and Ridge physiographic province of Virginia. According to this mapping, no known sinkholes, active mines, or quarries are present within the proposed route ROW.

The Company and POWER submitted a project review request to the VDCR Virginia Natural Heritage Program, and a response was received on August 21, 2024. The VDCR indicated one cave, the Substation Cave, is located approximately 500 feet northeast of the Project area, and

that additional undocumented caves, sinkholes, and disappearing streams may be encountered given the carbonate rock geology of the Project area.

Appalachian will implement and adhere to erosion and sediment controls, as discussed in Section 2.G, and does not anticipate that the Project will result in adverse impacts on geology and mineral resources.

N. Transportation Infrastructure

The Project will be constructed on Company property or near the existing transmission line ROW. Accordingly, the proposed route crosses existing transportation infrastructure at or near existing locations. The Project crosses United States ("U.S.") Route 58 Alternate/U.S. Route 19 (Porterfield Highway), State Routes 1518 (Delano Drive), 1516 (Keys Drive), 766 (Rustic Lane), and 825 (Elementary Drive).

In a response on July 29, 2024, the Virginia Department of Transportation ("VDOT") recommended continued coordination with the VDOT Abingdon Residency to obtain necessary Land Use Permits for any work within VDOT ROW. The Company will coordinate with VDOT during the design and permitting phase of the Project to determine the extent of land use permits and traffic control plans, as needed for the Project.

The proposed route does not cross any railroads.

The Federal Aviation Administration's ("FAA") website was reviewed to identify airports within 10 miles of the Project. Based on this review, the Virginia Highlands Airport is approximately one mile away from the Project. In a response dated July 18, 2024, Virginia Highlands Airport requested information regarding height differences for the existing and proposed structures. Based on preliminary engineering, there is, on average, an approximate five-foot increase in height between the existing structures and the proposed structures. The Company will use the FAA's Notice Criteria Tool to review proposed structure locations and identify structures that must be filed with the FAA. The Company will coordinate with the Virginia Department of Aviation and FAA as necessary to obtain all appropriate approvals.

ATTACHMENT 2.0.1: LOCAL, STATE, AND FEDERAL AGENCY CORRESPONDENCE

ABINGDON 138-KV SUBSTATION TRANSMISSION PROJECT AGENCY CORRESPONDENCE					
JURISDICTION	FULL NAME	TITLE	ORGANIZATION	DATE NOTICE SENT	DATE RESPONSE RECEIVED
Local	Mickey Hines	Airport Manager	Virginia Highlands Airport	7/16/2024	7/18/2024
Local	Jason Berry	Administrator	Washington County, Virginia	7/16/2024	None
State	Amy Martin	Manager, Wildlife Information and Environmental Services	Virginia Department of Wildlife Resources	7/16/2024	8/16/2024
State	Wil Orndorff	Karst Protection Coordinator	Virginia Department of Conservation and Recreation – Natural Heritage Program	7/16/2024	7/16/2024
State	René Hypes	Environmental Review Coordinator	Virginia Department of Conservation and Recreation – Natural Heritage Program	7/16/2024	7/16/2024 7/25/2024 8/21/2024
State	Rob Evans	Natural Area Protection Manager	Virginia Department of Conservation and Recreation – Natural Heritage Program	7/16/2024	None
State	Michelle Henicheck	Senior Wetland Ecologist	Virginia Department of Environmental Quality – Central Office	7/16/2024	7/25/2024
State	Bettina Rayfield	Manager	Virginia Department of Environmental Quality – Office of Environmental Impact Review	7/16/2024	7/25/2024
State	Jeffrey Hurst	Regional Director	Virginia Department of Environmental Quality – Southwest Regional Office	7/16/2024	8/11/2024
State	David Nishida	VWP Permit Manager	Virginia Department of Environmental Quality – Southwest Regional Office	7/16/2024	None
State	Randy Owen	Chief of Habitat Management	Virginia Marine Resources Commission – Habitat Management	7/16/2024	None
State	Jennifer Perkins	Coordinator	Virginia Department of Agriculture and Consumer Services – Office of Farmland Preservation	7/17/2024	None
State	Roger Kirchen	Director, Review & Compliance Division	Virginia Department of Historic Resources – Division of Review and Compliance	7/16/2024	8/9/2024
State	Martha Little	Deputy Director, Conservation	Virginia Outdoors Foundation	7/16/2024	None
State	Tommy Oravetz	Conservation Specialist	Virginia Outdoors Foundation	7/16/2024	7/16/2024 7/17/2024 7/25/2024
State	Karl Didier	Manager, Forestland Conservation Program	Virginia Department of Forestry	7/16/2024	None
State	Brian Ledford	Area Forester, Washington County	Virginia Department of Forestry – Abingdon Office	7/16/2024	None
State	Rusty Harrington	Manager, Planning & Environmental Services	Virginia Department of Aviation	7/16/2024	7/16/2024 via Phone
State	Scott Denny	Senior Aviation Planner	Virginia Department of Aviation	7/16/2024	None

ABINGDON 138-KV SUBSTATION TRANSMISSION PROJECT AGENCY CORRESPONDENCE					
JURISDICTION	FULL NAME	TITLE	ORGANIZATION	DATE NOTICE SENT	DATE RESPONSE RECEIVED
State	Matt Heller	State Geologist	Virginia Department of Energy – Geology and Mineral Resources	7/16/2024	None
State	Brian Blankenship	Director, Abingdon Field Office	Virginia Department of Health – Office of Drinking Water	7/17/2024	None
State	Tabitha Crowder	District Engineer	Virginia Department of Transportation – Bristol District	7/16/2024	7/16/2024
State	Blake Ailor	District Planner	Virginia Department of Transportation – Bristol District	7/16/2024	8/9/2024
State	Pamela Heath	Assistant Residency Engineer	Virginia Department of Transportation – Abingdon Residency	7/16/2024	7/29/2024
Federal	Jennifer Serafin	Chief, Western Section	U.S. Army Corps of Engineers – Norfolk District	7/16/2024	7/18/2024 8/7/2024
Federal	Marie Kennington-Gardiner	Eastern Regional Administrator	Federal Aviation Administration	7/16/2024	None
Federal	Adam Ortiz	Regional Administrator	U.S. Environmental Protection Agency – Region 3	7/16/2024	7/18/2024
Federal	Cindy Schulz	Field Office Supervisor	U.S. Fish & Wildlife Service – Virginia Ecological Services	7/16/2024	No response received.
Federal	Troy Andersen	Supervisory Fish & Wildlife Biologist	U.S. Fish & Wildlife Service – Virginia Ecological Services	7/16/2024	7/17/2024
Federal	Edwin Martinez	State Conservationist	U.S. Department of Agriculture – Natural Resources Conservation Service	7/16/2024	No response received.
Federal	John Harper	State Soil Scientist	U.S. Department of Agriculture – Natural Resources Conservation Service	7/16/2024	7/17/2024
Federal	John Simkins	Team Lead, Planning and Environment	U.S. Department of Transportation – Federal Highway Administration, Virginia	7/16/2024	No response received.

POWER ENGINEERS, INC.
6641 W. BROAD STREET
SUITE 405
RICHMOND, VA 23230 USA

PHONE 406-698-1198

July 16, 2024

Subject: Appalachian Power Company: Abingdon 138-kilovolt Substation Transmission Project in Washington County, Virginia

Dear:

Appalachian Power Company (Appalachian Power) is proposing the Abingdon 138-kilovolt Substation Transmission Project, which will upgrade an existing substation and one-mile-portion of an existing transmission line in Washington County, Virginia (Project). Appalachian Power contracted POWER Engineers, Inc. (POWER) to prepare the Certificate of Public Convenience and Necessity application to the Virginia State Corporation Commission for the Project. On behalf of Appalachian Power, POWER is requesting your input on the information provided.

The Project will upgrade equipment at the existing Abingdon Substation on Rustic Lane in Washington County, Virginia to address thermal and voltage violations identified in PJM Interconnection's 2022 Regional Transmission Expansion Plan Window. Abingdon Substation will be expanded on Appalachian Power property to accommodate the upgrades. The Project will also rebuild an approximately one-mile-long portion of the existing Saltville – Kingsport 138-kilovolt line to terminate into the substation. Appalachian Power plans to acquire some new right-of-way for the transmission line between Abingdon Substation and Elementary Drive. The Project extents are shown in **Attachment 1**.

Appalachian Power and POWER are requesting input from you on the Project so that any specific comments can be considered. We appreciate your input, and your feedback will be incorporated into the filing to the Virginia State Corporation Commission. Appalachian Power plans to file the Project with the State Corporation Commission in the fall of 2024. Please distribute this notification to staff members who may be involved with this Project for review and comment.

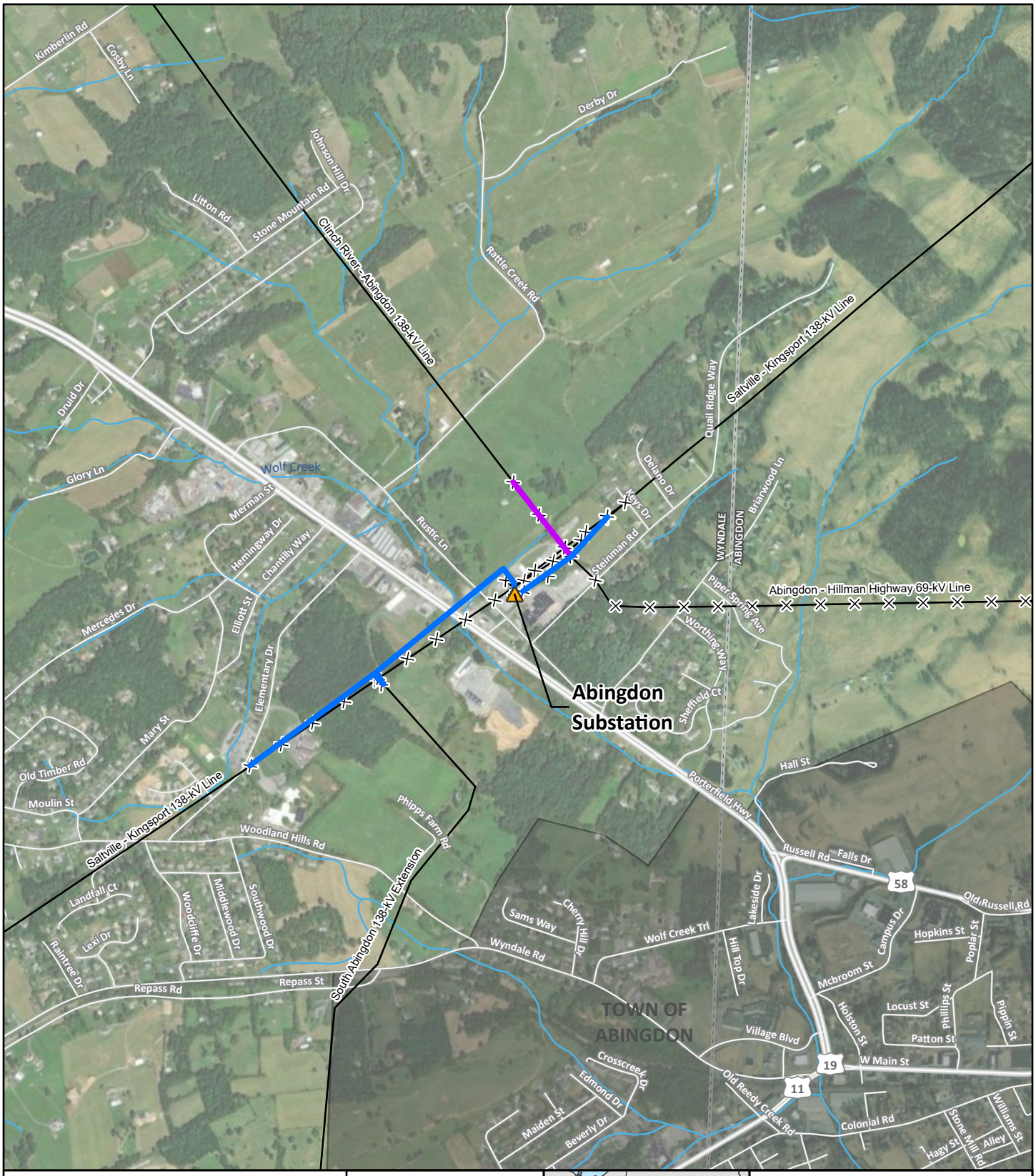
I look forward to receiving your comments and feedback regarding the Project. Please feel free to contact me via email at brendan.mcloughlin@powereng.com or by phone at 804-877-0121.

Sincerely,

Brendan McLoughlin

Brendan McLoughlin
Environmental Planner

Enclosure: Attachment 1 – Project Study Area

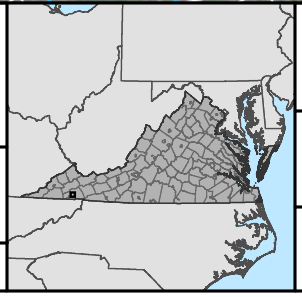


AEP Substation to be Expanded
Existing Transmission Line to be Rebuilt
Existing Transmission Line to be Reconnected
Existing Transmission Line (AEP)
Existing Transmission Line to be Removed
Stream (NHD)
City/Municipal Area
USGS Topo Quad Boundary

Washington County, Virginia

NAD 1983 State Plane
Virginia South
FIPS 4502 Feet

July 08, 2024



Project Area

Abingdon 138-kV Substation Transmission Project

APPALACHIAN POWER
An AEP Company

POWER ENGINEERS

0 1,000 2,000
Feet

From: Mickey Hines
To: McLoughlin, Brendan
Cc: mhines@vahighlandsairport.com
Subject: [EXTERNAL] Abingdon 138-kilovolt substation transmission project
Date: Thursday, July 18, 2024 11:42:51 AM

Brendan,

Will any of the towers on the line to be rebuilt be higher than the existing towers? If so, we would need that information when it becomes available.

If there is no increase in the height of the new towers then the Airport Authority would have no comments or objections to the project.

Mickey Hines
Virginia Highlands Airport (KVJI)
Manager
P.O. Box 631
Abingdon, VA 24212-0631
www.vahighlandsairport.com [vahighlandsairport.com]
Telephone (276) 628-2909
Fax (276) 628-2693
Operations Fax (276) 628-7264
Email: mhines@vahighlandsairport.com
"Build one mile of highway and you can go one mile – build one mile of runway and you can go anywhere in the world!"

From: Brann, Lee (DWR) <Lee.Brann@dwr.virginia.gov>
Sent: Friday, August 16, 2024 10:48 AM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Strawderman, Nicole (DWR) <Nicole.Strawderman@dwr.virginia.gov>
Subject: [EXTERNAL] ESSLog# 45416_Abingdon 138-kV Substation Transmission Project_DWR_HLB20240816

Mr. McLoughlin,

We have reviewed the subject project that proposes to upgrade equipment at the existing Abingdon Substation and rebuild transmission line in Washington County. Beaver Creek, Glendale Creek, and Spring Creek in the project area are all Managed Trout Streams for stockable trout. However, given the scope and location of the proposed work, we do not anticipate it to result in significant adverse impacts upon stockable trout or other resources under our jurisdiction.

To minimize the adverse impacts of linear utility development on wildlife resources, we offer the following general recommendations: avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable; maintain naturally vegetated buffers of at least 100 feet in width around wetlands and on both sides of perennial and intermittent streams, where practicable; conduct significant tree removal and ground clearing activities outside of the primary songbird nesting season of March 15 through August 15; and, implement and maintain appropriate erosion and sediment controls throughout project construction and site restoration. To minimize potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, we recommend use of matting made from natural/organic materials such as coir fiber, jute, and/or burlap. We understand that adherence to these general recommendations may be infeasible in some situations. We are happy to work with the applicant to develop project-specific measures as necessary to minimize project impacts upon the Commonwealth's wildlife resources.

The U.S. Fish and Wildlife Service (in Virginia) utilizes an online project review process (https://www.fws.gov/office/virginia-ecological-services/virginia-field-office-online-review-process [fws.gov]) to facilitate compliance with the Endangered Species Act (16 U.S.C. 1531-1544, 87 Stat. 884) (ESA), as amended. The process enables users to 1) follow step-by-step guidance; 2) access information that will allow them to identify threatened and endangered species, designated critical habitat, and other Federal trust resources that may be affected by their project; and 3) accurately reach determinations regarding the potential effects of their project on these resources as required under the ESA. If you have questions regarding the online review process, please contact Rachel Case at rachel_case@fws.gov.

Thank you,

From: Malabad, Tom (DCR) <Tom.Malabad@dcr.virginia.gov>
Sent: Tuesday, July 16, 2024 6:53 PM
To: Orndorff, Wil (DCR); McLoughlin, Brendan; Hypes, Rene (DCR); Meader, Tyler (DCR)
Cc: Fraser, Daniel; bmburns@aep.com; Tim Ward; Kristen M Mahoney
Subject: [EXTERNAL] Re: Abingdon 138-kV Substation Transmission Project
Attachments: Wil Orndorff.pdf

Dear Mr. McLoughlin and POWER Engineers, Inc.:

I would highly encourage you to submit projects of this nature using the Virginia Department of Conservation and Recreation's Virginia Natural Heritage Data Explorer (NHDE) in the future. I would still recommend that you submit this project using NHDE for a more comprehensive environmental review for Natural Heritage Resources that may be present within the project area that are not cave and karst specific if you have not already done so. My comments only relate to cave and karst concerns.

A link to the information page for NHDE follows.

https://www.dcr.virginia.gov/natural-heritage/nhdeinfo [dcr.virginia.gov]

I have copied both Rene' Hypes our Project Review Coordinator and Tyler Meader our Locality Liaison on this email. If you have questions about NHDE I'm sure one of them would be happy to assist you with that.

