

APPALACHIAN POWER COMPANY
BEFORE THE
VIRGINIA STATE CORPORATION COMMISSION
CASE NO. PUR-2022-00163

APPLICATION FOR APPROVAL AND CERTIFICATION OF
ELECTRICAL TRANSMISSION LINE

Reusens to Roanoke 138 kV Rebuild Project

VOLUME 2 OF 2

Siting Study and VDEQ Supplement

November 2022

VOLUME 2 – Siting Study and VDEQ Supplement

REUSENS TO ROANOKE 138 KV REBUILD PROJECT SITING STUDY

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Siting Study
for
Reusens to Roanoke 138 kV Rebuild Project
SCC Case No. PUR-2022-00163

Prepared for:



Prepared by:



November 2022

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KEY TERMINOLOGY

Constraints	Specific areas that should be avoided to the extent reasonably practical during the route development and site selection process.
Conductor Zone	The area within the right-of-way (“ROW”) where transmission line conductors can reasonably be expected to move under typical wind conditions plus necessary electrical clearances.
Deviation	A minor adjustment to the existing route where no other alternative is considered.
Encroachment	Any structure or activity within the ROW that could interfere with the safe, reliable operation of transmission facilities is called an encroachment and is prohibited under the terms of an easement.
Endpoints	The project starting and ending point(s) (the “Project Endpoints”), which may include substations, switch stations, tap points, or other locations defined by the Company’s planners and engineers.
Land Use	Describes the human use of the land and activities at a given location such as agricultural, residential, industrial, mining, commercial, and recreational uses. It differs from land cover which only describes the physical characteristics (summarized from EPA.gov).
Opportunity Feature(s)	Areas or existing linear features along which the transmission line may have less disruption to area land uses and the natural and cultural environment.
Project	The proposed transmission facilities included in the siting study.
Proposed Route	The alignment on which the Siting Team proposes to construct a transmission line. The Proposed Route (1) reasonably minimizes adverse impacts on area land uses and the natural and cultural environment; (2) minimizes special design requirements and unreasonable costs; and (3) can be constructed and operated in a safe, timely, and reliable manner.
Rebuild Segments	Partial alignments between two points that use the existing ROW.
Reroute Segments	Partial alignments between two points that are outside of the existing ROW given the presence of constraints.
Siting Team	A multidisciplinary team of experts in transmission line routing, environmental impact assessment, impact mitigation, engineering, and construction management.

Study Area	The territory in which line route alternatives can be sited to feasibly meet the Project’s functional requirements and, at the same time, minimize environmental impacts and Project costs.
Study Segments	Study Segments are partial alignments that when combined form a complete route.
Substation	Substations or stations are facilities that transform bulk electric voltage down to distribution levels and/or provide protection and controls for the transmission electric grid. Typical equipment includes switches, circuit breakers, buses, and transformers.
Transmission Line	An electric line that operates at 69 kilovolts and/or above and has the purpose of moving power from a generation facility to a substation or between substations.

ACRONYMS

AEP	American Electric Power Company, Inc.
CBG	Census Block Group
Company	Appalachian Power Company
EJ	Environmental Justice
kV	kilovolt
NHD	National Hydrography Dataset
NLCD	National Land Cover Database
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
Project	Reusens to Roanoke 138 kV Rebuild Project
ROW	Right-of-way
SCC	Virginia State Corporation Commission
SCU	Stream Conservation Units
U.S.	United States
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VDCR	Virginia Department of Conservation and Recreation
VDH	Virginia Department of Health
VDHR	Virginia Department of Historic Resources
VDOF	Virginia Department of Forestry
VDWR	Virginia Department of Wildlife Resources
VOF	Virginia Outdoors Foundation

1.0 PROJECT DESCRIPTION

American Electric Power (“AEP”) and its affiliated operating company, Appalachian Power Company (“Appalachian Power” or the “Company”), are proposing to rebuild the approximately 43-mile-long Reusens – Roanoke 138-kilovolt (“kV”) Line between the Company’s Reusens Substation in the City of Lynchburg and Roanoke Substation in the City of Roanoke, Virginia. The purpose of the Reusens to Roanoke 138 kV Rebuild Project (the “Project”) is to address the combination of condition, performance, and risk of the infrastructure to maintain reliability of the existing transmission network that serves customers in the region. The Project is located in Roanoke and Bedford Counties, the cities of Roanoke and Lynchburg, and the Town of Vinton, Virginia.

The existing Reusens – Roanoke 138-kV Line was originally constructed in 1926 as a double-circuit transmission line primarily using lattice steel towers. The transmission line will be rebuilt primarily using modern double-circuit lattice steel towers and double-circuit steel monopoles; however, the final structure types will be determined following additional studies and final engineering. The proposed structure heights are anticipated to range from 75 to 160 feet. The average height of the proposed structures is 125 feet, which is approximately 25 feet taller than the average height of the existing structures to meet current design standards. The transmission line will be rebuilt largely within or near the existing 100-foot-wide right-of-way (“ROW”). See the attached Outreach Fact Sheet (Attachment A).

The Company will seek to obtain a Certificate of Public Convenience and Necessity (“CPCN”) from the Virginia State Corporation Commission (“SCC”) to rebuild the 138-kV transmission line in a typical 100-foot-wide ROW sited within a 200- to 300-foot-wide corridor. Final line routes and structure locations will be determined during final engineering and after additional studies including, but not limited to, ground surveys, geotechnical and environmental studies, and additional interviews with landowners are completed. If approved, the Company will complete the preliminary engineering and work with the affected landowners to update existing easements, as necessary, and provide fair compensation for any new easements. After receiving the above input, the Company will finalize the proposed structure locations and ROW width within the SCC-approved filing corridor. The Company will also work with the necessary local, federal, and state agencies during permitting and construction phases. The proposed in-service date for the Project is December 2030.

The Company initiated the routing process for the Project in March 2021 and formed a multidisciplinary team of routing, environmental, engineering, and construction management experts (the “Siting Team”). The Siting Team reviewed the existing transmission line ROW and

developed initial study segments in or near the existing ROW in the spring of 2021. The Company introduced the Project to local officials from Roanoke and Bedford counties, the cities of Roanoke and Lynchburg, and the towns of Bedford and Vinton in December 2021 and requested feedback. The Project was announced to the public in January 2022 and three in-person open houses were held in the Project area in February 2022. Pending acquisition of all required federal, state and/or local permits, the Company estimates that it will take approximately three years to engineer, procure material, and build the first section of the Project and an additional four years to complete the Project in its entirety, due to the size of the Project and availability of circuit outages.