KARST RECOMMENDATIONS-This project has intersected the karst bedrock and VDE sinkhole screening layers. Sinkholes mapped by the Virginia Department of Energy are within the project site (see Sinkhole layer on the Natural Heritage Data Explorer at vanhde.org). The portion of the map provided that shows the existing transmission line to be removed that is labeled "Abingdon-Hillman Highway 69-KV Line" intersects sinkholes mapped in the sinkhole layer. Typically, additional, smaller unmapped sinkholes can also be present in the vicinity. Sinkholes are areas where surface material has collapsed into the subsurface and into underground watercourses. Sinkhole areas are places where surface water directly affects groundwater quality and flow. What goes into sinkholes comes out in wells and springs, and can degrade drinking water, springs and spring-fed surface waters, and the habitat of subterranean creatures. Discharge of untreated stormwater runoff to sinkholes is discouraged, and sinkholes to which stormwater is diverted or which have been modified to accept stormwater are required by law to be registered as Class 5 Injection Wells with the US Environmental Protection Agency. Filling or alteration of natural (pre-existing) sinkholes is discouraged, and designation of natural buffers around sinkholes is desirable. If the project involves filling or "improvement" of sinkholes or cave openings, DCR would like detailed location information and copies of the design specifications. In cases where sinkhole improvement is for storm water discharge, copies of VDOT Form EQ-120 will suffice.

During every phase of the project, DCR recommends the stabilization of the soil around the site. Minimizing surface disturbance, strict use of E&S control measures appropriate for the location and adherence to best management practices appropriate for karst will help to reduce any potential impact to the karst, groundwater and surface water resources as well as any associated fauna and flora.

The footprint of the project provided by POWER Engineers, Inc. labeled as "Attachment 1 - Project Study Area Abingdon 138-kV Substation Transmission Project dated July 08, 2024" was used for review. This project footprint contains no caves that are documented in the Virginia Speleological Survey database. Undocumented caves could exist and be encountered in this area. One reported cave is very close to the project footprint. It is located approximately 500 feet to the northeast of the "existing transmission line to be removed" shown on the map that ends at Keys Dr. This cave, Substation Cave, is located to just northeast of Delano Drive. If work only occurs within the project footprint Substation Cave should not be impacted.

If karst features such as additional undocumented sinkholes, caves, disappearing streams, and large springs are encountered during the project, please coordinate with Wil Orndorff (540-230-5960, Wil.Orndorff@dcr.virginia.gov) the Virginia DCR, Division of Natural Heritage Karst Protection Coordinator, to document and minimize adverse impacts. Activities such as discharge of runoff to sinkholes or sinking streams, filling of sinkholes, and alteration of cave entrances can lead to environmental impacts including surface collapse, flooding, erosion and sedimentation, contamination of groundwater and springs, and degradation of subterranean habitat for natural heritage resources (e.g. cave adapted invertebrates, bats). These potential impacts are not necessarily limited to the immediate project area, as karst systems can transport water and associated contaminants rapidly over relatively long distances, depending on the nature of the local karst system.

Sincerely,

Tom Malabad
Lead Cave and Karst Scientist
Natural Heritage Program
Virginia Department of Conservation and Recreation
600 E. Main Street, 24th Floor
Richmond, VA 23219
Office Cell: 804-229-6691 | Cell 540-250-3234 | tom.malabad@dcr.virginia.gov

From: Hypes, Rene (DCR) <rene.hypes@dcr.virginia.gov>
Sent: Tuesday, July 16, 2024 6:01 PM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Fraser, Daniel <daniel.fraser@powereng.com>; 'Blair M Burns' <bmburns@aep.com>; Tim Ward <trward@aep.com>; Kristen M Mahoney <kmahoney@aep.com>
Subject: [EXTERNAL] RE: Abingdon 138-kV Substation Transmission Project

Thank you, Mr. Mcloughlin, for sending the project to us for review. For Natural Heritage to initiate the review process, we need a completed information services order form [dcr.virginia.gov] submitted with the project information.

Please let me know if you have any questions.

Thank you.

Rene'

Rene' Hypes
Project Review Coordinator
Department of Conservation and Recreation
Division of Natural Heritage
600 East Main Street, 24th Floor
Richmond, Virginia 23219
804-371-2708 I rene.hypes@dcr.virginia.gov

From: nhreview@dcr.virginia.gov
To: McLoughlin, Brendan
Subject: [EXTERNAL] Abingdon 138-kV Substation Transmission Project
Date: Thursday, July 25, 2024 10:35:44 AM

Thank you for submitting your request. Upon review of this project, DCR-Natural Heritage will provide comments via email within 30 calendar days. Project reference ID is **24072510353791**.

Application: www.dcr.virginia.gov/natural-heritage/nhserviceform/?id=2024-07-25-10-35-37-913224-lxq [dcr.virginia.gov]

From: nhreview (DCR) <nhreview@dcr.virginia.gov>
Sent: Wednesday, August 21, 2024 5:05 PM
To: McLoughlin, Brendan
Cc: Orndorff, Wil (DCR)
Subject: [EXTERNAL] Abingdon 138KV Substation Transmission Project
Attachments: 32500088, 90907, PEI, Abingdon 138KV Substation Transmission Project Invoice.pdf; 90907, PEI, Abingdon 138KV Substation Transmission Project.pdf

Mr. McLoughlin:

Please find attached the DCR-DNH comments and invoice for the above referenced project. The comments are in pdf format and can be printed for your records. Also species rank information is available at http://www.dcr.virginia.gov/natural-heritage/help [dcr.virginia.gov] for your reference.

Along with our comments there is an invoice for our services. Please submit a copy of the invoice with payment to the Treasurer of Virginia, Department of Conservation and Recreation, Finance, 600 East Main Street [maps.google.com], 24th Floor Richmond, VA 23219. Payment is due within 30 days of the invoice date. Late payment may result in the suspension of project review service for future projects. **To pay the invoice by credit card, please click here [dcr.virginia.gov] for the DCR credit card payment portal weblink or copy http://www.dcr.virginia.gov/payment-verification [dcr.virginia.gov] into your browser. It will take approximately 24 hours for the invoice to be available for payment in the online system.**

Please send a confirmation e-mail upon receipt of our comments. Thank you for the opportunity to provide this information.

Nicki Gustafson (*she/her*)
Project Review Assistant
Division of Natural Heritage
Virginia Department of Conservation and Recreation
600 E. Main Street, 24th Floor
Richmond, VA 23219
804-625-3979 | nicki.gustafson@dcr.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

Matthew S. Wells
Director

Andrew W. Smith
Chief Deputy Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Frank N. Stovall
Deputy Director for Operations

Darryl Glover
Deputy Director for Dam Safety, Floodplain Management and Soil and Water Conservation

Laura Ellis
Deputy Director for Administration and Finance

August 21, 2024

Brendan McLoughlin
POWER Engineers, Inc.
6641 West Broad Street, Suite 405
Richmond VA, 23230

Re: Abingdon 138KV Substation Transmission Project

Dear Mr. McLoughlin:

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.

This project is situated on karst-forming carbonate rock and can be characterized by sinkholes, caves, disappearing streams, and large springs. The Virginia DCR, Division of Natural Heritage karst staff screened this project against the Virginia Speleological Survey (VSS) database, the Virginia Department of Energy (VDE) sinkhole coverage, and other karst layers for documented sensitive karst features. There is a documented cave, Substation Cave, approximately 500 feet to the northeast of the project area and Delano Drive. Additional undocumented caves may be encountered.

This project has also intersected the karst bedrock and VDE sinkhole screening layers. Sinkholes mapped by the Virginia Department Energy are within the project site (see Sinkhole layer on the Natural Heritage Data Explorer at vanhde.org). Typically, additional, smaller unmapped sinkholes can also be present in the vicinity. Sinkholes are areas where surface material has collapsed into the subsurface and into underground watercourses. Sinkhole areas are places where surface water directly affects groundwater quality and flow. What goes into sinkholes comes out in wells and springs, and can degrade drinking water, springs and spring-fed surface waters, and the habitat of subterranean creatures. Discharge of untreated stormwater runoff to sinkholes is discouraged, and sinkholes to which stormwater is diverted or which have been modified to accept stormwater are required by law to be registered as Class 5 Injection Wells with the US Environmental Protection Agency. Filling or alteration of natural (pre-existing) sinkholes is discouraged, and designation of natural buffers around sinkholes is desirable. If the project involves filling or "improvement" of sinkholes or cave openings, DCR would like detailed location information and copies of the design specifications. In cases where sinkhole improvement is for storm water discharge, copies of VDOT Form EQ-120 will suffice.

During every phase of the project, DCR recommends the stabilization of the soil around the site. Minimizing surface disturbance, strict use of E&S control measures appropriate for the location and adherence to best management practices appropriate for karst will help to reduce any potential impact to the karst, groundwater and surface water resources as well as any associated fauna and flora.

If karst features such as additional undocumented sinkholes, caves, disappearing streams, and large springs are encountered during the project, please coordinate with Wil Orndorff (540-230-5960, Wil.Orndorff@dcr.virginia.gov) the Virginia DCR, Division of Natural Heritage Karst Protection Coordinator, to document and minimize adverse impacts. Activities such as discharge of runoff to sinkholes or sinking streams, filling of sinkholes, and alteration of cave entrances can lead to environmental impacts including surface collapse, flooding, erosion and sedimentation, contamination of groundwater and springs, and degradation of subterranean habitat for natural heritage resources (e.g. cave adapted invertebrates, bats). These potential impacts are not necessarily limited to the immediate project area, as karst systems can transport water and associated contaminants rapidly over relatively long distances, depending on the nature of the local karst system.

Additionally, 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 (https://www.dcr.virginia.gov/natural-heritage/document/nh-invasive-plant-list-2023.pdf) and methods for treating the invasives. DCR also recommends the ROW restoration and maintenance practices planned include appropriate revegetation using native species in a mix of grasses and forbs, robust monitoring and an adaptive management plan to provide guidance if initial revegetation efforts are unsuccessful or if invasive species outbreaks occur.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

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

A fee of $125.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 24th Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed https://services.dwr.virginia.gov/fwis/ or contact Hannah Schul at Hannah.Schul@dwr.virginia.gov.

Should you have any questions or concerns, feel free to contact me at 804-625-3979. Thank you for the opportunity to comment on this project.

Sincerely,

Nicki Gustafson
Natural Heritage Project Review Assistant

Cc: Wil Orndorff, DCR-Karst

From: Henicheck, Michelle (DEQ) <michelle.henicheck@deq.virginia.gov>
Sent: Thursday, July 25, 2024 9:11 AM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Fraser, Daniel <daniel.fraser@powereng.com>; 'Blair M Burns' <bmburns@aep.com>; Tim Ward <trward@aep.com>; Kristen M Mahoney <kmahoney@aep.com>; Rayfield, Bettina (DEQ) <Bettina.Rayfield@deq.virginia.gov>
Subject: [EXTERNAL] RE: Abingdon 138-kV Substation Transmission Project

Hello Brendan,

Thank you for your request to preliminarily review your project. However, I will need additional information to conduct the review per the DEQ/SCC MOA requirements. Please submit a wetland desktop analysis report with any potential surface waters, including wetlands on an aerial with the proposed project overlain on top.

Thank you,

Michelle

Michelle Henicheck, PWS
Sr. Wetland Ecologist
VA Dept of Environmental Quality
[deq.virginia.gov]
1111 East Main Street
Richmond, VA 23219
Phone: 804-965-4329

From: Fulcher, Valerie (DEQ) <Valerie.Fulcher@deq.virginia.gov>
Sent: Thursday, July 25, 2024 2:17 PM
To: Ballou, Thomas (DEQ); Lovain, Ava (DEQ); Churchill, Nikolas (DEQ); Miller, Mark (DEQ); DCR-PRR Environmental Review (DCR); Lasher, Terrance J. (DOF); Folks, Clint (DOF); dgif-ESS Projects (DWR); Kirchen, Roger (DHR); Birge-wilson, Adrienne (DHR); Heller, Matthew (Energy); ImpactReview (impactreview@vof.org); EIR Coordination (VDOT); Berry, Jason; Aaron Sizemore
Cc: McLoughlin, Brendan
Subject: [EXTERNAL] NEW SCOPING Abingdon 138 kV Substation Transmission Project in Washington County
Attachments: Abingdon 138kv Substation Transmission Project.pdf; Abingdon 138kv Substation Transmission Project Scoping Response.pdf

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

> **Appalachian Power Company: Abingdon 138-kilovolt Substation Transmission Project in Washington County, Virginia**

If you choose to make comments, please send them directly to the project sponsor (brendan.mcloughlin@powereng.com). DEQ-OEIR will coordinate a review when the environmental document is completed.

DEQ-OEIR's scoping response is also attached.

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

Valerie

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

For program updates and public notices please subscribe to the Environmental Impact Review Public Notices Bulletin: https://public.govdelivery.com/accounts/VADEQ/subscriber/new [public.govdelivery.com]

From: Hutchison, Michael (DEQ) <Michael.Hutchison@deq.virginia.gov>
Sent: Sunday, August 11, 2024 11:18 PM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Subject: [EXTERNAL] Re: Abingdon 138-kV Substation Transmission Project

Mr. McLoughlin,

Thank you for submitting this proposed project to the Virginia Department of Environmental Quality. Our comments are attached. Please feel free to contact me if you have any further questions.

Sincerely,

Michael Hutchison

Michael Hutchison - Regional Biologist
Virginia Department of Environmental Quality
Southwest Regional Office
355-A Deadmore St.
Abingdon VA 24210
276-608-8685
michael.hutchison@deq.virginia.gov

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

www.deq.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

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

August 9, 2024

Brendan McLoughlin
Environmental Planner
Power Engineers Inc.
6641 W. Broad St. Suite 405
Richmond, VA 23230

Re: Abingdon 138-kv Substation Transmission Project

Dear Mr. McLoughlin,

Thank you for submitting to the Virginia Department of Environmental Quality this proposal for the improvement of electrical transmission facilities in Abingdon, Virginia. This project calls for an expansion and equipment upgrade at the existing Abingdon Substation on Rustic Lane, construction of new transmission lines for about one mile around the substation, and removal of existing transmission lines adjacent to the new lines.

This project location is in the watershed of Wolf Creek, in the Tennessee and Big Sandy River Basin (Holston River subbasin), Section 3, Class IV. Wolf Creek in this area is currently unassessed due to insufficient data. For more information, please contact regional TMDL Coordinator Landon Jenkins at (276) 608-8643 or email Landon.Jenkins@deq.virginia.gov.

The following discussion is provided as a guideline of programs administered by the Department of Environmental Quality (DEQ) and other agencies of the Commonwealth, which could be applicable to the proposed action. Final determination concerning potential impacts on these programs rests with DEQ's Southwest Regional Office and the appropriate agency administering each program. It is the responsibility of the applicant to coordinate development with these agencies.

The Department of Environmental Quality has no objections to the project provided that the applicant abides by all applicable state, Federal, and local laws and regulations. Prior to construction, all permits and approvals must be obtained. In general, development must incorporate features which prevent significant adverse impacts on ambient air quality, water quality, wetlands, historic structures, fish wildlife, and species of plants, animals, or insects listed by state agencies as rare, threatened, or endangered.

1. Water Quality and Wetlands. Although no long-term adverse impacts to water quality are anticipated from this project, potential short-term adverse impacts resulting from surface runoff due to construction must be minimized. This can be achieved by using Best Management Practices (BMPs).

Federal and state governments regulate impacts to streams and wetlands. The Virginia Marine Resources Commission serves as the clearinghouse for the Joint Permit Application (JPA) used by: (1) U.S. Army Corps of Engineers for issuing permits pursuant to *§ 404 of the Clean Water Act* and *§ 10 of the Rivers and Harbors Act*; (2) Department of Environmental Quality for issuance of Virginia Water Protection Permit pursuant to *§ 401 of the Clean Water Act*, Virginia Code *§ 62.1-44.2 et seq.*, Virginia Code *§ 62.1-44.15:5*, and Virginia Administrative Code *9 VAC 25-210-10 et seq.*; and (3) Virginia Marine Resources Commission regulates encroachments on or over state-owned subaqueous beds as well as tidal wetlands pursuant to Virginia Code *§ 28.2-1200* through *1400*. Contact VMRC at (757) 247-2200 to determine the need for a JPA for this project. VMRC will distribute the application to the appropriate agencies. Each agency will conduct its review and respond.

In general, DEQ recommends that the amount of stream and wetland impacts be avoided to the maximum extent practicable. For unavoidable impacts, DEQ encourages the following practices to minimize the impacts to wetlands and waterways: use of directional drilling from upland locations; operation of machinery and construction vehicles outside of stream-beds and wetlands; use of synthetic mats when in-stream work is unavoidable; stockpiling of material excavated from the trench for replacement if directional drilling is not feasible; and preservation of the top 12 inches of trench material removed from wetlands for use as wetland seed and root stock in the excavated area. The Southwest Regional contact is currently David Nishida at (276) 698-7680 or email David.Nishida@deq.virginia.gov if a permit is necessary to go forward with the project.

2. Erosion and Sediment Control and Stormwater Management. Erosion and sediment control measures must be implemented in accordance with the current edition of the Virginia Erosion and Sediment Control Handbook and the Virginia Erosion and Sediment Control Regulations, which are available online: https://www.deq.virginia.gov/permits/water/stormwater-construction. If the total land disturbance exceeds 10,000 square feet, an erosion and sediment control plan will be required. Erosion and sediment control requirements are regulated by the local government where your land disturbing activity is occurring. Please contact the appropriate county, city or town for information and compliance requirements.

Stormwater management planning and permitting is required through our Department should your land disturbance be greater than one (1) acre or lie within the boundaries of a common plan of development. Information, permit application, and regulations on our stormwater management program are available online at: https://www.deq.virginia.gov/permits/water/stormwater-construction. Please contact Kelly Miller at our Southwest Regional Office at (276) 676-4879 or email Kelly.Miller@deq.virginia.gov for more information.

Stormwater discharges associated with industrial activity may require permitting based on the nature of the industrial activity and the Standard Industrial Code associated with the facility. Information, permit application, and regulations on our industrial stormwater permitting program are available online at: https://www.deq.virginia.gov/permits/water/stormwater-industrial. Please contact David Nishida at our Southwest Regional Office at (276) 698-7680 or email David.Nishida@deq.virginia.gov for more information.