This Siting Study describes the transmission line route development process and the rationale for the Proposed Route selection.

2.0 ROUTE DEVELOPMENT OVERVIEW

AEP's electrical planners started the route development process by defining the **Project Endpoints**, which include the Reusens – Roanoke 138-kV Line between the Company's Reusens, Coffee, Ivy Hill, Centerville, Moseley, Vinton, and Roanoke substations.

Next, the Siting Team defined the **Study Area** to develop transmission line routes. The Study Area includes the existing 138-kV line ROW with a 0.5-mile buffer on each side of the existing centerline (see Attachment B, Map 1). The Study Area for the Project encompasses the Project Endpoints and is generally bounded by the James River to the east, the City of Roanoke to the west, the community of Thaxton to the north, and the Town of Bedford to the south. The Study Area consists primarily of rolling terrain at the foothills of the Blue Ridge Mountains with steeper terrain near the City of Roanoke. The eastern and western extents of the Study Area are developed residential communities while the central portion of the Study Area consists of open agricultural fields, farmland, and forested areas with scattered residential and commercial development (see Attachment C for photographs of the Study Area). United States (U.S.) Routes 501 (Boonsboro Road) and 460 (W. Lynchburg Salem Turnpike) and State Routes 619 (Jordantown Road) and 24 (Stewartsville Highway) cross the Study Area.

Data Collection (see Attachments D, E, and F) and **Constraints and Opportunities** mapping (see Attachment B, Map 1) were completed for the Study Area. Readily available public data sources were used initially and supplemented with stakeholder input, non-public data, and field inspections. The primary constraints include development, historic resources, natural and recreational resources such as the Roanoke River, Blue Ridge Parkway (managed by the National Park Service), and state and federal conservation easements. Additionally, the existing transmission line can only be taken out of service for limited durations during spring and fall

outage windows. Attempting to rebuild the entire approximately 43-mile-long double-circuit transmission line within the existing ROW would significantly increase the time needed to construct the Project and would result in a longer duration of circuit outages. The main siting opportunity considered within the Study Area is the existing 138-kV transmission line ROW. Other opportunities considered in specific locations include paralleling parcel boundaries and other existing infrastructure.

The development and refinement of **Study Segments** was the next step. These segments are partial alignments that, when combined, form a complete route. To avoid constrained areas and to minimize outages, the Siting Team attempted to use or parallel the existing ROW to the extent possible. The Siting Team reviewed **Rebuild Segments** within or near the existing ROW and **Reroute Segments** as conceptual route options in new ROW to avoid constraints where possible. Within the Study Area, three **Focus Areas** were identified for the Project to consider various Reroute Segments (see Section 3.0).

Study Segments were presented to the public during three **Open Houses** across the Study Area (see Section 4.0). Considering feedback received from the public, the Study Segments were modified and assembled into a continuous line route and evaluated (see Section 5.0). The Siting Team reviewed the line route to analyze potential impacts and review constructability. Finally, based on analysis and stakeholder input, the Siting Team identified a **Proposed Route** and the reasons for the Project's Proposed Route selection are described in Section 6.0.

3.0 STUDY SEGMENTS

Study Segments are partial alignments connecting the Project Endpoints within the Study Area. Study Segments were developed to meet the need of the Project and, at the same time, minimize environmental, socioeconomic, and cost impacts. The Siting Team identified Study Segments within the existing transmission line ROW (Rebuild Segments) as well as Study Segments that diverted from the existing ROW to avoid constraints or minimize impacts (Reroute Segments).

Using existing ROWs generally minimizes impacts on the natural and human environments and is consistent with Sections 56-46.1 and 56-259 of the Code of Virginia, which suggest that existing ROWs should be given priority when adding new transmission facilities, and which promote the use of existing ROWs for transmission facilities. In assessing the suitability of using the existing Reusens – Roanoke 138-kV Line ROW, the Company undertook the following activities:

- Company planners indicated that rebuilding within the existing ROW should be limited to short sections, such as through residential areas or conservation easements where no viable alternatives exist, to minimize outage durations.

- Company ROW agents reviewed the existing ROW easements and determined that they generally allow for rebuilding and upgrading the existing 138-kV transmission line.
- The Siting Team completed a desktop review and field reconnaissance of the existing ROW and concluded that rebuilding portions of the 138-kV transmission line within the existing ROW is reasonable.
- The Siting Team met with local officials and stakeholders who generally supported rebuilding the 138-kV transmission line within the existing ROW.

The Siting Team investigated the feasibility of rebuilding the 138-kV transmission line entirely within the existing ROW; however, double-circuit electrical outages would be required for the entire construction duration, which is not a feasible solution for this Project. Because the existing transmission line can only be taken out of service for limited durations during spring and fall outage windows, attempting to rebuild the entire approximately 43-mile-long double-circuit transmission line within the existing ROW would significantly increase the time needed to construct the Project. Considering these outage constraints, the Siting Team identified Study Segments near the existing ROW that can be constructed without a circuit outage but minimize new impacts to the natural and human environments.

The Rebuild and Reroute Segments identified by the Siting Team are shown in Attachment B, Maps 2 – 7. For discussion purposes, the Siting Team identified six rebuild sections for the Project based on intermediate substations:

- **Reusens to Coffee:** Approximately 6.0 miles between the Reusens and Coffee Substations in the City of Lynchburg and Bedford County.
- **Coffee to Ivy Hill:** Approximately 4.0 miles between the Coffee and Ivy Hill Substations in Bedford County.
- **Ivy Hill to Centerville:** Approximately 8.0 miles between the Ivy Hill and Centerville Substations in Bedford County.
- **Centerville to Moseley:** Approximately 4.0 miles between the Centerville and Moseley Substations in Bedford County.
- **Moseley to Vinton:** Approximately 18.0 miles between the Moseley and Vinton Substations in Bedford and Roanoke counties.
- **Vinton to Roanoke:** Approximately 3.0 miles between the Vinton and Roanoke Substations in Roanoke County, the City of Roanoke, and the Town of Vinton.

3.1 Reusens to Coffee Rebuild Section

Between the Reusens and Coffee Substations, the Siting Team primarily considered rebuilding within the existing ROW (Attachment B, Map 2). Off-centerline options were limited by residential development adjacent to the existing 100-foot-wide ROW. Approximately 5.0 miles of the rebuild section crosses residential development within the City of Lynchburg and parallel to a Colonial Pipeline Company ROW. Study Segments 1 and 4 use the existing Reusens – Roanoke 138-kV Line ROW for 3.0 and 2.8 miles, respectively, to avoid new impacts to residences, Virginia Outdoors Foundation (“VOF”) conservation easements, National Register of Historic Places (“NRHP”) architectural resources, and stream and wetland features.

The first Focus Area identified for the Project is near U.S. Route 501 (Boonsboro Road) where an apartment building and residential trailer encroach into the existing transmission line ROW (the “Boonsboro Road Focus Area”). Study Segment 2 deviates to the north for 0.2 mile as it crosses U.S. Route 501 (Boonsboro Road) to avoid the residences. Study Segment 3 uses the existing ROW and would require the removal of the apartment building and residential trailer (see Figure 1).



Figure 1. Boonsboro Road Focus Area

Two VOF conservation easements and two NRHP-listed or -eligible architectural resources are crossed by Study Segment 4 within the existing ROW. Due to the presence of the Colonial Pipeline Company ROW, the Company’s existing Big Island – South Lynchburg 69-kV Line,

residences, and Cheese Creek, no viable Reroute Segments to avoid the conservation easements and architectural resources were identified.

3.2 Coffee to Ivy Hill Rebuild Section

Near Coffee Substation, Study Segment 5 remains within the existing ROW for 0.4 mile across a VOF conservation easement. West of the VOF easement, Study Segment 6 uses the existing ROW for 0.8 mile across State Route 621 (Cottontown Road). Study Segments 7 and 8 each parallel the south side of the existing ROW for 0.8 mile.

East of State Route 663 (Perrowville Road), the Siting Team identified the second Focus Area for the Project – the “Perrowville Road Focus Area” (see Figure 2). Four Study Segments were developed as options to cross Dominion Energy Virginia’s Line 30 115-kV Circuit and avoid a barn within the existing ROW. While coordinating with state agencies, the Company was made aware of a proposed VOF easement between State Route 663 (Perrowville Road) and the Dominion Energy Virginia transmission line. Study Segment 9 uses the existing ROW for 0.8 mile and Study Segment 10 parallels the southern side of the existing ROW for 0.8 mile; both options would require the removal of the barn. Study Segment 11 deviates approximately 500 feet south of the existing centerline for 1.3 miles, crossing a Colonial Pipeline Company ROW to avoid the barn and more closely follow parcel boundaries. Study Segment 12 uses the existing ROW for 0.2 mile to cross State Route 663 (Perrowville Road).

West of State Route 663 (Perrowville Road) and east of the Company’s Ivy Hill Substation, a Virginia Department of Historic Resources (VDHR) conservation easement is crossed by the existing transmission line and Study Segments 11, 13, 14, and 15. The Elk Hill conservation easement also contains an NRHP-listed architectural resource (see Section 5.4). Through the conservation easement, Study Segment 13 uses the existing Reusens – Roanoke 138-kV Line ROW for 1.2 miles while Study Segments 14 and 15 parallel the south side of the existing transmission line in new ROW for 0.3 and 0.9 mile, respectively (see Attachment B, Map 3).

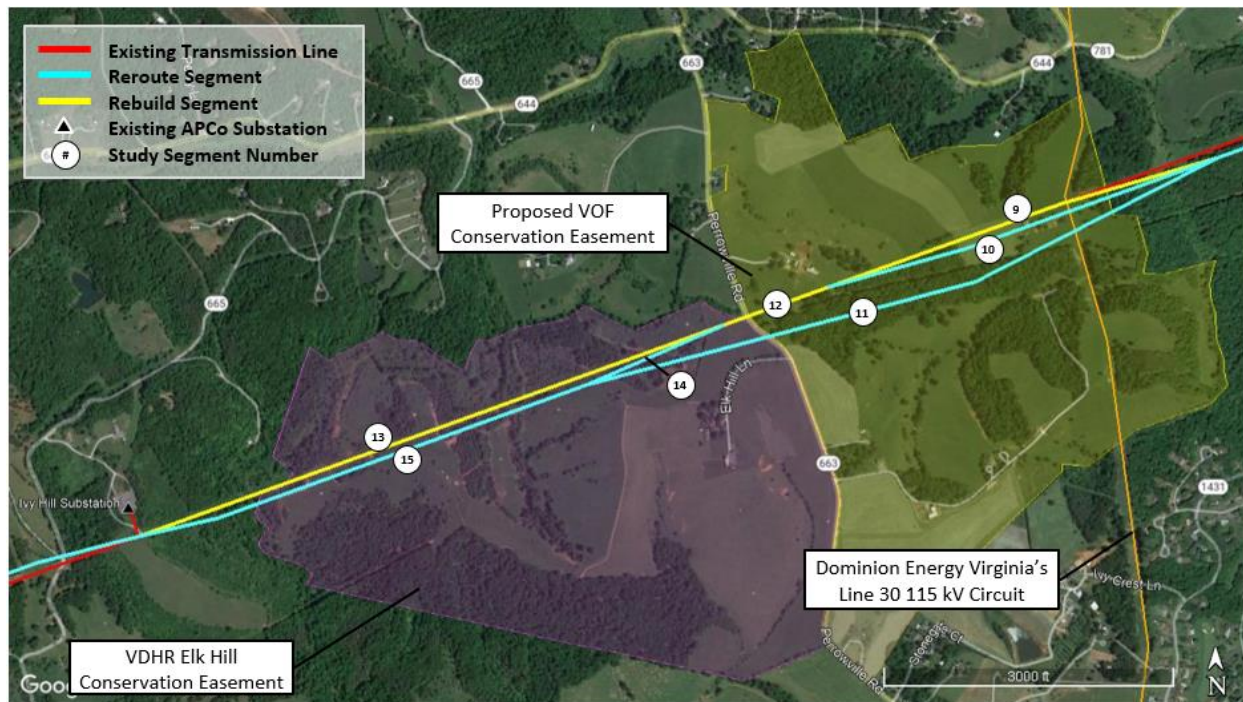


Figure 2. Perrowville Road Focus Area

3.3 Ivy Hill to Centerville Rebuild Section

Between the Company's Ivy Hill and Centerville substations in Bedford County, the Siting Team identified opportunities to parallel the existing Reusens – Roanoke 138-kV Line ROW (Attachment B, Map 4). The land use in this rebuild section consists primarily of undeveloped and forested lands with some residential development along State Routes 643 (Cifax Road), 637 (Hawkins Ridge Road), and 673 (Benchmark Lane).

Study Segment 16 parallels the north side of the existing ROW for 2.8 miles between the Company's Ivy Hill Substation and State Route 670 (Roaring Run Road) and Study Segment 17 uses the existing ROW for 0.7 mile across a VOF conservation easement.