3. Air Quality. This project is not likely to adversely affect air quality. However, during construction fugitive dust must be kept at a minimum. This requires, but is not limited to, measures such as application of water to suppress dust and washing down construction vehicles and paved roadways immediately adjacent to the construction site. The following sections of Virginia Administrative Code (VAC) may be applicable: *9 VAC 5-50-60 et. seq.*, governs abatement of visible emissions and fugitive dust emissions, and *9 VAC 5-40-5600 et. seq.* addresses open burning. The Southwest Regional Office contact is Tracey Blalock at (276) 676-8848 or email susan.blalock@deq.virginia.gov.

Some emission units may require an air quality permit prior to beginning actual construction. Examples of units that may require permitting can include, but are not limited to, boilers, space heaters, furnaces, incinerators, engines, emergency generators, or other gaseous, liquid, or solid fuel-fired equipment. A construction and operation permit in accordance with 9VAC5-80, Article 6 (https://www.deq.virginia.gov/home/showpublisheddocument/4530/638046408091030000) can be obtained by submitting a complete permit application to DEQ. The Form 7 permit application is available at https://www.deq.virginia.gov/permits/air/forms.. In addition to permitting requirements, other state and federal regulations may apply to fuel burning equipment units. The Southwest Regional Office contact for air quality permitting is Rob Feagins at (276) 608.8506, or email rob.feagins@deq.virginia.gov.

4. Solid and Hazardous Wastes, and Hazardous Substances. DEQ administers the Virginia Solid Waste Management Regulations and the Virginia Hazardous Waste Management Regulations. We recommend that all solid wastes generated at the site be reduced at the source, reused, or recycled. All hazardous wastes should be minimized. Otherwise, all solid waste and hazardous waste must be managed in accordance with all applicable federal, state, and local environmental regulations. The Southwest Regional Office contact is Stacey Bowers at (276) 608-8777 or email Stacy.Bowers@deq.virginia.gov concerning location and availability of waste management facilities in the project area.

5. Pesticides and Herbicides. DEQ recommends that the use of herbicides or pesticides for construction or landscape maintenance should be in accordance with the principles of integrated pest management. The least toxic pesticides that are effective in controlling the target species should be used. Please contact the Virginia Department of Agriculture and Consumer Services at (804) 786-3501 for more information.

6. Pollution Prevention. DEQ recommends that construction projects incorporate the principles of pollution prevention including the following recommendations:

- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content and toxicity level should be considered.
- Consider contractors' commitments to the environment when choosing contractors. Also, specifications regarding raw material selection (alternative fuels and energy sources) and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable practices and materials in infrastructure and construction and design. These could include asphalt and concrete containing recycled materials and integrated pest management in landscaping.
- Integrate pollution prevention techniques into maintenance and operation activities to include source reduction (fixing leaks, energy efficient products).

Pollution prevention measures are likely to reduce potential environmental impacts and reduce costs for material purchasing and waste disposal. For more information, contact Sharon Baxter at DEQ's Office of Pollution Prevention at (804) 659-1911 or email Sharon.Baxter@deq.virginia.gov.

7. Water Withdrawal Permitting and Compliance. Withdrawals from surface water or groundwater sources may require a water withdrawal permit if they exceed certain withdrawal volumes. Both groundwater and surface water supplies are becoming more limited, and if your facility anticipates needing water in excess of 300,000 gallons in any month for groundwater, or 10,000 gallons on any day from surface water, early engagement with DEQ's Office of Water Supply is strongly encouraged.
For more information, please contact Eric Seavey at (804) 754-6250 or eric.seavey@deq.virginia.gov or visit DEQ's website at https://www.deq.virginia.gov/permits/water/water-withdrawal

8. Energy Conservation. Structures should be planned and designed to comply with state and federal guidelines and industry standards for energy conservation and efficiency. For example, energy efficiency of any structures can be enhanced by maximizing the use of the following

- thermally-efficient building shell components (roof, wall, floor, and insulation);
- high efficiency heating, ventilation, air conditioning systems; and
- high efficiency lighting systems.

Gerald Wilkes of Virginia Energy can be contacted at (434) 951-6364 for assistance in meeting this challenge.

9. Natural Heritage Resources. The Department of Conservation and Recreation's Division of Natural Heritage (DNH) can search its Biotics Data System (BDS) 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 animal and plant species, unique or exemplary natural communities, and significant geologic communities.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Department of Conservation and Recreation (DCR), DCR has the authority to report for VDACS on state-listed plant and insect species. We recommend that the DNH be contacted at (804) 786-7951, to secure updated information on natural heritage resources before the project is implemented.

10. Wildlife Resources. The Department of Wildlife Resources (DWR), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state or federally listed endangered or threatened species, but excluding listed insects (*Virginia Code* Title 29.1). DWR is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 *et seq*.), and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DWR determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce, or compensate for those impacts. For more information, see the DWR website at http://dwr.virginia.gov/wies/environmental-services or contact ESSProjects@dwr.virginia.gov and ProjectReview@dwr.virginia.gov.

11. Historic and Archaeological Resources. *Section 106 of the National Historic and Preservation Act of 1966*, as amended, requires that activities that receive federal funding must consider effects to properties that are listed or eligible for listing on the National Register of Historic Places. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources. If applicable, contact DHR. In the event that archaeological resources are encountered during construction, immediately contact Adrienne Birge-Wilson at (804) 482-6092.

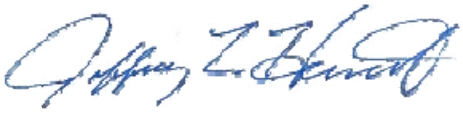
12. Waterworks Operation. Installation of new water lines and appurtenances must comply with the State's Waterworks Regulations. The Virginia Department of Health administers both federal and state laws governing waterworks operation. For more information, contact Brian.Blankenship@vdh.virginia.gov.

13. Sewerage Regulations. Sewage treatment works must be designed in accordance with the Department of Environmental Quality's Sewage Collection and Treatment (SCAT) Regulations (9 VAC 25-790). Information concerning regulations may be found at the Department of Environmental Quality Wastewater Engineering web site: https://www.deq.virginia.gov/our-programs/water/wastewater. The project proponent is required to obtain a Certificate to Construct (CTC) and a Certificate to Operate (CTO) from the DEQ Southwest Regional Office,

prior to constructing wastewater treatment works and operating the treatment works, respectively. Additionally, modifications and upgrades to wastewater treatment works may have additional implications to the Virginia Pollutant Discharge Elimination System (VPDES) Permit associated with the facility. The Southwest Regional Office contact for VPDES Permits is David Nishida. He can be reached at david.nishida@deq.virginia.gov or (276) 698-7680.

Thank you for your inquiry. We appreciate your interest in complying with Virginia's environmental legislation. If you have any further questions please do not hesitate to call Michael Hutchison at (276) 608-8685.

Sincerely,



Jeffrey L. Hurst, Regional Director
Virginia Department of Environmental Quality
(276) 676-4804
jeffrey.hurst@deq.virginia.gov
Southwest Regional Office
355-A Deadmore St., Abingdon VA 24210
(276) 676-4800

cc. file

From: Bellville-marrion, Jennifer (DHR) <Jennifer.Bellville-Marrion@dhr.virginia.gov>
Sent: Friday, August 9, 2024 11:23 AM
To: McLoughlin, Brendan
Subject: [EXTERNAL] Abingdon 138-kilovolt Substation Transmission Project (DHR File No. 2024-4590)
Attachments: 2024-4590 Abingdon 138-kilovolt Substation Transmission Project _Public Notice .pdf

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Mr. McLoughlin,

Thank you for requesting comments from the Department of Historic Resources on the referenced project. Please see the attached letter for our comments and print for your files. No hardcopy will follow. If you have any questions concerning these comments or require any further assistance, please contact me.

Sincerely,

DHR
VIRGINIA DEPARTMENT OF HISTORIC RESOURCES

[facebook.com]
[instagram.com]
[linkedin.com]
[twitter.com]

Jenny Bellville-Marrion
Archaeologist - Review and Compliance
Department of Historic Resources

Email jennifer.bellville-marrion@dhr.virginia.gov
Phone 804-482-8091

2801 Kensington Ave, Richmond, VA 23221
www.dhr.virginia.gov [dhr.virginia.gov]

COMMONWEALTH of VIRGINIA

Travis A. Voyles
Secretary of Natural and Historic Resources

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director
Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

August 9, 2024

Brendan McLoughlin
6641 W. Broad Street
Suite 405
Richmond VA 23230

Re: Abingdon 138-kilovolt Substation Transmission Project
Washington County, Virginia
DHR File No. 2024-4590

Dear Mr. McLoughlin

We have received your request for comments on the project referenced above. Our comments are provided as technical assistance to Appalachian Power. We have not been notified by any state or federal agency of their involvement in this project; however, we reserve the right to provide additional comment pursuant to the National Historic Preservation Act, if applicable.

Based on the submission, Appalachian Power plans to prepare an application for a certificate of public convenience and necessity (CPCN) from the State Corporation Commission (SCC). Typically, for SCC permitted projects, we recommend that Appalachian Power follows the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia,* developed by DHR and the SCC to assist project proponents in developing transmission line projects that minimize impacts to historic resources.

Typically, we recommend that the project proponent establish a study area for each route alternative under consideration and gather information on known resources. A qualified cultural resources consultant in the appropriate discipline should perform an assessment of impact for each known historic resource present within the proposed study area.

Once the route alternatives have been finalized, DHR recommends that full archaeological and architectural surveys be performed to determine the effect of the project on all historic resources listed in or eligible for listing in the National Register. This process involves the identification and recordation of all archaeological sites and structures greater than 50 years of age, the evaluation of those resources for listing in the National Register, determining the degree of impact of the project on eligible resources, and developing a plan to avoid, minimize, or mitigate any negative impacts. Comments received from the public or other stakeholder regarding impacts to specific historic resources should be addressed as part of this survey and assessment process.

Thank you for seeking our comments on this project. If you have any questions at this time, please do not hesitate to contact me at jennifer.bellville-marrion@dhr.virginia.gov.

Sincerely,

Jenny Bellville-Marrion, Project Review Archaeologist
Review and Compliance Division

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

From: Tommy Oravetz <toravetz@vof.org>
Sent: Tuesday, July 16, 2024 4:44 PM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Fraser, Daniel <daniel.fraser@powereng.com>; 'Blair M Burns' <bmburns@aep.com>; Tim Ward <trward@aep.com>; Kristen M Mahoney <kmahoney@aep.com>; Harry Hibbitts <hhibbitts@vof.org>; Emily Yates <eyates@vof.org>
Subject: [EXTERNAL] Re: Abingdon 138-kV Substation Transmission Project

Hello Brendan,

I have copied Harry Hibbitts and Emily Yates on this email so they can review the request.

Thanks for reaching out to VOF about the project.

Kind regards,

Tommy Oravetz

Conservation Specialist (Region 5, Blacksburg Office)

Virginia Outdoors Foundation | vof.org [vof.org]

Mailing address:

Virginia Outdoors Foundation

39 Garrett St. Suite 200
Warrenton, VA 20186

Cell: (540) 750-6370

Office: (844) 863-9800 ext 390

From: ImpactReview <impactreview@vof.org>
Sent: Wednesday, July 17, 2024 10:55 AM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Martha Little <mlittle@vof.org>; Harry Hibbitts <hhibbitts@vof.org>
Subject: [EXTERNAL] Re: Abingdon 138-kV Substation Transmission Project

Hi Brendan,

The Virginia Outdoors Foundation has reviewed the project referenced below. As of July 16, 2024, this project will not encroach on any existing nor proposed VOF open-space easements.

Please contact VOF again for further review if the project area changes or if this project does not begin within 24 months. Thank you for considering conservation easements.

Best,
Baron

Baron Lin (*he/they*)

GIS Specialist

Virginia Outdoors Foundation [vof.org]

cell: 540-935-3163

other work #: 844-863-9800, ext. 355

email: blin@vof.org

From: ImpactReview <impactreview@vof.org>
Sent: Thursday, July 25, 2024 3:22 PM
To: Fulcher, Valerie (DEQ) <Valerie.Fulcher@deq.virginia.gov>; McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Martha Little <mlittle@vof.org>
Subject: [EXTERNAL] Re: NEW SCOPING Abingdon 138 kV Substation Transmission Project in Washington County

Hi Brendan,

The Virginia Outdoors Foundation has reviewed the project referenced below. As of July 25, 2024, this project will not encroach on any existing nor proposed VOF open-space easements.

Please contact VOF again for further review if the project area changes or if this project does not begin within 24 months. Thank you for considering conservation easements.

Best,
Baron

Baron Lin (*he/they*)

GIS Specialist

Virginia Outdoors Foundation [vof.org]

cell: 540-935-3163

other work #: 844-863-9800, ext. 355

email: blin@vof.org

From: Crowder, P.E. Tabitha (VDOT) <tabitha.crowder@vdot.virginia.gov>
Sent: Tuesday, July 16, 2024 5:22 PM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>; Heath, Pamela, P.E. (VDOT) <Pamela.Heath@VDOT.Virginia.gov>
Cc: Fraser, Daniel <daniel.fraser@powereng.com>; 'Blair M Burns' <bmburns@aep.com>; Tim Ward <trward@aep.com>; Kristen M Mahoney <kmahoney@aep.com>; Harrison, Jeff W (VDOT) <JeffW.Harrison@vdot.virginia.gov>
Subject: [EXTERNAL] RE: Abingdon 138-kV Substation Transmission Project

Brendan,

I am forwarding your email to the Abingdon Residency. They will provide the feedback you request. Pam Heath, Assistant Residency Engineer, will be your main point of contact. She is included in the to line of this email.

Thanks.

Tabitha

Tabitha H. Crowder, P.E.
District Engineer/Bristol District
Virginia Department of Transportation
276-696-3285 (o) 276-696-9702 (c)
tabitha.crowder@VDOT.Virginia.gov

From: Mullins, Samantha (VDOT) <Samantha.Mullins@vdot.virginia.gov>
Sent: Friday, August 9, 2024 9:08 AM
To: McLoughlin, Brendan
Cc: Ailor, Blake, AICP (VDOT); Heath, Pamela, P.E. (VDOT); Brown, Rachael (VDOT); EIR Coordination (VDOT)
Subject: [EXTERNAL] Abingdon 138 kV Substation Transmission Project in Washington County - Environmental Review Comments

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Good morning Brendan,

The Virginia Department of Transportation Planning and Investment Management Division has reviewed the information attached in an email related to the Abingdon 138 kV Substation Transmission Project in Washington County.

Bristol District Planning offers no comments for this project. The Abingdon Residency has already provided comments, so please continue to coordinate with them throughout the development of the project.

Please let me know if you have any questions or if additional information is needed.

Thank you,

Samantha Mullins
Planning Specialist / Bristol District
Virginia Department of Transportation
Office: 276-696-3280
Cell: 276-268-0576
Samantha.Mullins@VDOT.Virginia.gov

From: Brown, Rachael (VDOT) <Rachael.Brown@VDOT.Virginia.gov>
Sent: Monday, July 29, 2024 10:04 AM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Heath, Pamela, P.E. (VDOT) <Pamela.Heath@VDOT.Virginia.gov>
Subject: [EXTERNAL] Abingdon 138-kV Substation Transmission Project

Brendan-

VDOT has reviewed the proposed Abingdon 138-KV Substation Transmission Project, and a Land Use Permit will be required for all work within VDOT ROW, including but not limited to traffic control, new overhead utility lines, new roadway connections to serve project access… The Abingdon Residency office located at 700 East Main Street; Abingdon will be your point of contact for obtaining the land use permit. Please note that any work, including surveying of the project before construction if on VDOT ROW requires a land use permit. I have attached the VDOT Special Provisions for Utility Installation to this correspondence for your reference as well.

Should you have any questions or concerns, please feel free to reach out to our office at the numbers below or by email.

Thank you,

Rachael P. Brown
Land Use Engineer - Abingdon Residency
Virginia Department of Transportation
276-525-6467 ofc
276-285-1012 cell
rachael.brown@VDOT.Virginia.gov

April 1, 2017

Land Use Permit - LUP-UT
Utility installations

The installation of utilities on state maintained highway right-of-way is authorized under Sections **24VAC30-151-300** General Provisions Governing Utilities through 24VAC30-151-400 of the Land Use Permit Regulations
http://law.lis.virginia.gov/admincode/title24/agency30/chapter151/

Land Use Permit Required by Law

The General Rules and Regulations of the Commonwealth Transportation Board provide that no work of any nature shall be performed on any real property under the ownership, control, or jurisdiction of VDOT until written permission has been obtained from VDOT. Written permission is granted for the installation of utilities on state maintained highway right-of-way through the issuance of a land use permit.

By issuing a permit, VDOT is giving permission only for whatever rights it has in the right-of-way; the permittee is responsible for obtaining permission from others who may also have an interest in the property.

The permittee will be civilly liable to the Commonwealth for expenses and damages incurred by VDOT as a result of violation of any of the rules and regulations of this chapter. Violators shall be guilty of a misdemeanor and, upon conviction, shall be punished as provided for in §**33.2-210** of the Code of Virginia.

Application Requirements

Application for a land use permit authorizing the installation of utilities on non-limited or limited access state maintained highways shall be made through the local district permit office where the activity is to take place.

The proposed installation shall accompany plan/sketches showing distances from edge of pavement, existing and proposed right-of-way line, depths below existing and proposed grades, depths below ditch line or underground drainage structures, or other features shall be shown. Any existing utilities within close proximity of the permittee's work shall be shown. Location of poles, guys, pedestals, relief valves, vent pipes, etc. shall be shown. Height of wires or cables above the crown of the roadway shall be shown.

Please note the company has to be registered with the State Corporation Commission and with Miss Utility.

Application, forms and general information regarding VDOT land use permitting for the installation of utility on state maintained highways right-of-way are included below.

24VAC30-151-710. Fees.