West of the VOF conservation easement, Study Segment 18 follows the existing ROW across State Route 637 (Hawkins Ridge Road) for 0.5 mile to avoid a residence just outside of the existing ROW and then parallels the south side of the existing ROW for 1.2 miles. Study Segment 19 deviates approximately 250 feet south of the existing centerline for 1.7 miles, crossing State Route 637 (Hawkins Ridge Road) in new ROW south of the home adjacent to the existing ROW. Study Segments 20, 23, 24, and 25 parallel the south side of the existing transmission line ROW for a total of 2.7 miles across State Route 673 (Benchmark Lane) and Lankford Mill Road. A residential trailer just outside of the existing ROW near State Route 673 (Benchmark Lane) is crossed by Study Segment 23. Study Segment 22 avoids the residential

trailer near State Route 673 (Benchmark Lane) by using the existing ROW for the road crossing. Study Segment 21 was developed by the Siting Team to reduce the number of line angles by diverting approximately 350 feet south of the existing centerline. The 1.4-mile-long Study Segment eliminates the need for three-line angles and avoids residences on State Route 673 (Benchmark Lane). Study Segment 25 largely uses the existing ROW to cross State Routes 644 (Lankford Mill Road) and 122 (Big Island Highway). Residential development, including the Peaks Crossing Apartment Homes, and a Colonial Pipeline Company ROW limit the opportunity to develop Reroute Segments and no alternatives to Study Segment 25 were identified. Near the Centerville Substation, Study Segment 26 splits the double-circuit line into two single-circuit line segments that cross State Route 644 (Fancy Farm Road) to accommodate the proposed improvements at the substation.

3.4 Centerville to Moseley Rebuild Section

The rebuild section between the Company's Centerville and Moseley substations is 3.9 miles long and crosses through largely open fields (Attachment B, Map 5). Study Segment 27 parallels the north side of the existing transmission line ROW for approximately 1.5 miles then crosses to the south side of the existing ROW to increase the distance between the Project and a Colonial Pipeline Company gas line that is within the existing transmission line ROW near State Route 43 (Peaks Road). The Study Segment crosses an NRHP-eligible architectural resource, Redlands Farm, in new ROW for approximately 0.5 mile (see Section 5.3).

3.5 Moseley to Vinton Rebuild Section

The rebuild section between the Company's Moseley and Vinton substations is approximately 18.0 miles long. The land uses within the rebuild section include concentrated areas of residential and commercial development, conservation easement and recreation areas, as well as undeveloped and forested lands. Residential development within the rebuild section is common at road crossings such as State Routes 681 (Magnolia Drive), 755 (Union Church Road), and 701 (Mountain Valley Road), Crestwood Drive, and Browning Road, as well as communities such as the Village Green and Feather Gardens neighborhoods. Commercial development is concentrated near the U.S. Route 460 (W. Lynchburg Salem Turnpike) crossing (Attachment B, Map 6).

West of Moseley Substation, the Siting Team identified the third Focus Area for the Project and developed Reroute Segments to avoid commercial and residential development, including the Grandview Trailer Sales Center and Moose Lodge baseball fields crossed by the existing transmission line (the "U.S. Route 460 Focus Area").

Study Segment 28 remains within the existing ROW for 0.5 mile across State Route 680 (Patterson Mill Road) between residences and close to the existing ROW for another 0.3 mile. Study Segments 30 and 32 use the existing ROW for 0.1 and 0.9 mile, respectively, crossing a Norfolk Southern Railroad Company railroad, U.S. Route 460 (W. Lynchburg Salem Turnpike), Grandview Trailer Sales Center and the Moose Lodge baseball fields. Study Segment 36 largely parallels the south side of the existing Reusens – Roanoke 138-kV Line ROW for 1.0 mile and crosses State Route 681 (Magnolia Drive).

Study Segments 29, 31, and 33 introduce new crossings of a Norfolk Southern Railroad Company railroad and U.S. Route 460 (W. Lynchburg Salem Turnpike). Study Segment 29 is 1.1 miles long and diverts approximately 1,800 feet south of the existing transmission line and around residential development on Haven Heights Drive and Bradley Drive compared with Study Segments 31 and 33 which are 0.4 and 0.3 mile long, respectively, and divert approximately 1,300 feet south of the existing centerline but remain north of the residential areas. Study Segment 34 parallels parcel boundaries west for 0.7 mile in new ROW and connects to Study Segments 32 and 36 east of State Route 681 (Magnolia Drive). Study Segment 35 (1.0 mile long) traverses southwest, turns due west, crosses State Routes 744 (Von Roy Road) and 681 (Magnolia Drive) approximately 2,000 feet south of the existing road crossing, and connects to Study Segments 36 and 37 (see Figure 3).

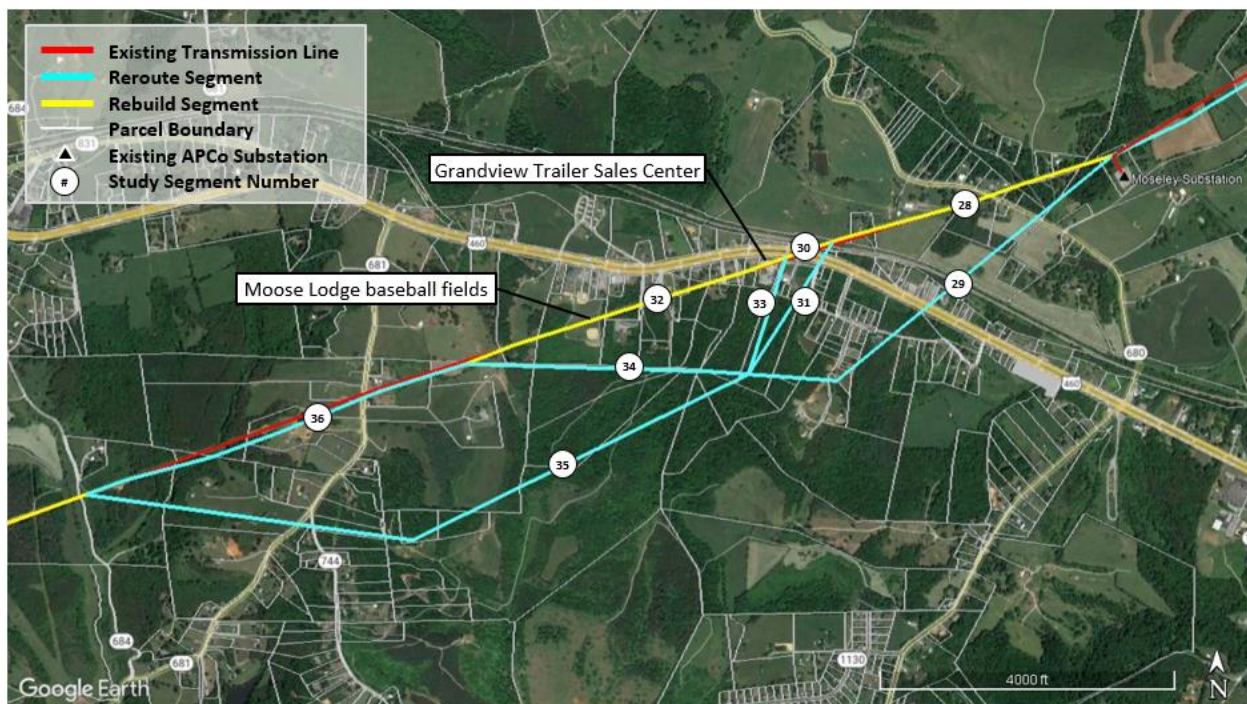


Figure 3. U.S. Route 460 Focus Area

Study Segment 37 uses the existing transmission line ROW for 0.7 mile across a VOF conservation easement and south of the NRHP-eligible Early-Wheat Farm architectural resource. This study segment continues an additional 2.3 miles parallel to the north side of the existing ROW between State Routes 689 (Johnson School Road) and 755 (Union Church Road).

Near Crestwood Drive, two residences are within the ROW of the existing transmission line. Study Segment 38 avoids both residences by diverting approximately 1,000 feet north of the existing transmission line for 1.0 mile. Study Segment 38 crosses State Route 755 (Union Church Road) approximately 175 feet south of Union Methodist Church and Crestwood Drive approximately 1,100 feet northeast of the existing transmission line crossing. The Study Segment turns southwest toward the existing transmission line approximately 500 feet east of Fairdale Drive to avoid a U.S. Natural Resource Conservation Service (“NRCS”) Wetlands Reserve Program conservation easement. Study Segments 39 parallels the north side of the existing ROW for 0.3 mile across State Route 755 (Union Church Road). Study Segment 40 parallels the north side of the existing ROW for 0.6 mile across Crestwood Drive and avoids one residence that is on the south side of the existing transmission line; however, the Study Segment crosses a residence that is on the northern edge of the existing ROW. Study Segment 41 diverts to use the existing ROW for 0.6 mile as it crosses Crestwood Drive to avoid both residences.

Southwest of Crestwood Drive, Study Segment 42 largely parallels the north side of the existing ROW for 3.9 miles through open and largely undeveloped lands. Near State Route 700 (Bee Hollow Road), the Study Segment shifts north of the existing transmission line to avoid a barn adjacent to the existing ROW. Study Segment 43 parallels the existing transmission line for 1.2 miles while Study Segment 44 uses the existing ROW for 1.2 miles through the Village Green neighborhood. One residential trailer on State Route 1460 (Village Drive) is within the existing transmission line ROW (Study Segment 44) as well as the parallel option (Study Segment 43); no other alternatives were identified to minimize impacts in the Village Green neighborhood. Near Courtland Drive, Study Segment 45 crosses to the south side of the existing transmission line for 0.9 mile to avoid residences on the north side the existing ROW. Near State Route 701 (Mountain Valley Road), Study Segment 45 crosses to the north side of the existing transmission line and continue parallels the existing ROW for an additional 2.3 miles to the Company’s Roanoke – Cloverdale 138-kV Line, near existing structure 2-175.

West of the Company’s Roanoke – Cloverdale 138-kV Line, near existing structure 2-175, Study Segments 46 and 47 are within and parallel to the existing ROW for a total of 2.3 miles. Study Segment 47 parallels the north side of the existing ROW between State Route 24 (Stewartsville

Road) and the Blue Ridge Parkway and uses the existing ROW to cross the Blue Ridge Parkway and Feather Road.

3.6 Vinton to Roanoke Rebuild Section

Between the Company's Vinton and Roanoke substations, the Siting Team primarily investigated rebuilding within the existing Reusens – Roanoke 138-kV Line ROW to avoid residential development in the Town of Vinton and the City of Roanoke. Study Segments 48, 49, and 51 use the existing ROW for a total of 0.9 mile through the Montgomery Village neighborhood while Study Segment 50 shifts approximately 30 feet south for 0.3 mile to minimize impacts to residences adjacent to the existing ROW. Study Segment 52 parallels the north side of the existing ROW to avoid one residence and one garage that are within the existing ROW while Study Segment 53 uses the existing ROW for 0.8 mile to cross the Roanoke River. West of the Roanoke River, Study Segment 54 generally uses the existing ROW for 1.7 miles to minimize new impacts to residential and commercial development in Roanoke County and the City of Roanoke.

4.0 PUBLIC INVOLVEMENT

Following the development of the Study Segments discussed in Section 3.0, the Company invited the public to provide comments and feedback on the Project.

4.1 Project Announcement

The Project was publicly announced with a news release and launch of a Project-specific website on January 25, 2022.

Landowners within a 1,000-foot corridor (500 feet on either side of a Study Segment centerline) were notified of the Project and three open houses. Landowner addresses were obtained from Roanoke and Bedford Counties and the cities of Lynchburg and Roanoke. Notifications included the following activities:

- A news release was distributed by the Company on January 25, 2022, to announce the Project and open houses. Appalachian Power representatives requested input on the Project by February 25, 2022.
- Two separate mailings were sent to 1,440 landowner addresses on January 25 and January 31, 2022. The outreach mailings included a postcard, letter, Project fact sheet, and a comment card with a prepaid postage return envelope. To promote the meaningful involvement of all communities potentially affected by the Project, the Company sent each mailing to 125 rental residences in the Jamestown Place and Totera Ridge communities.

- Advertisements were circulated on Facebook between January 31 and February 25, 2022, and were targeted toward zip codes crossed by the Project. A video advertisement announcing the Project and inviting the public to attend an open house ran from January 31 to February 10, 2022. A second video advertisement encouraging the public to share input on the Project ran from February 11 to February 25, 2022.

4.2 Public Meetings

Due to the geographical size of the Project, the Company hosted three in-person public open houses to gather landowner and community feedback. These open houses were held February 8, 9, and 10, 2022 from 5 to 7:30 p.m. at William Byrd Middle School (2910 East Washington Avenue), Montvale Elementary School (1 Little Patriot Drive), and Boonsboro Elementary School (1234 Eagle Circle), respectively. The Company presented the initial Study Segments for the Project (see Section 3.0) at the open houses. Various stations were set up at the open houses that provided information related to engineering and design of structures, Project need, ROW, and construction.