A. Single use permit. A nonrefundable application fee shall be charged to offset the cost of reviewing and processing the permit application and inspecting the project work, in accordance with the requirements below:

1. The application fee for a single permit is $100.
2. Additive costs shall be applied as indicated below.

Activity	Fee
Storm Sewer	$10 per 100 linear feet
Box Culvert or Bridge	$5 per linear foot of attachment
Drop Inlet	$10 per inlet
Pole Attachment	$10 per structure
Span Guy	$10 per crossing
Additive Guy and Anchor	$10 per guy and anchor
Underground Utility - Parallel	$10 per 100 linear feet

Activity	Fee
Overhead or Underground Crossing	$10 per crossing
Excavation Charge (including Test Bores and Emergency Opening)	$10 per opening

Surety Requirement

The permittee and/or their agent shall provide surety to guarantee the satisfactory performance of the activity authorized under the auspices of the land use permit issued for the initial installation. The surety shall be based on the estimated cost of work to be performed within the right-of-way and the amount shall be determined by the district administrator's designee. The surety may be in the form of a check, cash, irrevocable letter of credit, Corporate Surety, Resolution or bond. This surety will be refunded or released upon satisfactory completion of the initial installation and inspection by VDOT.

Cash Surety Refund

Applicants owing the Internal Revenue Service or the Commonwealth of Virginia may not receive a refund of the cash guarantee provided for the issuance of a VDOT land use permit unless the amount owed is less than the amount of cash guarantee provided. Applicants providing cash guarantee for the issuance of a VDOT land use permit must provide an executed copy of the Commonwealth of Virginia's Substitute Form W-9 to receive a refund of the cash guarantee provided for the issuance of a VDOT land use permit

Contact Information

A list of counties with their corresponding VDOT district offices and contact information may be obtained at the following VDOT web site: **http://www.virginiadot.org/about/districts.asp**

From: CENAO-REG_ROD <CENAO-.REG_ROD@usace.army.mil>
Sent: Thursday, July 18, 2024 7:34 AM
To: McLoughlin, Brendan
Cc: Trent, Garrie C CIV USARMY CENAO (USA)
Subject: [EXTERNAL] Your submittal to the Norfolk District Regulatory Office has been received NAO-2024-01933-PB (Abingdon Substation Transmission Project / Scoping / Washington)

Dear Applicant:

We have received your request and it has been assigned NAO project number referenced in the subject line above. Please reference this project number in all future communications.

Your request has been assigned to the County POC based on project location listed here: https://www.nao.usace.army.mil/Missions/Regulatory/Contacts.aspx [nao.usace.army.mil]. Your project manager will reach out to you within 15 days confirming assignment of your request. If you do not hear from your PM within 15 days, reach out to the County POC.

NOTE: If you have submitted a PASDO category A checklist, we will only contact you if we have concerns.

Thank you!
- Regulatory Branch, Norfolk District, US Army Corps of Engineers

From: Trent, Garrie C CIV USARMY CENAO (USA) <Claire.Trent@usace.army.mil>
Sent: Wednesday, August 7, 2024 10:18 AM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Fraser, Daniel <daniel.fraser@powereng.com>
Subject: [EXTERNAL] NAO-2024-01933 Scoping Response

Please see the attached scoping response for your request for agency environmental review of your planning proposal.

G. Claire Trent
Project Manager
Western Virginia Regulatory Section
Norfolk District USACE
276-206-8347
Email: claire.trent@usace.army.mil

DEPARTMENT OF THE ARMY

NORFOLK DISTRICT, CORPS OF ENGINEERS
FORT NORFOLK, 803 FRONT STREET
NORFOLK, VIRGINIA 23510-1096

August 7, 2024

REPLY TO
ATTENTION OF:

Western Virginia Regulatory Section
NAO-2024-01933

Transmission by Electronic Mail

Brendan McLoughlin
Power Engineers
6641 W. Broad Street
Richmond, VA 23230

RE: Appalachian Power Company, Abingdon 138-Kv Substation Transmission Project- Scoping Response

Dear Mr. McLoughlin

This letter regards your request for agency environmental review and consultation for the Appalachian Power Company, Abingdon 138-Kv Substation Transmission Project located off Rustic Lane, Abingdon, Washington County, Virginia.

The U.S. Army Corps of Engineers has jurisdiction over certain activities undertaken in waters and/or wetlands regulated under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and/or Section 404 of the Clean Water Act of 1977. Any work in jurisdictional areas which is considered structure, fill (dirt, concrete, rock, etc.), dredging and/or excavations under current regulation may require a Department of the Army permit and possibly authorization from local authorities.

Detailed project plans along with site specific information is needed to determine if a proposed activity is within our jurisdiction. Please visit our website at https://www.nao.usace.army.mil/Missions/Regulatory/ to obtain a Pre-Application / JD Request form. As part of any JD request submittal please ensure you follow guidelines per the 1987 Wetland Manual and its accompanying Eastern Mountain and Piedmont Regional Supplement; including but not limited to completion and submittal of data forms.

In addition, work in these areas may require a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ) as well as authorization from your local authority.

You may obtain a Joint Permit Application online at http://www.nao.usace.army.mil/Missions/Regulatory/JPA.aspx or from any of the agency offices. Please obtain all federal, state, and local permits before beginning work in any jurisdictional areas. Please reference Corps project number NAO-2023-02115 for any further correspondence for this project.

Should the area of proposed activity not contain any regulated waters, then no Department of the Army permit is required.

If you have any questions, please contact Claire Trent at (276) 206-8347 or Claire.Trent@usace.army.mil.

Sincerely,

/s/ G. Claire Trent
Project Manager, Virginia Highlands Field Office

From: Willson, Matthew (he/him/his) <Willson.Matthew@epa.gov>
Sent: Thursday, July 18, 2024 10:34 AM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Davis, Jamie <Davis.Jamie@epa.gov>
Subject: [EXTERNAL] RE: For your review? - FW: Abingdon 138-kV Substation Transmission Project

Mr. Mcloughlin,

This email is in response to you letter to Adam Ortiz, the EPA Region 3 Regional Administrator, dated July 16, 2024. Thank you for reaching out regarding Appalachian Power Company's Abingdon 138-kilovolt Substation Transmission Project. I am a NEPA reviewer for the EPA and will be responding on behalf of EPA region 3. Please explain what type of review you are asking for and under what regulatory context. In your response, please let us know if this project is subject to NEPA under 40 CFR 1500.1.
Also, please let me know by what date you would like to receive feedback.
Feel free to call me if that is your preferred method of communication.

Thanks!

Matthew Willson
NEPA Specialist- NEPA & Technical Assistance Branch
Environmental Justice, Community Health, & Environmental Review Division
EPA Region 3 [intranet.epa.gov] Philadelphia, PA

[facebook.com] [twitter.com]
Phone: 215-814-5795
Email: willson.matthew@epa.gov

Pronouns: He/Him
Pronouns: He/Him/His

From: Virginia Field Office, FW5 <virginiafieldoffice@fws.gov>
Sent: Wednesday, July 17, 2024 9:45 AM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Fraser, Daniel <daniel.fraser@powereng.com>; bmburns@aep.com; Tim Ward <trward@aep.com>; Kristen M Mahoney <kmahoney@aep.com>
Subject: Re: [EXTERNAL] Abingdon 138-kV Substation Transmission Project

Hello Brendan,

Thank you for notifying our office about this project. Can you please submit a full project package in accordance with our online review process linked here [fws.gov]? Please submit project packages to this email, rather than to Troy and Cindy, to help facilitate review.

Best,
Jackie

From: Harper, John - FPAC-NRCS, VA <john.harper@usda.gov>
Sent: Wednesday, July 17, 2024 7:28 AM
To: McLoughlin, Brendan <brendan.mcloughlin@powereng.com>
Cc: Fraser, Daniel <daniel.fraser@powereng.com>; 'Blair M Burns' <bmburns@aep.com>; Tim Ward <trward@aep.com>; Kristen M Mahoney <kmahoney@aep.com>; Clark, Cameron - FPAC-NRCS, VA <cameron.clark@usda.gov>
Subject: [EXTERNAL] RE: [External Email]Abingdon 138-kV Substation Transmission Project

Good morning Brendan,
If all is in an existing right of way, you are exempt from the Farmland Protection Policy act and would not need to file a CPA-106 for corridor permanent change of land using federal funds.
However, your letter states that "Appalachian Power plans to acquire some new rightof-way for the transmission line between Abingdon Substation and Elementary Drive. The Project extents are shown in **Attachment 1**." The attachment only shows existing according to the legend.

If new right of ways are needed, the CPA-106 [nrcs.usda.gov] showing the acreage changing map will need to be sent to Cameron Clark, CC'd here.

J. David Harper
State Soil Scientist
State Resource Inventory Coordinator
State Climate Smart POC
Farmland Protection Policy Act Coordinator
1606 Santa Rosa Road, Suite 209
Richmond, Virginia 23229
804-287-1647

ATTACHMENT 2.D.1: DESKTOP WETLAND AND STREAM DELINEATION REPORT

September 2024

APPALACHIAN POWER COMPANY

Abingdon 138-kV Substation Transmission Project

SCC Case No. PUR-2024-00169
Washington County, Virginia

Virginia Department of Environmental Quality
Desktop Wetland and Stream Delineation Report

PROJECT NUMBER:
0252635
PROJECT CONTACT:
Jason Cook
EMAIL:
Jason.Cook@powereng.com
PHONE:
804-964-1035

POWER ENGINEERS

TABLE OF CONTENTS

TABLES

ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

Appalachian Power	Appalachian Power Company
Company	Appalachian Power Company
CIR	Color Infrared
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
kV	kilovolt
LiDAR	Light Detection and Ranging
NFHL	National Flood Hazard Layer
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
POWER	POWER Engineers, Inc.
Project	Abingdon 138-kV Substation Transmission Project
PSS	Palustrine Scrub-Shrub Wetland
PUB	Palustrine Unconsolidated Bottom Wetland
ROW	Right-of-way
SCC	State Corporation Commission
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VBMP	Virginia Base Mapping Program
VGIN	Virginia Geographic Information Network

1.0 INTRODUCTION

With the Abingdon 138-kV Substation Transmission Project (the "Project"), Appalachian Power Company ("Appalachian Power" or "Company") proposes to upgrade the existing Abingdon Substation and terminate the existing Broadford – Wolf Hills 138-kilovolt ("kV") Circuit into the substation in Washington County, Virginia. The Project will expand the existing Abingdon Substation on Company-owned property and rebuild approximately 1.0 mile of the Company's Saltville – Kingsport 138-kV Transmission Line. A Project Location Map is provided as Attachment A. The purpose of the Project is to address reliability criteria violations identified through the PJM Interconnection Regional Transmission Expansion Plan process.

Four new 138-kV circuit breakers, two new box bays, associated disconnect switches, and new bus work will be installed at the existing Abingdon Substation to bifurcate an existing circuit and provide additional protection and controls. These improvements require expanding the existing substation by approximately 2,450 square feet on Appalachian Power property. The proposed substation expansion area is approximately 25 feet by 98 feet to accommodate the new equipment. A short portion of the existing Saltville – Kingsport 138-kV Transmission Line, which was originally constructed in the 1920s as a double-circuit transmission line primarily using steel lattice steel structures, will be rebuilt to connect the existing line into the expanded Abingdon Substation. The transmission line is expected to be rebuilt primarily using modern steel lattice towers and monopoles; however, final structure types will be determined following additional studies and final engineering. The proposed structure heights are anticipated to range from 86 to 145 feet tall. The average height of the proposed structures is 110 feet, which is five feet taller than the average height of the existing structures to meet current design standards. The typical right-of-way ("ROW") width is 100 feet; however, the width of the ROW may be increased depending on safety, engineering, or operational requirements.

Appalachian Power contracted POWER Engineers, Inc. ("POWER") to prepare this Desktop Wetland and Stream Delineation Report for inclusion in the Company's Application for a Certificate of Public Convenience and Necessity for the Project, to be filed with the Virginia State Corporation Commission ("SCC"), which approves or denies such applications (SCC Case No. PUR-2024-00169).

The purpose of the Desktop Wetland and Stream Delineation Report is to identify potential federally jurisdictional and state regulated waters within the substation expansion area and the proposed ROW. A siting effort was undertaken to determine the alignment for the Project and no viable alternative routes were identified that would address the needs of the Project as well as minimize impacts to the human and natural environments. Upgrades to the existing Abingdon Substation will occur on property owned by Appalachian Power. The proposed route for the Project begins near existing structure 62-83, which is northeast of the Company's existing Abingdon Substation, and ends near existing structure 62-90, which is southwest of the Abingdon Substation in Washington County, Virginia. This report includes a description of the methodologies POWER used to determine the location and size of potential regulated waters within the Project's ROW and guidance regarding the probability of encountering regulated features during a field verification.

2.0 METHODS

2.1 Data Sources and Background Information

POWER reviewed various mapping sources and Geographic Information System ("GIS") data to identify areas where wetlands or streams could potentially be located within a typical 100-foot-wide ROW for the Project. The GIS data and mapping sources reviewed include the following:

- United States Geological Survey ("USGS"), United States Elevation Data (USGS 2024)
- Virginia Geographic Information Network ("VGIN") Virginia Base Mapping Program ("VBMP") color orthoimagery (VGIN 2019).
- Color Infrared ("CIR") aerial imagery and orthophotography (VBMP 2018 and 2019).
- Google Earth color aerial photography, including historical aerial data (Google Earth 1995, 1998, 2002, 2003, 2005 to 2008, 2011, 2012, 2015, 2019, and 2021).
- National Hydrography Dataset ("NHD") stream and river data (USGS 2024).
- United States Fish and Wildlife Service ("USFWS") National Wetland Inventory ("NWI") mapping (USFWS 2024).
- United States Department of Agriculture ("USDA") Natural Resources Conservation Service ("NRCS") Soil Surveys of the Washington County Area and the City of Bristol, Virginia (USDA-NRCS 2006).
- USDA-NRCS Web Soil Survey (USDA-NRCS 2019).
- Federal Emergency Management Agency ("FEMA") National Flood Hazard Layer ("NFHL") data (FEMA 2010).
- Esri Terrain with Labels Basemap (Esri 2016).
- SAM, LLC, Light Detection and Ranging Elevation Data (LiDAR) (SAM 2023)

2.2 Wetland Definitions

Federal regulations define wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation, typically adapted for life in saturated soil conditions" (United States Environmental Protection Agency ["USEPA"] 2023).

Under normal circumstances, three parameters must be present for an area to be considered a wetland: hydrophytic vegetation, wetland hydrology, and hydric soils. Applicable technical guidance that defines these parameters and provides criteria for the evaluation of associated data and field indicators is provided in the 1987 *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the United States Army Corps of Engineers Wetland Delineation Manual, Eastern Mountains and Piedmont Region, (Version 2.0)* (United States Army Corps of Engineers ["USACE"] 2012).

Using the data sources outlined above, POWER identified areas that could potentially satisfy the three parameters required to meet the definition of a wetland provided by the USACE.

Aerial imagery and NWI mapping for the Project were used to determine potential habitat type of the desktop delineated wetlands. NWI maps use the Classification of Wetlands and Deepwater Habitats of the United States to classify wetland habitat types (Cowardin et al. 1979). This classification system is hierarchical and defines five major systems: Marine, Estuarine, Riverine, Lacustrine, and Palustrine. The Palustrine system is the only type of wetland system likely to be present within the study area and is defined as including all nontidal wetlands dominated by trees, shrubs, persistent emergent herbaceous plants, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean driven-derived salts is below 0.5 percent (Cowardin et al. 1979). Cowardin wetland types likely to be encountered along the proposed ROW fall into the following four classifications:

- **Palustrine Emergent ("PEM") Wetlands.** Emergent wetlands are typically characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is usually present for most of the growing season in most years.
- **Palustrine Scrub-Shrub ("PSS") Wetlands.** Scrub-shrub wetlands are typically characterized by woody vegetation less than 20 feet tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions.
- **Palustrine Forested ("PFO") Wetlands.** Forested wetlands are usually characterized by woody vegetation that is 20 feet tall or taller. These wetlands typically possess an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer.
- **Palustrine Unconsolidated Bottom ("PUB") Wetlands**. Unconsolidated bottom wetlands include all wetland and deepwater habitats with at least 25% cover of particles smaller than stones and a vegetative cover less than 30%.

2.3 Stream Definitions

Streams are described by the USEPA as channels that are natural or artificial open areas that connect two bodies of water and may have water flowing in them continuously or periodically. They are further placed into three general stream habitat types:

- **Perennial Streams.** These channels are relatively permanent waters that typically have water throughout the year except during extreme drought. Most of the water comes from smaller upstream waters or groundwater while runoff from rainfall or other precipitation is supplemental.
- **Intermittent Streams**. These channels are relatively permanent waters that flow a considerable portion of the time but cease to flow occasionally or seasonally.
- **Ephemeral Streams**. These channels are non-relatively permanent waters, which have flowing water only during and for a short duration after precipitation events in a typical year. Ephemeral streambeds are located above the groundwater table year-round and are often described as headwater streams.

POWER used aerial imagery, orthophotography, topographic mapping, and NHD datasets to determine the location of potential streams. Stream habitat types were not identified during this desktop delineation; however designated NHD streams are likely to be intermittent or perennial channels.

2.4 Wetland and Stream Data Interpretation

To assess the probability for streams and wetlands to occur along the proposed ROW of the transmission line route, POWER biologists utilized available desktop data for this report.

2.4.1 Aerial Imagery and Topographic Mapping

The CIR aerial imagery (VBMP 2018 and 2019), current and historical aerial photography (Google Earth 1995, 2001, 2003, 2005, 2007, 2008, 2011 to 2013, 2015, 2019, and 2021; VGIN 2019), USGS topographic data (USGS 2021), LiDAR contour data (SAM 2023), and Esri world terrain base mapping (Esri 2016) were used to help determine the location and size of potential wetland and stream resources within the Project ROW. The USGS topographic and LiDAR contour lines were used to identify potential drainage areas ranging from small headwater streams to larger perennial streams. The contour lines were also used to determine areas of flat or depressed terrain where water is more likely to pool for a sufficient duration that allows development of the three required wetland parameters.

Several years of aerial imagery were reviewed for signs of potential wetland and stream resources such as apparent drainage lines, areas with changes in vegetation, and areas with apparent water ponding. CIR aerial imagery was also reviewed, which provides a higher level of contrast compared to traditional aerial photography since it renders the scene in colors not normally seen by the human eye. Open water and saturated areas are typically depicted as black or dark blue since they do not reflect much light in the infrared spectrum (Minnesota IT Services n.d.). Areas with a shift in vegetation (as observed between wetland and upland boundaries) are more apparent on CIR aerial imagery as areas with dead or stressed vegetation appear in lighter shades of red and pink, and areas with actively photosynthesizing vegetation appear bright red. Aerial imagery was also used to estimate the desktop delineated wetland's Cowardin classification. The CIR aerial imagery is used on the Desktop Wetland and Stream Delineation maps included in Attachment B.