Aerial and topographical map books at a scale of 1-inch equals 200 feet were provided at the open houses for the public to review and were used to record written comments concerning sensitive resources in their local community. Members of the Siting Team greeted meeting attendees, answered questions about the Project, and aided attendees in locating their property or other notable features on aerial maps showing the existing infrastructure and initial Study Segments. Open house attendees were encouraged to document the location of their houses, buildings, places of business, or other sensitive resources on the printed maps. After each open house, handwritten comments on the maps were digitized and entered into the Project GIS database.

Comment cards were distributed to all meeting attendees. Attendees were encouraged to fill out the card completely and provide current contact information. The Siting Team read all comment cards and handwritten comments were digitized and entered into the Project GIS database as a record of meeting attendance and public comments. Eighteen people attended the first open house on February 8, 2022; 36 people attended the second open house on February 9, 2022; and 26 people attended the third open house on February 10, 2022.

The Project website (www.AppalachianPower.com/Reusens-Roanoke) includes updates and news releases, an interactive map, fact sheet, and Project timeline. A virtual open house was posted to the Project website where landowners could engage with similar content to that of the in-person public open houses. Information related to the Project need, engineering and design of the transmission line, and ROW and construction activities was presented in audio

and visual formats. In addition to the comment sheets collected at the open house, questions and comments were also welcomed on the website through the contact page. As of October 1, 2022, a total of 107 comments were returned to the Company via comment cards, emails, or phone calls.

4.3 Landowner Engagement

The comment cards, emails, and phone call responses returned to the Company or received through the Project website were entered into the Project GIS database, and generally related to how the rebuilt transmission line would differ from the existing line and general Project information. Several landowners requested specific information about the effect of the line on their property and provided input on the placement of structures. The Project will largely be rebuilt within or parallel to the existing ROW, and input from stakeholders and landowners did not indicate major concerns with using or paralleling the existing Reusens – Roanoke 138-kV Line ROW. The Company will continue to coordinate with landowners and stakeholders throughout the duration of the Project.

5.0 ROUTE REVIEW

The Siting Team reviewed each Study Segment while considering the Project’s constraints, opportunities, and the feedback received from the public and affected landowners. Between **Reusens Substation and Coffee Substation**, the Siting Team carried forward Study Segments 1, 2, and 4 to use the existing ROW, except at Boonsboro Road where a minor deviation avoids residences that have encroached on the existing ROW.

Between **Coffee Substation and Ivy Hill Substation**, the Siting Team carried forward Study Segments 5 and 6 to remain in the existing ROW across State Route 621 (Cottontown Road) to minimize new impacts to residences near the road. Within the Perrowville Focus Area, Study Segments 9 and 12 were carried forward to minimize new impacts to landowners and the proposed VOF easement. West of Perrowville Road, through the Elk Hill VDHR conservation easement, Study Segments 14 and 15 were carried forward to parallel the existing ROW to minimize the outage duration required during construction.

Between the **Ivy Hill Substation and Centerville Substation**, Study Segment 16 was modified to use the existing ROW for 0.3 mile across State Route 643 (Cifax Road) based on input received from landowners and to avoid moving closer to residences. The Siting Team considered routing concepts to modify Study Segment 19 to cross State Route 637 (Hawkins Ridge Road) and minimize outage durations; however, Study Segment 17 was ultimately carried forward to use the existing ROW and minimize new impacts to residences and land uses along State Route 637

(Hawkins Ridge Road). Study Segment 23 was carried forward to cross State Route 673 (Benchmark Lane) to avoid three additional line angles and the need for an additional circuit outage; however, a residential trailer adjacent to the existing ROW is crossed by Study Segment 23. In addition, Study Segments 18, 20, 24, 25, and 26 were carried forward for the rebuild section.

Between **Centerville Substation and Moseley Substation**, Study Segment 27 was modified and carried forward. The Company's engineers and planners determined an outage was feasible in the circuit section to use the existing ROW for two spans between State Route 43 (Peaks Road) and Chelsea Place (0.4 mile) to avoid moving the transmission line closer to residence and minimize impacts to future land uses identified by landowners. The remaining 3.4 miles of the rebuild section parallel the existing transmission line ROW.

In the **Moseley to Vinton** rebuild section, Study Segment 29 was dismissed to minimize new impacts to parcels not crossed by the existing transmission line and avoid a grass airfield that was identified by the public. Landowner feedback indicated a preference for using the existing ROW between Moseley Substation and U.S. Route 460 (W. Lynchburg Salem Turnpike) and Study Segment 28 was carried forward. In the U.S. Route 460 Focus Area, Study Segment 35 was dismissed based on landowner input and to minimize new impacts to landowners not affected by the existing transmission line.

Landowner feedback also identified a newly constructed commercial building between Study Segments 31 and 33 and indicated a preference for the western route option. The Siting Team modified Study Segment 33 to more closely parallel the parcel boundary and avoid the new building and dismissed Study Segment 31. South of the Moose Lodge and Mountain View Church, public comments identified a cemetery near Study Segment 34 (see Section 5.4). The Siting Team moved Study Segment 34 approximately 100 feet north to avoid the cemetery and parallel the north side of the parcel boundary. Study Segments 30, 33, 34, and 36 were carried forward to turn south to avoid the Grandview Trailer Sales Center, residential development adjacent to the existing ROW, and the Moose Lodge baseball fields, minimize impacts to new landowners by paralleling parcel boundaries, and reduce the duration of outages needed for construction.

Study Segment 37 was carried forward to parallel the north side of the existing transmission line ROW. Study Segments 39 and 40 were carried forward to continue paralleling the existing transmission line ROW across Crestwood Drive where one residential trailer is crossed by Study Segment 40. Study Segment 38, which avoided both residences on Crestwood Drive, required four additional line angles, crossed landowners not affected by the existing transmission line, and required tree clearing around a NRCS Wetlands Reserve Program conservation easement. Study

Segment 41 also avoided both residences on Crestwood Drive but required three additional line angles and an additional circuit outage to use the existing ROW. Near State Route 700 (Bee Hollow Road), Study Segment 42 was modified to use the existing ROW for 0.4 mile to minimize land use impacts and avoid a barn adjacent to the existing ROW and was carried forward. West of Jordantown Road, Study Segments 44, 45, 46, and 47 were carried forward to minimize impacts in the Village Green neighborhood, minimize new impacts to the Blue Ridge Parkway, and reduce the required outage duration.