2.4.2 National Wetland Inventory Dataset

POWER reviewed NWI mapping to help identify potential wetland areas. NWI maps were published by the USFWS and depict probable wetland areas based on stereoscopic analysis of high-altitude aerial photographs and analysis of infrared bands from remotely sensed imagery. Therefore, NWI mapping reflects conditions during the specific year and season the data was acquired and should not be considered precise, field-verified wetlands (USFWS 2024). NWI mapping was also used to estimate the desktop delineated wetland's Cowardin classification. NWI mapping is included on the Desktop Wetland and Stream Delineation maps included in Attachment B.

2.4.3 National Hydrography Dataset

The NHD (USGS 2024) was used to identify potential and known streams. The NHD is a comprehensive set of digital spatial data representing surface waters, including common features such as lakes, ponds, streams, rivers, canals, and oceans (Simley and Carswell 2009). Although not field verified, the NHD shows the general locations of streams, rivers, and open waters, and provides insight into the general location of waters (USGS 2023). NHD mapping is included on the Desktop Wetland and Stream Delineation maps included in Attachment B.

2.4.4 National Flood Hazard Layer Floodplain Dataset

The FEMA NFHL dataset was reviewed to identify floodplain boundaries. The FEMA NFHL dataset (FEMA 2010) provides digital spatial data representing floodplains associated with recorded streams (see Section 2.4.3) as well as riverine mapping. Floodplain boundaries are divided into flood insurance rate zones that are rated between 100-year and 500-year floodplains. Both 100-year and 500-year are considered areas of moderate flood hazard. All remaining areas fall under the terms of minimal flood hazard (FEMA 2010). Floodplain mapping is included on the Desktop Wetland and Stream Delineation maps included in Attachment B.

2.4.5 Soil Survey Mapping

USDA NRCS digital soil survey data for Washington County, Virginia was used to locate areas of hydric soils, which are typically found in wetlands (USDA NRCS 2006). The NRCS soil survey groups soil map units into three categories; non-hydric soil units, soil units with hydric soil inclusions, and units that contain all hydric soils. Areas that contain hydric or hydric inclusion map units have a greater probability of supporting wetlands relative to those mapped as non-hydric soil units. Hydric soil units and soil units with hydric inclusions are identified on the map sheets included in Attachment B. There is one hydric soil area mapped within the proposed ROW.

2.5 Wetland and Stream Data Evaluation

Potential streams and wetlands were assigned a probability of low, moderate, or high potential of being a regulated resource if a field verification were to be done. Tables 1 and 2 show the criteria used to assign the probability of an identified feature within the proposed ROW.

TABLE 1 WETLAND EVALUATION CRITERIA

WETLAND PROBABILITY	ASSESSMENT CRITERIA
High	Aerial imagery (color and CIR) and/or topography combined with two other indicators such as NWI wetlands, NHD streams, hydric soils, or a regulated floodplain.
Moderate	Aerial imagery (color and CIR) and/or topography combined with one other indicator such as NWI wetlands, NHD streams, hydric soils, or a regulated floodplain.
Low	Areas identified as wetland with topography and aerial photography only.

Notes: Please see Acronyms and Abbreviations.

TABLE 2 STREAM EVALUATION CRITERIA

STREAM PROBABILITY	ASSESSMENT CRITERIA
High	Streams identified with NHD and aerial imagery (color and CIR) or topography.
Moderate	Either (1) streams identified with aerial imagery (color and CIR) and topography; or (2) aerial imagery or topography combined with one other indicator, such as NWI riverine features or county or city stream data.
Low	Areas identified as streams with topography or aerial photography only.

Notes: Please see Acronyms and Abbreviations.

3.0 RESULTS AND DISCUSSION

The results of the desktop wetland and stream delineation are presented in Table 3. Figures showing the location of desktop delineated wetlands and streams in the substation expansion area and within the proposed ROW are included in Attachment B.

The desktop delineation assumed a 100-foot-wide ROW centered on the Project's proposed route to assess potential acreage of wetlands and linear feet of streams; however, the final width of the ROW may be increased depending on safety, engineering, or operational requirements. Due to limitations in aerial photography and available data, the probability and estimated number of occurrences provided below are for planning purposes and likely do not represent the full extent of potentially jurisdictional aquatic resources that may be identified during a field study.

TABLE 3 DESKTOP STREAM AND WETLAND DELINEATION RESULTS

PROBABILITY LEVEL	WATER OF THE UNITED STATES TYPE*	NUMBER OF OCCURRENCES	ACREAGE OR FEET IN RIGHT-OF-WAY
High			
	PEM	1	0.07 acres
	PSS	1	0.08 acres
	PFO	0	0.00 acres
	PUB	0	0.00 acres
	Streams	2	695 feet
Moderate			
	PEM	2	0.45 acres
	PSS	0	0.00 acres
	PFO	0	0.00 acres
	PUB	0	0.00 acres
	Streams	2	164 feet
Low			
	PEM	3	0.31 acres
	PSS	0	0.00 acres
	PFO	0	0.00 acres
	PUB	0	0.00 acres
	Streams	4	292 feet
	Wetland Total	**7**	**0.91 acres**
	Stream Total	**8**	**1,151 feet**

*Note: PEM = Palustrine Emergent; PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested; PUB = Palustrine Unconsolidated Bottom.

3.1 Proposed Route

The proposed route for the Project is approximately 1.0 mile long and crosses multiple tributaries of Wolf Creek (Attachment B). The proposed route begins near existing structure 62-83 and continues southwest toward the Abingdon Substation, where it then crosses U.S. Route 58 Alternate/U.S. Route 19 (Porterfield Highway) and ends near existing structure number 62-90. The proposed ROW for the Project contains an estimated total of seven wetlands (totaling 0.91 acres) and eight streams (totaling 1,151 linear feet). Additional details on the probability of the identified features are included below.

High Probability

Two high probability wetlands (totaling 0.15 acre) were identified within the ROW of the Proposed Route (Attachment B, Map Tile 2). Aerial photography suggests one of the high probability wetlands is a PEM and one is PSS; however, the Cowardin classifications are imprecise prior to a field verification. In addition, two high probability streams are estimated within the ROW for a total of 695 linear feet in length (Attachment B, Map Tiles 2 and 3).

Moderate Probability

Two moderate probability wetlands (totaling 0.45 acre), identified via aerial photography as a potential PEM wetland, were identified within the ROW of the Proposed Route (Attachment B, Map Tiles 2 and 3). In addition, two moderate probability streams are estimated within the ROW for a total of 164 linear feet in length (Attachment B, Map Tile 3).

Low Probability

Three low probability wetlands (totaling 0.31 acre), all potential PEM wetlands based upon aerial photography, were identified within the ROW of the Proposed Route (Attachment B, Map Tiles 1 to 3). In addition, four low probability streams are estimated within the ROW for a total of 292 linear feet in length (Attachment B, Map Tiles 1 to 3).

3.2 Substation Limits of Disturbance

No stream or wetlands were identified within the proposed Abingdon Substation limits of disturbance.

4.0 CONCLUSION

No features were identified within the proposed substation expansion area; however, the proposed route includes an estimated seven wetlands with a total combined area of 0.91 acres and crosses eight streams with a total combined linear footage of 1,115 feet. High probability streams, which include unnamed tributaries of Wolf Creek, are crossed at or adjacent to the existing crossing locations. Overall, impacts to stream and wetland features should result in minimal impacts given the proposed route will largely be rebuilt within or near to the existing 100-foot-wide ROW.

Strategic siting of transmission structures/foundations and construction access roads should minimize impacts to regulated resources. In most cases, wetlands and streams can be spanned entirely by a transmission line. Impacts to wetlands from access roads and clearing equipment can be minimized through the use of temporary timber matting. In some cases, timber mat bridges can also be used to span stream channels.

The results of this desktop wetland and stream delineation are intended solely for use as an indication of probable wetlands and streams within the ROWs and limits of disturbance associated with the Project. This analysis is designed for planning purposes only and does not represent the results of an on-the-ground, wetland and stream field delineation. Accurate determination of regulated resource boundaries is only possible through field delineations of wetlands and streams utilizing the USACE wetland delineation manual (Environmental

Laboratory 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0) (USACE 2012), and other appropriate regulatory guidance.

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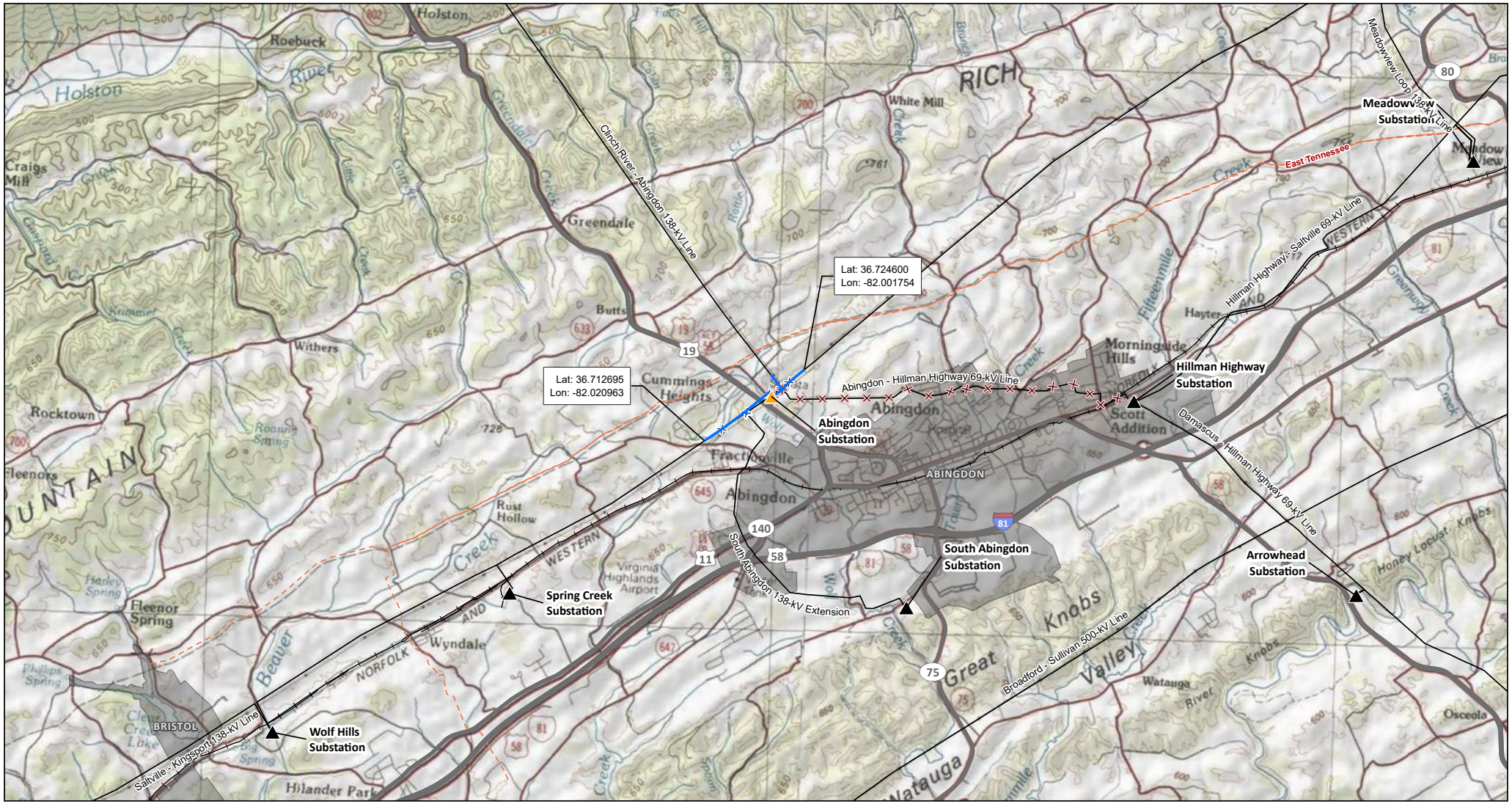
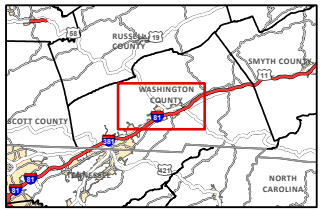
ATTACHMENT A PROJECT LOCATION MAP





- APCo Substation to be Expanded
- APCo Existing Substation
- Proposed Route
- Existing Transmission Line to be Removed as Part of Another Project
- Existing Transmission Line to be Removed
- Existing Transmission Line
- Highway
- Railroad
- Natural Gas Pipeline
- Town Boundary

Washington County, Virginia

Date: 9/23/2024; Author: ckunde; Project: 252635

0 1 2
Miles

1" = 1 miles

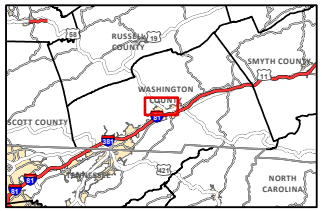
Attachment A:
Project Location Map

Desktop Stream and Wetland Delineation

APPALACHIAN POWER
An AEP Company

Abingdon 138-kV Substation Transmission Project

ATTACHMENT B DESKTOP STREAM AND WETLAND DELINEATION MAP



- Map Tile
- APCo Substation to be Expanded
- APCo Existing Substation
- Proposed Route
- Existing Transmission Line
- Existing Transmission Line to be Removed as Part of Another Project
- Existing Transmission Line to be Removed
- Highway
- Railroad
- Natural Gas Pipeline
- Wetland (NWI)
- Town Boundary

Washington County, Virginia

Date: 10/3/2024; Author: ckunde; Project: 252635

0 2,000 4,000

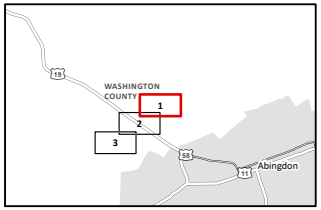
Feet

1" = 2,000'

Attachment B:
Desktop Stream and Wetland Delineation Index

APPALACHIAN POWER
An AEP Company

Abingdon 138-kV Substation Transmission Project



- Low Probability Stream
- Low Probability Wetland
- Proposed Structure
- APCo Transmission Structure to Remain
- Proposed Route
- Proposed Right-of-Way
- Existing Transmission Line
- Existing Transmission Line to be Removed
- Existing Transmission Line to be Removed as Part of Another Project (Ordinary Extension)
- Stream (NHD)
- Map Tile
- Index Contour (50')
- Intermediate Contour (10')