Between **Vinton Substation and Roanoke Substation**, Study Segments 48, 49, 51, 52, and 54 were carried forward to use the existing ROW, except at the Roanoke River where a deviation parallels the existing ROW to avoid a garage that has encroached on the existing ROW.

Table 1 and the following route review includes estimates based on a typical 100-foot-wide ROW on the centerline of the line route.

Table 1. Project Evaluation Criteria		
Criteria	Unit	Quantity
Total line length	miles	43.2
Length rebuilt in existing ROW	miles	18.1
Length rebuilt in new ROW (parallel to or near the existing ROW)	miles	25.1
Natural Environment		
Section 10 river crossing	count	1
Total streams crossed (NHD)	count	76
High/Exceptional/Special Protection streams crossed	count	3
Total wetlands in ROW (NWI)	count	48
Tree clearing required in the ROW (based on aerial photography)	acres	160.9
Karst topography in the ROW	acres	5.7
Federal/state land crossed by ROW	acres	2.5
Conservation easements crossed by the ROW	acres	31.0
Human Environment		
Number of parcels crossed ¹ by the ROW	count	447
Unique landowners ² within ROW	count	337
Pasture/rangeland crossed in ROW (based on NLCD data)	acres	16.6
Prime and unique farmland ³ soil in the ROW	acres	9.3

¹ The number of parcels crossed refers to the number of individual plots of land recorded by the city or county.

² The number of landowners within the ROW represents the number of individual landowners, who each may own one or more parcels, including the Company.

³ Prime farmland is land that has the best combination of physical and chemical characteristics for producing crops (based on USDA-NRCS SSURGO data).

Table 1. Project Evaluation Criteria		
Criteria	Unit	Quantity
Farmland of statewide importance ⁴ in the ROW	acres	39.7
Barns, outbuildings, sheds, garages and silos ⁵ in the ROW	count	32
Residences/single-family dwellings within ROW	count	10
Residences/single-family dwellings within 100 feet of centerline	count	81
Residences/single-family dwellings within 250 feet of centerline	count	313
Residences/single-family dwellings within 500 feet of centerline	count	618
Multi-family dwellings within ROW	count	0
Multi-family dwellings within 100 feet of centerline	count	8
Multi-family dwellings within 250 feet of centerline	count	11
Multi-family dwellings within 500 feet of centerline	count	28
Businesses/commercial buildings within the ROW	count	0
Businesses/commercial buildings within 250 feet of the centerline	count	18
Businesses/commercial buildings within 500 feet of the centerline	count	31
Schools within 1,000 feet of centerline	count	3
Designated places of worship within 1,000 feet of centerline	count	5
Cultural Resources		
Cemeteries within the ROW	count	0
Cemeteries within 250 feet of centerline	count	3
NRHP-listed sites within 1.0 mile of the centerline	count	13
National Landmarks within 1.0 mile of the centerline	count	0
Historic Districts ⁶ within 1.0 mile of the centerline	count	3
Known NRHP-eligible sites within 0.5 mile of the centerline	count	11
Listed archaeological sites within ROW	count	0
Eligible archaeological sites within ROW	count	1
Scenic byways crossed	count	2
Constructability		
U.S. highways crossed	count	2
State highways crossed	count	4
Local roads and streets crossed	count	120
Railroads crossed	count	2
Existing 69-kV transmission lines crossed	count	1
Existing 115-kV transmission lines crossed	count	1
Existing 138-kV transmission lines crossed	count	1

⁴ Soils that do not meet the prime farmland category but are still recognized for their productivity by states may qualify as soils of statewide importance (based on USDA-NRCS SSURGO data).

⁵ Building footprints were obtained from a combination of sources including LiDAR, imagery, Microsoft Building Footprints, and field review, as available.

⁶ Three historic districts are within 1.0 mile of the centerline and are listed on the NRHP.

Table 1. Project Evaluation Criteria		
Criteria	Unit	Quantity
Existing 765-kV transmission lines crossed	count	1
Steep slopes crossed by ROW (>20%), percent of total length	percent	25.7
Oil and Gas Pipeline paralleled	miles	7.0

5.1 Natural Environment

The natural environment includes water, soil, sensitive species, and wildlife habitat. Potential impacts are based on publicly available maps and data as well as coordination with federal, state, and local agencies.

The Project crosses the Roanoke River in a new ROW parallel to the existing Reusens – Roanoke 138-kV Line. In a letter dated April 27, 2022, the United States Army Corps of Engineers (“USACE”) stated that the Project does not appear to result in discharges of dredged and/or fill materials into waters of the United States; however, temporary or permanent discharges would be subject to the permitting requirements of Section 404 of the Clean Water Act (33 Code of Federal Regulations 323). The line route for the Project crosses 76 National Hydrography Dataset (“NHD”) features at or near the existing crossing locations and 48 National Wetland Inventory (“NWI”) features at or near the existing locations. No designated state scenic rivers are crossed by the Project; however, the Project crosses a section of the Roanoke River that is designated as a qualified scenic river approximately two miles east of the Company’s Roanoke Substation, parallel to the existing ROW. The Virginia Marine Resources Commission noted in a letter dated March 4, 2022, that a permit may be required for channelward encroachments of hydrologic features with a drainage area that exceeds five square miles. No comments or objections were noted in a response from the Virginia Department of Health (“VDH”) Office of Drinking Water, Danville Field Office, on February 9, 2022. In a response dated March 25, 2022, The VDH Office of Drinking Water identified groundwater wells within one mile of the Project, surface water intakes within five miles of the Project, and public surface water sources within five miles of the Project. The VDH also stated that wells within 1,000 feet of the Project should be marked and protected from damage during construction and that on-site materials should be managed to prevent impacts to surface water sources.

In a response dated March 11, 2022, the Virginia Department of Conservation and Recreation (“VDCR”) provided input and made recommendations about the Project, particularly outlining Stream Conservation Units (“SCU”) and Creek Conservation Units that are present in the Project Area. The Project area includes the Ivy Creek SCU and Judith Creek SCU which have been ranked B3 (high significance) and B4 (moderate significance), respectively. The VDCR indicated the potential for the Roanoke logperch, which is classified as an endangered species by the United

States Fish and Wildlife Service (“USFWS”) and the Virginia Department of Wildlife resources (“VDWR”), to occur within the Project area. Additionally, the VDWR has designated Glade Creek, Big Otter Creek, Goose Creek, and the Roanoke River as “Threatened and Endangered Species Water.” The VDCR also noted the potential to encounter sensitive karst features and fragment ecological cores (C4 and C5) within the Project area. The Project will be rebuilt largely within or parallel to the existing transmission line to minimize potential impacts to the natural environment.