Washington County, Virginia

Date: 10/3/2024; Author: ckunde; Project: 252635

0 200 400

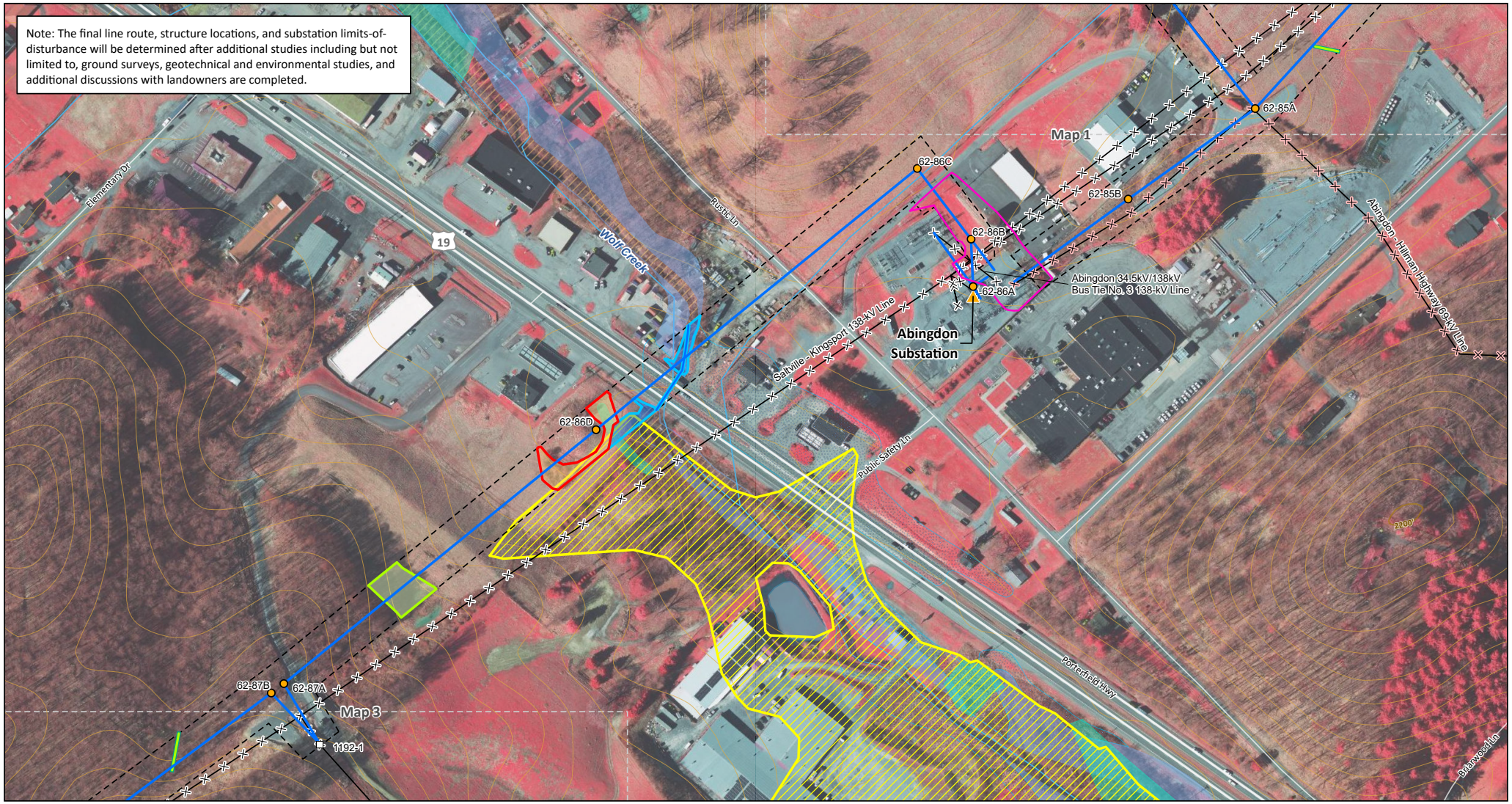
Feet

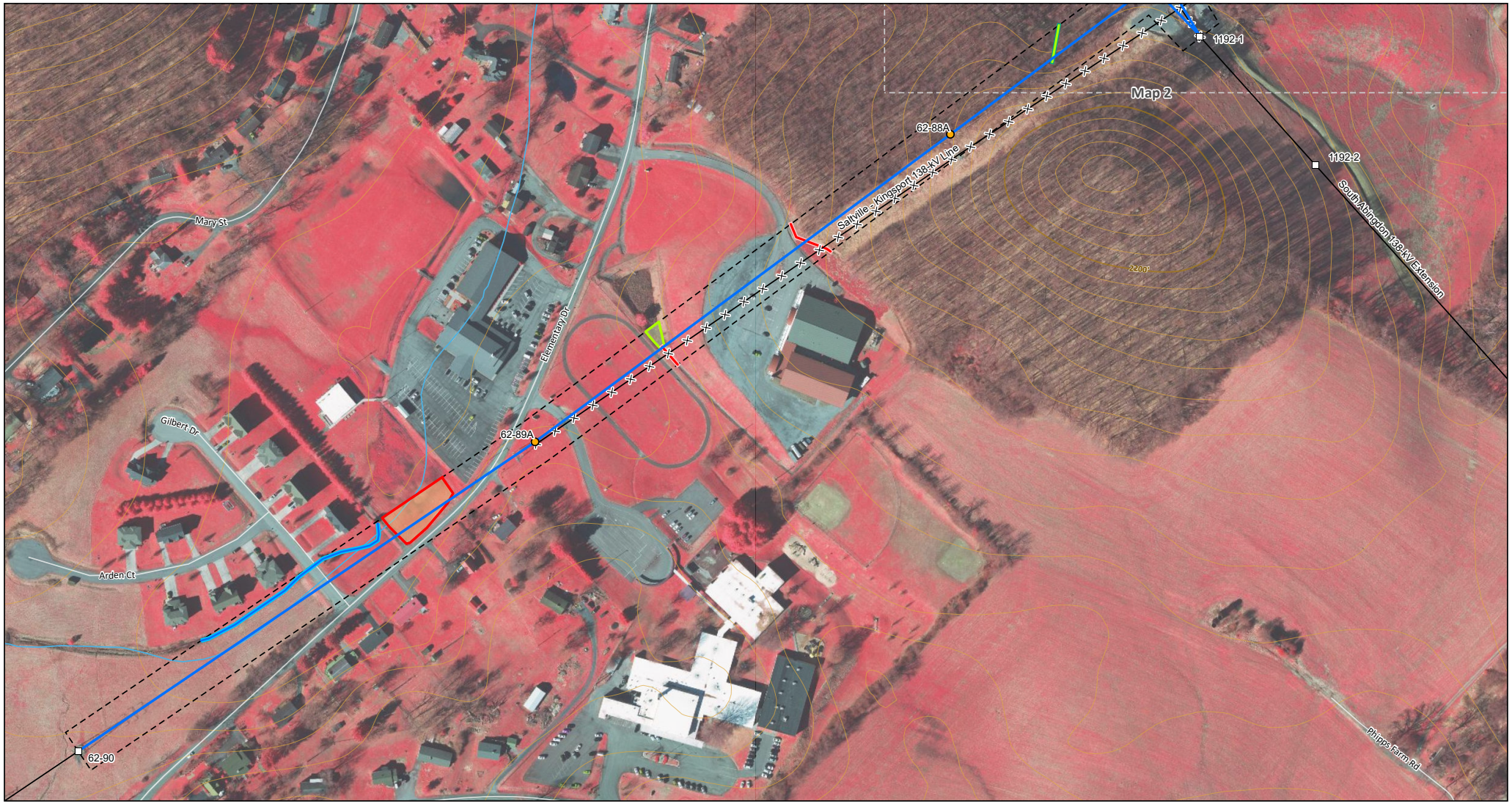
1" = 200'

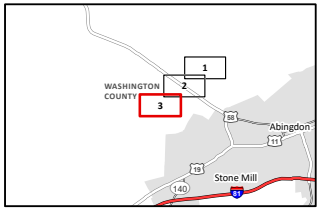
Attachment B:
Desktop Stream and Wetland Delineation
Map 1 of 3

APPALACHIAN POWER
An AEP Company

Abingdon 138-kV Substation Transmission Project


Note: The final line route, structure locations, and substation limits-of-disturbance will be determined after additional studies including but not limited to, ground surveys, geotechnical and environmental studies, and additional discussions with landowners are completed.
Map 1
Map 3
62-85A
62-85B
62-86C
62-86B
62-86A
62-86D
62-87A
62-87B
1192-1
Abingdon Substation
Abingdon 34.5kV/138kV Bus Tie No. 3 138-kV Line
Saltville - Kingsport 138-kV Line
Abingdon - Hillman Highway 69-kV Line
Wolf Creek
Elementary Dr
Rustic Ln
Public Safety Ln
Portarfield Hwy
Briarwood Ln
19
2200'
High Probability Stream
Low Probability Stream
High Probability Wetland
Low Probability Wetland
Moderate Probability Wetland
APCo Substation to be Expanded
Proposed Structure
APCo Transmission Structure to Remain
Proposed Route
Proposed Substation Limits-of-Disturbance
Proposed Right-of-Way
Existing Transmission Line
Existing Transmission Line to be Removed
Existing Transmission Line to be Removed as Part of Another Project (Ordinary Extension)
Stream (NHD)
Hydric Soils
Floodplain (500 year)
Floodplain (100 Year)
Floodway
Wetland (NWI)
Waterbody (NHD)
Map Tile
Index Contour (50')
Intermediate Contour (10')
WASHINGTON COUNTY
Abingdon
Stone Mill
Washington County, Virginia
Date: 10/3/2024; Author: ckunde; Project: 252635
0
200
400
Feet
1" = 200'
Attachment B:
Desktop Stream and Wetland Delineation
Map 2 of 3
APPALACHIAN POWER
An AEP Company
Abingdon 138-kV Substation Transmission Project





- High Probability Stream
- Low Probability Stream
- Moderate Probability Stream
- Low Probability Wetland
- Moderate Probability Wetland
- Proposed Structure
- APCo Transmission Structure to Remain
- Proposed Route
- Proposed Right-of-Way
- Existing Transmission Line
- Existing Transmission Line to be Removed
- Stream (NHD)
- Map Tile
- Index Contour (50')
- Intermediate Contour (10')

Washington County, Virginia

Date: 10/3/2024; Author: ckunde; Project: 252635

0 200 400

Feet

1" = 200'

Attachment B:
Desktop Stream and Wetland Delineation
Map 3 of 3

APPALACHIAN POWER
An AEP Company

Abingdon 138-kV Substation Transmission Project

ATTACHMENT 2.F.1: USFWS IPAC REPORT

IPaC **U.S. Fish & Wildlife Service**

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

Washington County, Virginia

Local office

Virginia Ecological Services Field Office

(804) 693-6694

6669 Short Lane

Gloucester, VA 23061-4410

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[1] 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[2]).

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.

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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. IPaC only shows species that are regulated by USFWS (see FAQ).

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
Gray Bat *Myotis grisescens* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Virginia Big-eared Bat *Corynorhinus (=Plecotus) townsendii virginianus* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8369	Endangered

Clams

NAME	STATUS
Tennessee Pigtoe *Pleuronaia barnesiana* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9887	Proposed Endangered

Insects

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

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.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Aug 31

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

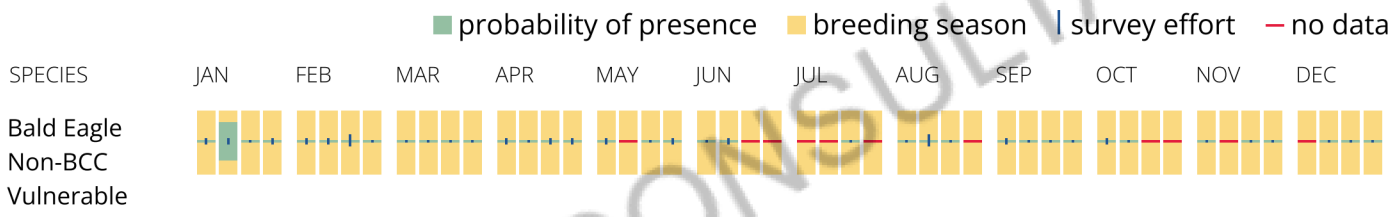
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

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



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence 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). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

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

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

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

What 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. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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

list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Aug 31
Black-capped Chickadee *Poecile atricapillus practicus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 10 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read

"Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

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

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

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

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

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

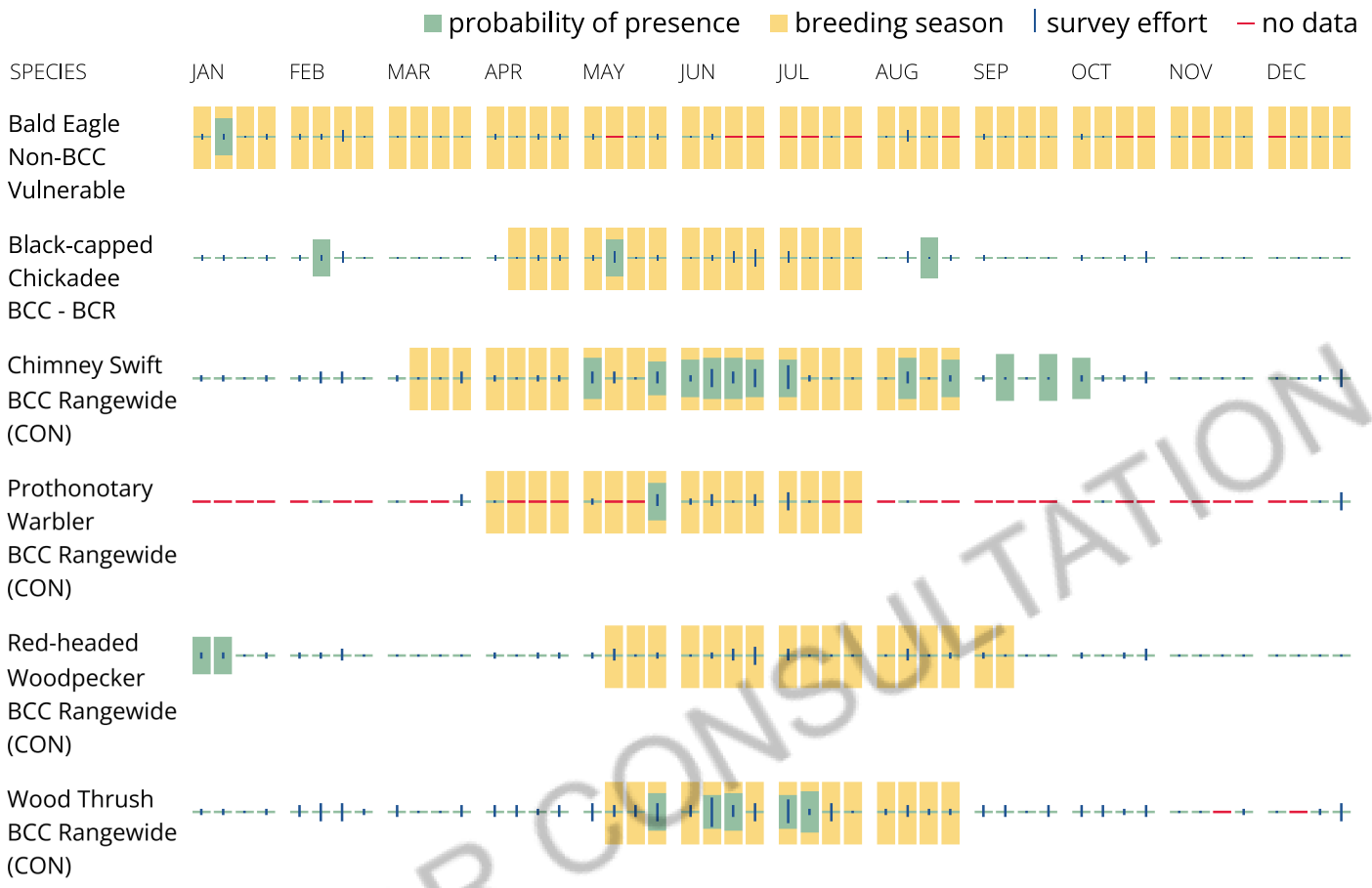
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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



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

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

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

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

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid

cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

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

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

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

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

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

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

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

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

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

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to

you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

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

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

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

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 (NWI)

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

RIVERINE

R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

ATTACHMENT 2.H.1: VDHR PRE-APPLICATION ANALYSIS FOR CULTURAL RESOURCES

REPORT >

SCC Pre-Application Analysis of Cultural Resources For the Abingdon 138-kV Substation Transmission Project

LOCATION > Washington County, Virginia

DATE> AUGUST 2024

PREPARED FOR >

POWER Engineers, Inc.

PREPARED BY >

Dutton + Associates, LLC

PROJECT REVIEW # >

Dutton + Associates

CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

SCC Pre-Application Analysis of Cultural Resources
For the Abingdon 138-kV Substation Transmission Project

Washington County, Virginia

***PREPARED FOR*:**
POWER ENGINEERS, INC.
6641 West Broad Street
Suite 405
Richmond, Virginia 23230

***PREPARED BY*:**
DUTTON + ASSOCIATES, LLC
1115 Crowder Drive
Midlothian, Virginia 23236
804-897-1960

Principal Investigator/
Architectural Historian:
Robert J. Taylor, Jr. M.A.

August 2024

ABSTRACT

In August 2024, Dutton + Associates, LLC (D+A) conducted a Pre-Application Analysis (analysis) of cultural resources for the Abingdon 138-kV Substation Transmission Project (the Project) in Washington County, Virginia. The analysis was performed for POWER Engineers, on behalf of Appalachian Power Company ("Appalachian") in support of a Virginia 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).

Appalachian is proposing the Abingdon 138-kV Substation Transmission Project to upgrade and install new equipment at Appalachian's existing Abingdon Substation on Rustic Lane to address thermal and voltage violations identified in PJM Interconnection's 2022 Regional Transmission Expansion Plan Window. Abingdon Substation will be expanded on Appalachian's existing property to accommodate the upgrades and an approximately one-mile-long portion of the existing Saltville – Kingsport 138-kV Transmission Line will be rebuilt to terminate into the substation. The Project involves rebuilding and realignment of the electric transmission line between the existing structure 62-83 and the Abingdon Substation and the Abingdon Substation and existing structure 62-90. The Project will largely be built within new right-of-way (ROW) leading into and out of the existing Abingdon Substation.

The existing line consists of lattice towers that range from approximately 96.5 to 117.5 feet tall and will be rebuilt using a combination of steel lattice towers and monopoles that will range from 86 to 145 feet, however, all structure locations and heights are subject to change following final engineering.

The background research conducted as part of this analysis was conducted in accordance with VDHR guidance and designed to identify all previously recorded National Historic Landmarks (NHL) located within 1.5 miles of the Project or closer, all historic properties listed in the National Register of Historic Places (NRHP) or battlefields located within 1.0 mile of the Project or closer, all historic properties considered eligible for listing in the NRHP located within 0.5 mile of the Project or closer, and all archaeological sites located directly within or adjacent to the Project ROW. Historic properties include architectural and archaeological (terrestrial and underwater) resources, historic and cultural landscapes, battlefields, and historic districts. For each architectural property within the defined tiers, a review of existing documentation and a field reconnaissance was undertaken to assess each property's significant character-defining features, as well as the character of its current setting. Following identification of historic properties, D+A assessed the potential for impacts to any identified properties as a result of the proposed Project. Specific attention was given to determining whether or not construction related to the Project could introduce new visual elements into the property's viewshed or directly impact the property through construction, which would either directly or indirectly alter those qualities or

characteristics that qualify the historic property for listing in the NRHP. Archaeological sites were not subject to field inspection or assessment of impacts as part of this effort.

With regards to architectural resources, there are no (0) properties designated an NHL located within 1.5 miles of the Project or closer; no (0) properties listed in the NRHP, no historic landscapes, and no battlefields located within 1.0 mile of the Project or closer; and no (0) properties that have been determined eligible for listing in the NRHP within 0.5 mile of the Project or closer. ***As such, there are no historic properties to be considered as part of this pre-application analysis and the Project will have No Impact on any previously recorded NHLs, NRHP-listed, or NRHP-eligible architectural resources within the VDHR-defined buffered study tiers.***

With regard to archaeology, there are no (0) previously recorded archaeological sites located within or directly adjacent to the Project ROW. ***As such, the Project will have No Impact on any known or previously recorded archaeological sites located within the Project ROW.***

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1. INTRODUCTION

In August 2024, Dutton + Associates, LLC (D+A) conducted a Pre-Application Analysis (analysis) of cultural resources for the Abingdon 138-kV Substation Transmission Project (the Project) in Washington County, Virginia. The Project will upgrade and install new equipment at Appalachian Power Company's ("Appalachian") existing Abingdon Substation on Rustic Lane to address thermal and voltage violations identified in PJM Interconnection's 2022 Regional Transmission Expansion Plan Window. Abingdon Substation will be expanded on Appalachian's existing property to accommodate the upgrades and an approximately one-mile-long portion of the existing Saltville – Kingsport 138-kV Transmission Line will be rebuilt to terminate into the substation. The analysis was performed for POWER Engineers, on behalf of Appalachian in support of a Virginia 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, properties listed on the National Register of Historic Places (NRHP), battlefields, and historic landscapes located within a 1.0 mile buffer, properties previously determined eligible for listing in the NRHP located within a 0.5 mile buffer area, and previously identified archaeological resources directly within or adjacent to the project right-of-way (ROW). 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. The analysis was performed with preliminary Project data available at the time of the effort and may be subject to change following final engineering.

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 analysis 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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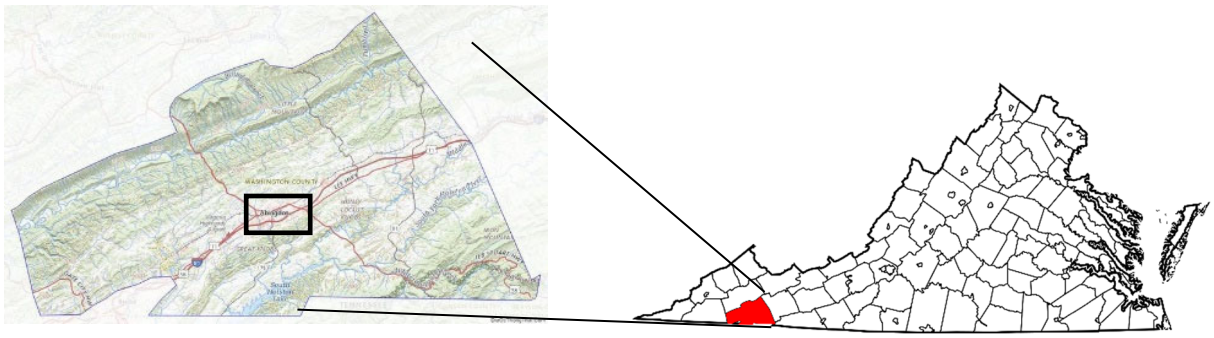
2. PROJECT DESCRIPTION

Appalachian Power Company (Appalachian or the Company) is proposing the Abingdon 138-kV Substation Transmission Project to upgrade and install new equipment at Appalachian's existing Abingdon Substation on Rustic Lane to address thermal and voltage violations identified in PJM Interconnection's 2022 Regional Transmission Expansion Plan Window. Abingdon Substation will be expanded on Appalachian's existing property to accommodate the upgrades and an approximately one-mile-long portion of the existing Saltville – Kingsport 138-kV Transmission Line will be rebuilt to terminate into the substation. The Project involves rebuilding and realignment of the electric transmission line between the existing structure 62-83 and the Abingdon Substation and the Abingdon Substation and existing structure 62-90. The Project will largely be built within new right-of-way (ROW) leading into and out of the existing Abingdon Substation (**Figure 2-1 and Figure 2-2**).

The existing line consists of lattice towers that range from approximately 96.5 to 117.5 feet tall and will be rebuilt using a combination of steel lattice towers and monopoles that will range from 86 to 145 feet, however, all structure locations and heights are subject to change following final engineering. Representative typical structure types are illustrated in **Figure 2-3**.

Saltville to Wolf Hills

Washington and
Smyth Counties



Project Corridor

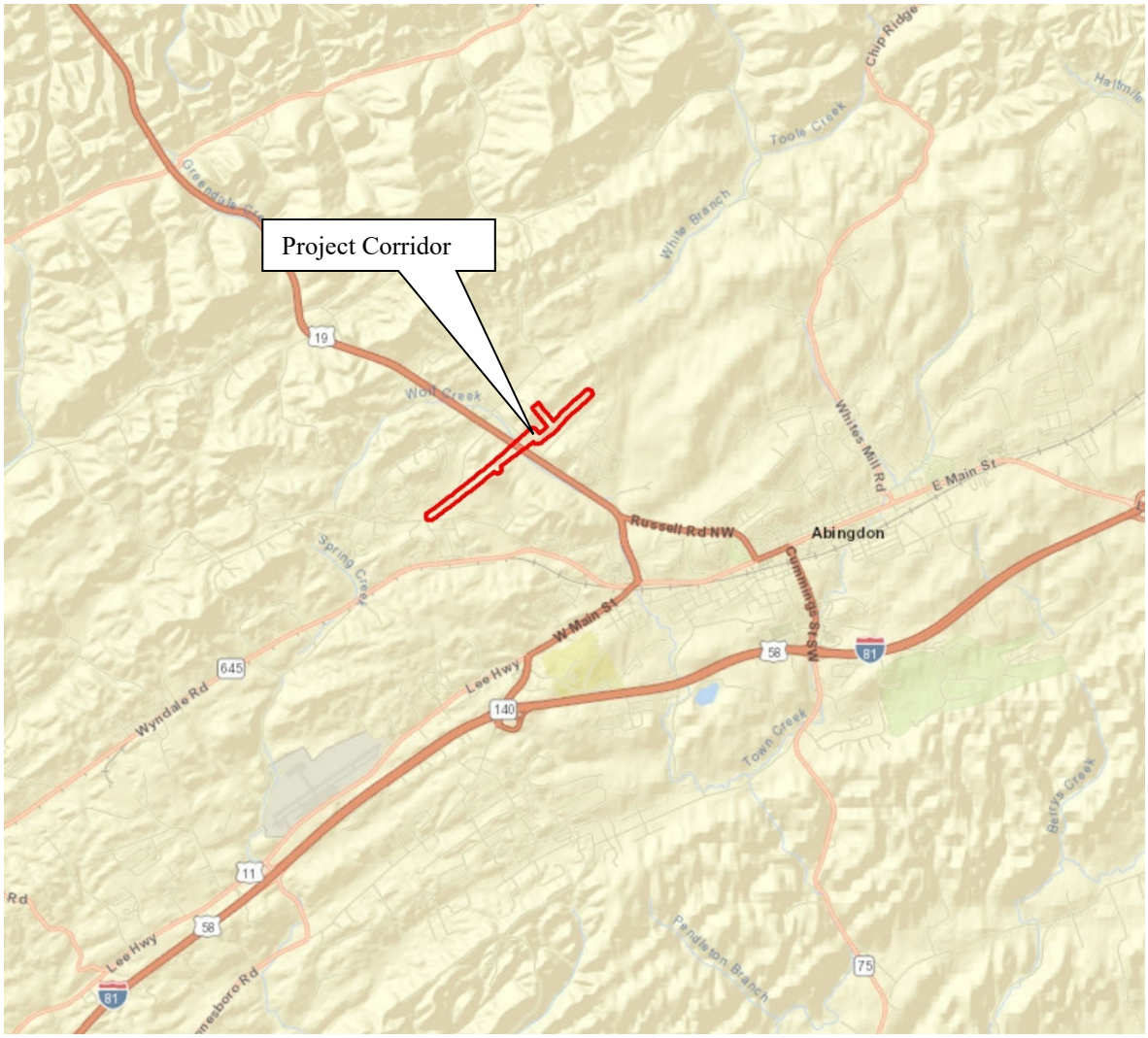


Figure 2-1: General Location of the Project.

Figure 2-2: Overview map of the Project alignment.

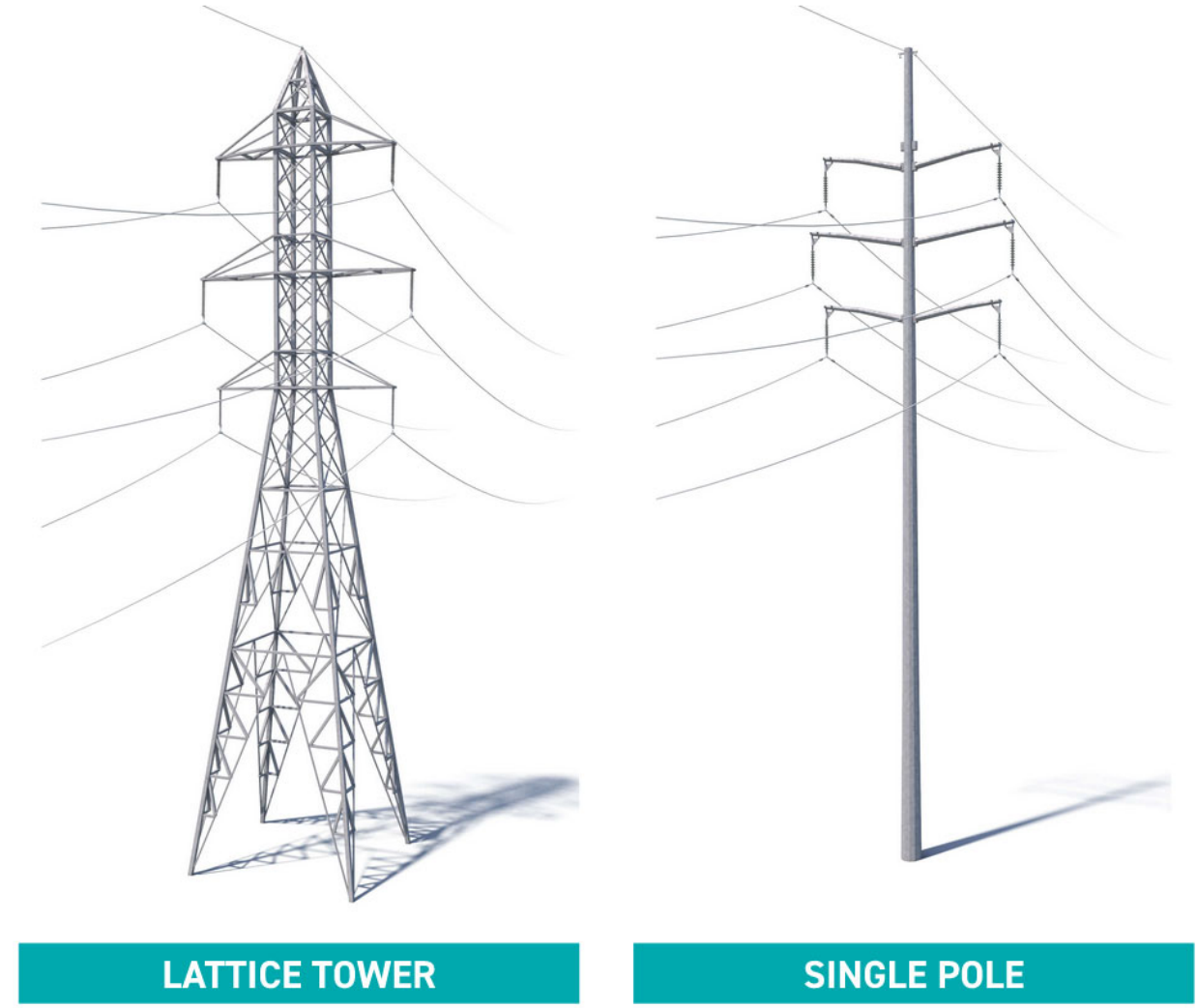


Figure 2-3: Representative Project structure types. Source: Appalachian Power.

3. RESEARCH DESIGN

The intent of this analysis was to identify all known historic properties within the vicinity of the Project in order to assess them for potential impacts. 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 and current aerial photography was conducted.

ARCHIVAL RESEARCH

In August 2024, 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 Project, all historic properties listed in the NRHP, battlefields, and historic landscapes located within 1.0 mile of the Project, all historic properties previously determined eligible for listing in the NRHP located within 0.5 mile of the Project, and all archaeological properties located directly within or adjacent to the Project ROW.

FIELD RECONNAISSANCE

For any historic properties identified within the study tiers during the archival search, a field reconnaissance would be conducted, including visual inspection of previously recorded architectural properties located within the defined buffer tiers. Visual inspection includes digital photo documentation of each property's existing conditions including its setting and views toward the Project. Photographs would be taken of primary resource elevations, general setting, and existing viewsheds. All photographs would be taken from public right-of-way or where property access was granted. Archaeological sites were not subject to field investigation or testing 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 Project. Assessment of impacts was conducted through a combination of digital photography, and review of topography and aerial photography.

Archaeological assessment was limited to desktop review of project improvements in relation to previously delineated site boundaries, however, existing conditions of sites remain unknown at this level of investigation.

When assessing impacts, D+A considered those qualities and characteristics that qualify the property for listing and whether the project has the potential to alter or diminish the integrity of the property and its associated significance. Specific attention was given to determining whether or not the proposed project would introduce new visual elements into a property's viewshed, which would either directly or indirectly alter those qualities or characteristics that qualify the historic property for listing in the NRHP. Identified impacts were characterized as severe, moderate, minimal, or none in accordance with the following guidance:

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.

REPORT PREPARATION

The results of the archival research, field inspection, and analysis were synthesized and summarized in a summary report accompanied by maps, illustrations, and photographs as appropriate. All research material and documentation generated 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 study area buffers as defined in the *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)*. This section of the Analysis includes lists, maps, and descriptive data on all previously conducted cultural resource surveys, and previously recorded architectural resources and archaeological sites according to the VDHR archives and VCRIS database.

PREVIOUSLY SURVEYED AREAS

VDHR and VCRIS records indicate that there have been two (2) prior Phase I cultural resource surveys conducted within 1.0 mile of the Project, none of which included any portions of the Project ROW. The two surveys within 1.0 mile of the Project were both conducted as part of utility projects and therefore included linear corridors. These surveys are at minimum archaeological in nature, although may include architectural resources as well. A list of previously conducted surveys within one mile are included in **Table 4-1** and illustrated in **Figure 4-1**.

Table 4-1: Previously conducted cultural resource surveys within the Project ROW. Source: VDHR.

VDHR Survey #	Title	Author	Date
WG-081	Phase I Cultural Resources Report for East Tennessee Natural Gas Company's Patriot Project Mainline Expansion in Washington, Smyth and Wythe Counties, Virginia	EA	2001
WG-091	Phase I Cultural Resources Report, East Tennessee Natural Gas Company Gateway Expansion Project, Washington and Smyth Counties, Virginia	EA	2001

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

ARCHITECTURAL RESOURCES

Review of the VDHR VCRIS inventory records revealed a total of fifty-two (52) previously recorded architectural resources are located within 1.5 miles of the Project. Of these, there are no (0) properties designated an NHL located within 1.5 miles of the Project or closer; no (0) properties listed in the NRHP, no historic landscapes, and no battlefields located within 1.0 mile of the Project or closer; and no (0) properties that have been determined eligible for listing in the NRHP within 0.5 mile of the Project or closer.

Table 4-2 lists considered architectural resources within their respective buffered tiers. A map of all previously recorded architectural resources within 1.5 miles of the Project is included as **Figure 4-2** and a map of NHLs, NRHP-listed, and NRHP-Eligible resources are included as **Figure 4-3**.

Table 4-2: Considered architectural resources within their respective tiered buffer zones for the Project

Buffer(miles)	Considered Resources	VDHR #	Description
1.5	National Historic Landmarks	None	None
1.0	National Historic Landmarks	None	None
	National Register- Listed	None	None
	Battlefields	None	None
	Historic Landscapes	None	None
0.5	National Historic Landmarks	None	None
	National Register- Listed	None	None
	Battlefields	None	None
	Historic Landscapes	None	None
	National Register-Eligible	None	None
0.0 (ROW)	National Historic Landmarks	None	None
	National Register - Listed	None	None
	Battlefields	None	None
	Historic Landscapes	None	None
	National Register-Eligible	None	None

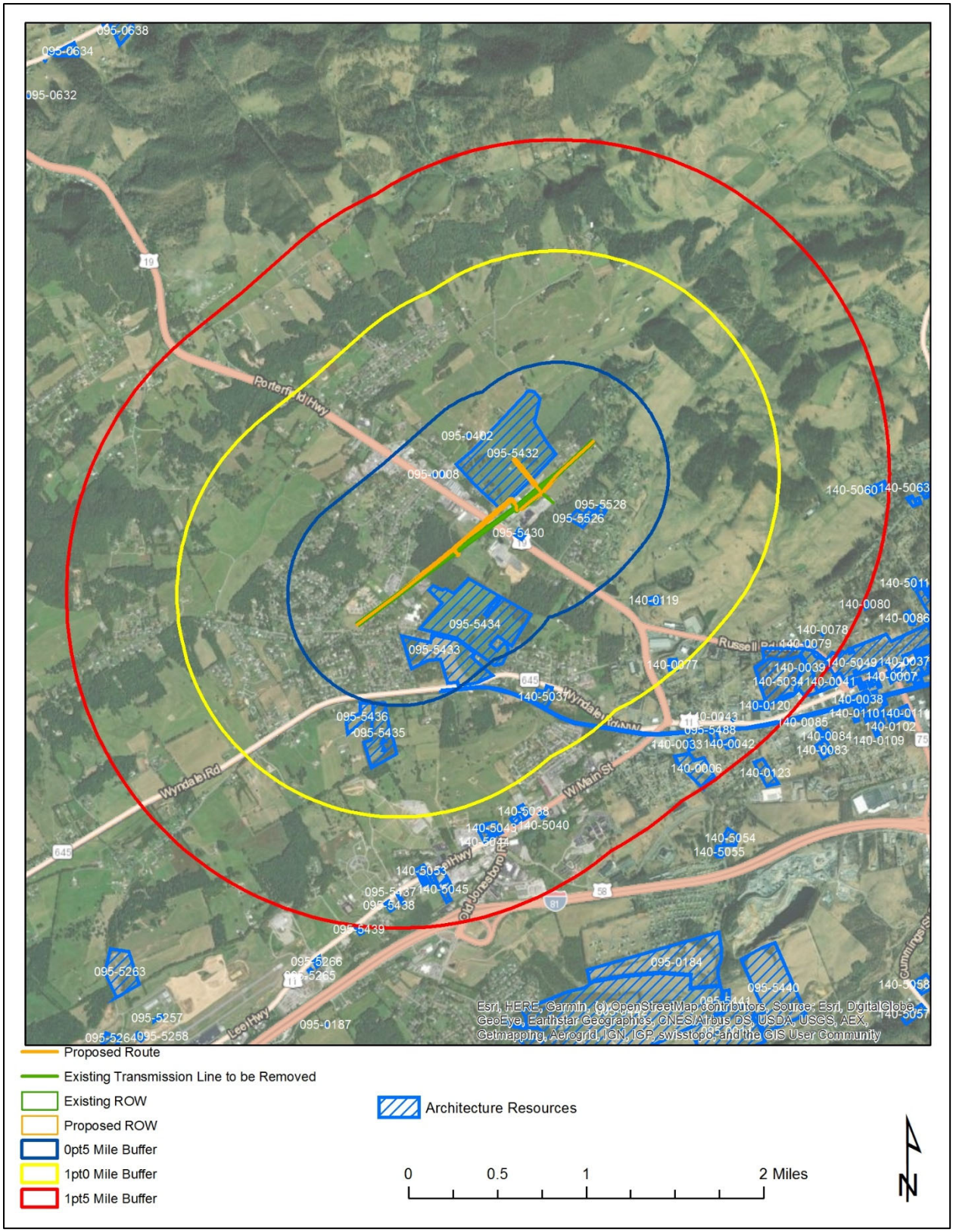


Figure 4-2: All previously recorded architectural resources within 1.5 mile of the Project. Source: VCRIS

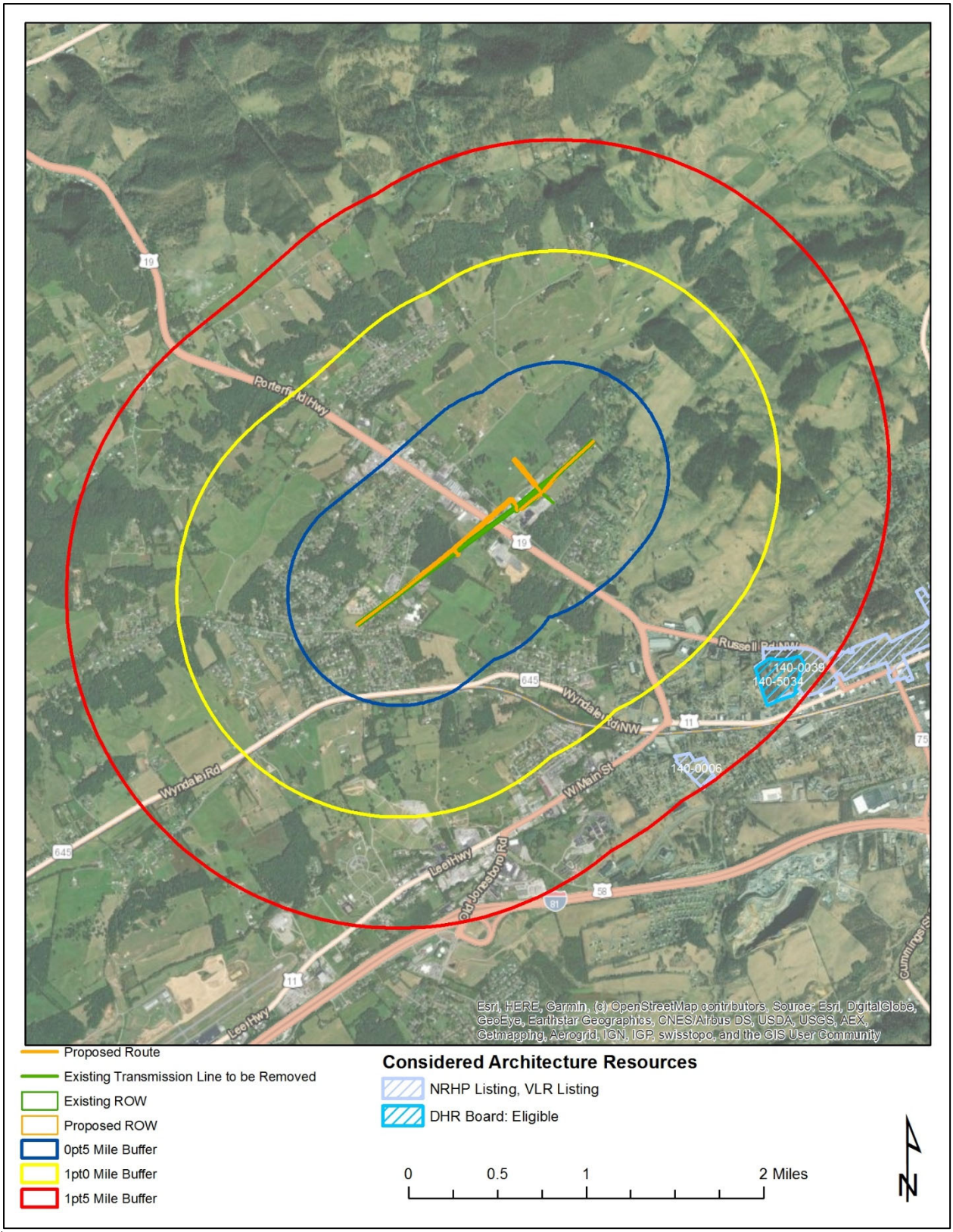


Figure 4-3: NHLs, NRHP-listed, and eligible architectural resources within 1.5 miles of the Project. Source: VCRIS

ARCHAEOLOGICAL SITES

Review of the VDHR VCRIS records reveals there are eleven (11) previously recorded archaeological sites within 1.0 mile of the Project. The previous sites within one mile include prehistoric camps, villages, and lithic scatters; as well as historic period. Of the sites within one mile, four (4) have been determined potentially eligible for listing in the NRHP by the VDHR, one (1) has been determined not eligible, and the rest have not been formally evaluated. None (0) of the sites are located within or directly adjacent to the Project ROW.

Table 4-3 lists all previously recorded archaeological resources located within 1.0 mile of the Project. **Figure 4-4** and **Figure 4-5** illustrates the locations of previously recorded sites within 1.0 mile of the Project.

Table 4-3: Previously recorded archaeological resources Located within 1.0 mile of the Project. Bold font denotes resource is considered eligible or potentially eligible for listing in the NRHP.

VDHR #	Site Type	Temporal Association	NRHP Status
44WG0123	**Camp**	**Early Archaic Period (8500 - 6501 B.C.E), Middle Archaic Period (6500 - 3001 B.C.E), Late Archaic Period (3000 - 1201 B.C.E), Early Woodland (1200 B.C.E - 299 C.E), Middle Woodland (300 - 999 C.E), Late Woodland (1000 - 1606)**	**DHR Staff: Potentially Eligible**
44WG0124	Camp	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44WG0169	No Data	Woodland (1200 B.C. - 1606 A.D.)	Not Evaluated
44WG0170	No Data	Archaic (8500 - 1201 B.C.)	Not Evaluated
44WG0293	Other	18th Century (1700 - 1799)	Not Evaluated
44WG0309	Village/Town	Woodland (1200 B.C. - 1606 A.D.)	Not Evaluated
44WG0310	No Data	Indeterminate	Not Evaluated
44WG0535	**No Data**	**No Data**	**DHR Staff: Potentially Eligible**
44WG0536	No Data	No Data	DHR Staff: Not Eligible
44WG0537	**No Data**	**No Data**	**DHR Staff: Potentially Eligible**
44WG0538	**No Data**	**No Data**	**DHR Staff: Potentially Eligible**

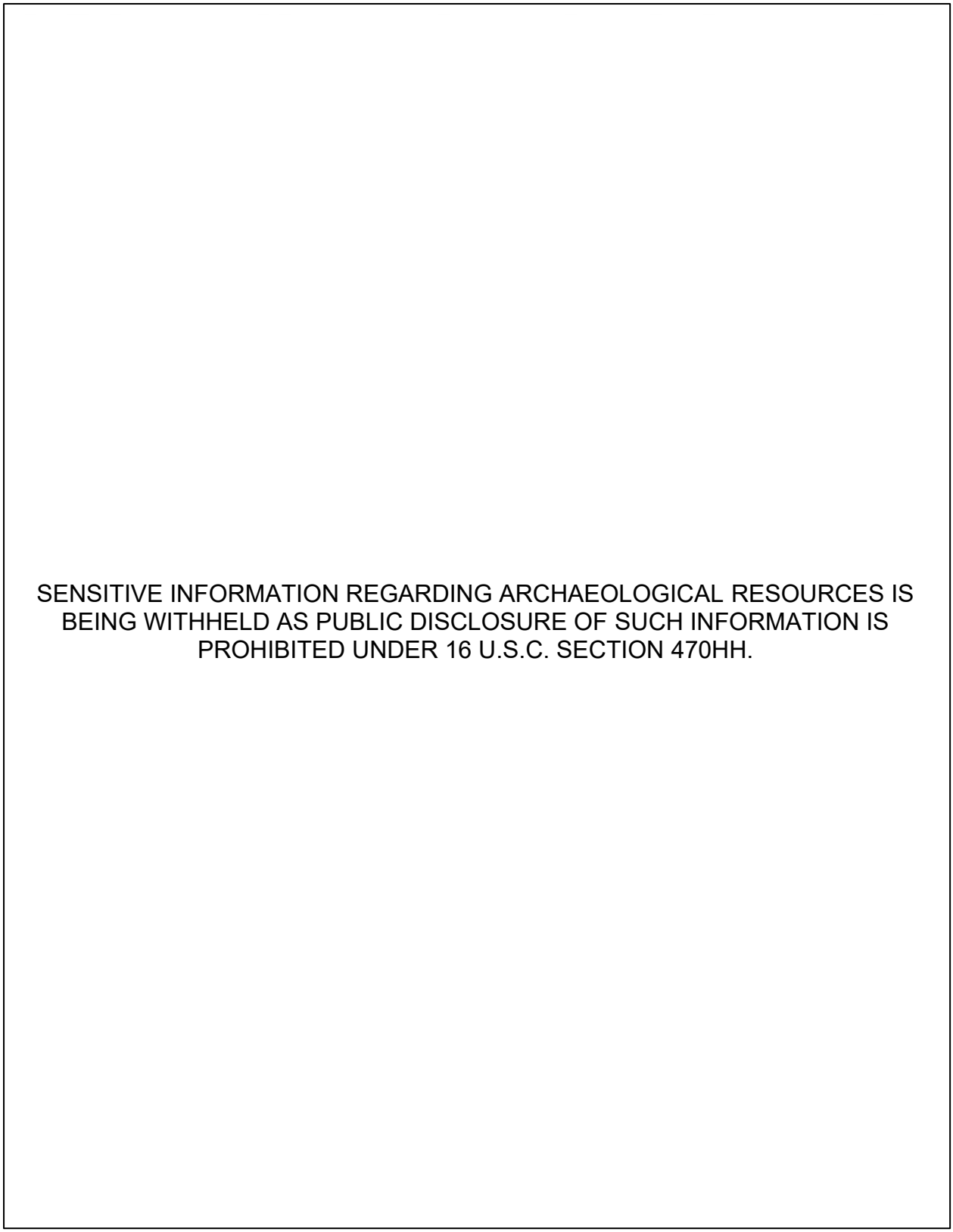


Figure 4-4: Previously recorded archaeological resources Located within 1.0 mile of the Project. Source: VCRIS

Figure 4-5: Detail of previously recorded archaeological resources in the vicinity of the Project ROW. 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 that no portions of any noted battlefield are located within 1.0 mile of the Project.

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5. RESULTS OF FIELD RECONNAISSANCE

The literature review and archives search revealed there are no (0) properties designated an NHL located within 1.5 miles of the Project or closer; no (0) properties listed in the NRHP, no historic landscapes, and no battlefields located within 1.0 mile of the Project or closer; and no (0) properties that have been determined eligible for listing in the NRHP within 0.5 mile of the Project or closer. As such, there are no historic properties to be considered as part of this pre-application analysis and no field investigations were conducted.

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6. ARCHAEOLOGICAL ASSESSMENT

The literature review and archives search revealed there are no (0) previously recorded archaeological sites located within or directly adjacent to the Project ROW. As such, there are no previously recorded archaeological sites to be considered as part of this pre-application analysis.

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7. SUMMARY OF POTENTIAL IMPACTS

As part of this pre-application analysis of cultural resources for the Abingdon 138-kV Substation Transmission Project, potential impacts to previously recorded historic properties that meet criteria for consideration 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 lines, direct impacts typically are associated with ground disturbance resulting from ROW clearing and structure construction. Indirect impacts typically are associated with the introduction of new visual elements or changes to the physical features of a property's setting or viewshed. According to VDHR guidance, impacts are characterized as such:

- **None** – Project is not visible from the property.
- **Minimal** – Occur within viewsheds that have existing transmission lines, locations where there will only be a minor change in tower height, and/or views that have been partially obstructed by intervening topography and vegetation.
- **Moderate** – Include viewsheds with expansive views of the transmission line, more dramatic changes in the line and tower height, and/or an overall increase in the visibility of the route from the historic properties.
- **Severe** – Occur within viewsheds that do not have existing transmission lines and where the views are primarily unobstructed, locations where there will be a dramatic increase in tower visibility due to the close proximity of the route to historic properties, and viewsheds where the visual introduction of the transmission line is a significant change in the setting of the historic properties.

With regards to architectural resources, there are no (0) properties designated an NHL located within 1.5 miles of the Project or closer; no (0) properties listed in the NRHP, no historic landscapes, and no battlefields located within 1.0 mile of the Project or closer; and no (0) properties that have been determined eligible for listing in the NRHP within 0.5 mile of the Project or closer. ***As such, there are no historic properties to be considered as part of this pre-application analysis and the Project will have No Impact on any previously recorded NHLs, NRHP-listed, or NRHP-eligible architectural resources within the VDHR-defined buffered study tiers in the "Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia."***

With regard to archaeology, there are no (0) previously recorded archaeological sites located within or directly adjacent to the Project ROW. ***As such, the Project will have No Impact on any known or previously recorded archaeological sites located within the Project ROW.***

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8. 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
2024 Virginia Cultural Resource Information System (VCRIS) database and GIS server.

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APPENDIX A: RESUMES

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ROBERT J. TAYLOR, JR
Principal Investigator
Senior Architectural Historian

Dutton + Associates
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

Education

Master of Arts, 2009
Historic Preservation
Savannah College of Art and Design
Savannah, Georgia

Bachelor of Arts, 2005
Historic Preservation
University of Mary Washington
Fredericksburg, Virginia

Awards

Eagle Scout, 2001

Mr. Taylor holds a B.A. in Historic Preservation from University of Mary Washington and a M.A. in Historic Preservation from Savannah College of Art and Design. He has over 15 years of Cultural Resource Management Experience and has taken part in projects in Virginia and throughout the East Coast.

His experience in Cultural Resource Management includes working on both Architectural and Archaeological projects while participating in all phases of compliance from project initiation and development to completion. His work includes conducting field surveys, researching and documenting historic resources, writing survey reports, preparing *NRHP* evaluations and applications for individual resources and historic districts, compiling HABS/HAER documentation packages, and assisting with cultural resource consultation and compliance. He has a thorough understanding of the laws and regulations that govern cultural resources and has assisted with a number of Cultural Resource Management Plans, Programmatic Agreements, and Memorandum of Agreements.

As Principal Investigator and Senior Architectural Historian for Dutton + Associates, Mr. Taylor manages and conducts all aspects of historic and architectural resource projects and studies.

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Dutton + Associates
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

ROBERT J. TAYLOR, JR
Principal Investigator
Senior Architectural Historian

Professional Experience

Dutton + Associates, LLC, Principal Investigator, Richmond, Virginia, March 2009- present. Manages cultural resource projects, oversees architectural history team, conducts field survey and investigations, assembles architectural resource documentation, authors cultural resource survey reports, prepares NRHP nominations, prepares HABS/HAER documentation, provides regulatory and compliance consultation.

Thomas Jefferson Monticello Foundation, Field Archaeologist, Charlottesville, Virginia, Winter 2008- 2009. Conducted archaeological testing, assisted with site research, performed lab work

Janus Research, Inc, Architectural Historian, Tampa, Florida, August 2005- May 2008. Conducted field surveys, Prepared NRHP and HABS/HAER documentation packages, authored Cultural Resource Assessment Survey Reports

Example Projects and Publications

Cultural Resource Management Plans
Regional Integrated Cultural Resource Management Plan for Naval Installations in Hampton Roads, Virginia
Programmatic Agreement amongst NASA, the VASHPO, and ACHP for the Management of Facilities, Infrastructure, and Sites at the NASA Langley Research Center, Hampton, Virginia

Cultural Resource Survey and Compliance Reports
Phase I Cultural Resource Survey of the Southern Virginia Solar Center, Pittsylvania County, Virginia
Phase I Cultural Resource of the Gordonsville-Remington 500 kV Transmission Line Rebuild Project, Orange, Fauquier, and Culpeper County, Virginia
NRHP Evaluations of Two One Room School Houses and a Farmstead in Perrysburg Township, Ohio
Intensive-Level Architectural Survey of the Vice Admiral James H. Doyle Jr, Combat System Engineering Development Site (CSEDS), Moorestown, New Jersey
Review and Evaluation of the Adaptive Rehabilitation of Quarters D&E and G&H at the Norfolk Naval Shipyard, Portsmouth, Virginia
Cultural Resource Assessment Survey (CRAS) of the I-395 Advance Acquisition #2 in Miami-Dade County, Florida
CRAS of the I-4/Crosstown Connector Interchange Design in Hillsborough County, Florida

NRHP Nominations
Hermitage Road Historic District, Richmond, Virginia
Old Wythe Historic District, Hampton, Virginia
NASA LaRC Historic District, Hampton, Virginia
Sebrell Rural Historic District, Southampton County, Virginia
Palmetto Beach Historic District, Tampa, Florida
Rosemere Historic District, Orlando, Florida

Historic American Buildings Survey (HABS) Packages
NASA Low Turbulence Pressure Tunnel, LaRC, Hampton VA, HABS # VA-118-H
NASA Aircraft Landing Dynamics Facility, LaRC, Hampton, VA, HABS # unassigned
1st Street Bridge update package, Los Angeles, CA HAER # CA-175
Faith Temple Missionary Baptist Church, Tampa, FL, HABS # FL-542
Building 64, Melville Net and Fuel Depot, Naval Station Newport, RI, RIHRA # PORT-0004

Technical and Research Papers
"New Use for an Old Gas Station: Rehabilitation Plan and Feasibility Assessment for the Fry's Spring Service Station in Charlottesville, Virginia"
"Historic Structure Report for the Edward Valentine House (Redland Club Building) in Charlottesville, Virginia"
"Historic Linear Resources: Challenges and the Practical Applicability of NRHP Criteria"
"'A Country Doctor for Forty Years' A Historic Structure Report for the Dr. J.E. Wilson House in Haywood County, North Carolina"

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