The Project crosses rolling terrain comprised of open fields and forested areas that could provide a suitable habitat for various species. A USFWS Information for Planning and Consultation project planning tool identified the potential for the endangered Indiana bat (*Myotis sodalis*), threatened northern long-eared bat (*Myotis septentrionalis*), and endangered Roanoke logperch (*Percina rex*) to occur within the Project Area. The VDWR’s *Northern Long-eared Bat Winter Habitat and Roost Tree* database was referenced and determined the closest habitat buffer is approximately 13 miles northwest of the Project area. No critical habitat areas were identified in the USFWS and VDWR databases.

In a letter dated March 4, 2022, the VOF identified five open-spaces easements that are crossed by the Project as well as one easement that is adjacent to the Roanoke Substation but not crossed by the Project. On April 7, 2022, the VOF notified the Siting Team that a proposed VOF easement may be crossed by the Project. Members of the Siting Team met with the VOF to review the location of the proposed VOF easement and discuss potential impacts from the Project. To minimize potential impacts, the line route for the Project crosses all existing and proposed VOF easements within the existing 138-kV transmission line ROW. In a letter dated March 4, 2022, the Virginia Department of Forestry (“VDOF”) recommended the use of existing ROWs wherever possible. No VDOF easements are crossed by the Project.

Overall, the Project will minimize potential impacts to the natural environment by primarily using or paralleling the existing transmission line ROW. The responses received from the VDWR, VDCR, Virginia Department of Environmental Quality, Virginia Marine Resources Commission, VOF, VDH, VDOF, USACE, and USFWS are included in Attachment F. Coordination and review with applicable federal and state organizations will be conducted during the Project’s environmental studies.

5.2 Human Environment

The human environment includes uses of the land and activities at a given location such as agricultural, forestry, residential, industrial, mining, commercial, institutional, scenic assets, and recreational uses. The opportunity to use or parallel existing ROWs minimizes conflicts with the

existing and proposed land uses as compared to a new transmission line ROW in an area where one does not currently exist. Given the operational constraints of the Project, areas outside the existing ROW must be reviewed to minimize the duration of circuit outages.

Appalachian Power introduced the Project to Roanoke and Bedford counties, the cities of Roanoke and Lynchburg, and the towns of Bedford and Vinton in late 2021. Members of the Siting Team met virtually with local officials from Bedford and Roanoke counties, the City of Roanoke, and the towns of Bedford and Vinton on December 1, 2021, to present the Project, review the initial Study Segments, and answer questions about the Project. Following the virtual meeting with the local officials, the Company requested information about any future development, designated farmlands of statewide or local importance, or agricultural or forestal districts within each jurisdiction; however, none were identified by the local officials. The Bedford County Comprehensive Plan 2030 (updated August 10, 2015) supports the safe, environmentally sensitive, and cost-efficient delivery of reliable utility services. The Roanoke County 2005 Community Plan promotes the provision of utility services to the community. The Reusens – Roanoke 138-kV Line has operated in its existing location since 1926 and generally rebuilding within or near the existing ROW will minimize new impacts to the human environment.

Agricultural and forestry resources are abundant in the Project area, particularly in Bedford County which is largely undeveloped land. In a response received February 9, 2022, the United States Department of Agriculture’s NRCS stated that no Farmland Protection Policy Act request is needed for existing transmission line ROWs. In a letter dated February 28, 2022, the Virginia Department of Agriculture and Consumer Services recommended avoiding actions that may adversely affect existing farmland.

The line route largely uses or parallels the existing transmission line. No viable alternative routes were identified for the entire Project that would minimize effects on the human environment. Members of the Siting Team considered all feedback received from landowners regarding existing and future land uses and revised the initial Study Segments where reasonable to minimize potential impacts. Ten residences are within the typical 100-foot-wide ROW of the line route. Based on preliminary engineering analysis, the Company expects the Project can be designed and constructed to keep seven of those residences outside of the conductor zone. One residence on Village Drive and one residence on Crestwood Drive in Bedford County have encroached on the existing ROW and are in the conductor zone of the line route. One residence on State Route 673 (Benchmark Lane) is adjacent to the existing transmission line and is within the ROW and conductor zone of the line route. Accordingly, and subject to completion of final engineering and negotiations with affected landowners, the Company expects that these three residences within the ROW will need to be removed to accommodate the Project. The Company

will continue to coordinate with landowners where new ROW is proposed or easements need to be supplemented.

The line route for the Project largely uses or parallels the existing ROW to minimize impacts to the human environment. The responses received from the NRCS and Virginia Department of Agriculture and Consumer Services are included in Attachment F. Coordination and review with applicable federal, state, and local organizations will be conducted during the Project's environmental studies.

5.3 Environmental Justice

It is the Company's long-standing practice in its route development processes to avoid or reasonably minimize impacts to the human environment, which includes environmental justice ("EJ") communities and fence line communities within the meaning of the Virginia Environmental Justice Act (§ 2.2-234 *et seq.* of the Code of Virginia), or the "Act." The Siting Team reviewed the U.S. Environmental Protection Agency's EJSCREEN (2021) tool and data from the American Community Survey from the United States Census Bureau.

The EJSCREEN and Census Block Group ("CBG") data (the smallest geographic unit for which U.S. Census Bureau demographic data is available) was used to review the Project. Per the available EJSCREEN and American Community Survey data, there are 46 CBGs located within 1.0 mile of the existing Reusens – Roanoke 138-kV Line, 21 of which are crossed by the line route for the Project. The results of the dataset are provided in Attachment G and the CBGs identified within 1.0 mile of the Project are depicted in Attachment B, Map 8. Of the 46 CBGs located within 1.0 mile of the line route, 19 meet the threshold of at least one "EJ community" as defined by the Act, namely communities of color and low-income communities, and 23 exceed the state averages. Of these CBGs, six are crossed by the line route for the Project.

The Project is not anticipated to have a disproportionately high or adverse impact on EJ communities as defined in the Act. The Project will generally rebuild the existing transmission line within or near the existing transmission line ROW. Relocating the Project from its current location would result in additional ROW impacts by crossing other similar EJ communities and was not considered a feasible alternative for the Project. As discussed in Section 4.0, Appalachian Power mailed notifications to 1,440 landowners who were within 500 feet of a Study Segment announcing the Project and inviting the public to provide feedback at an in-person open house, via the website, or by telephone. Additionally, targeted Facebook advertisements were circulated inviting the public to provide input on the Project. All landowner input received was reviewed by the Siting Team and, where feasible, Study Segments were adjusted to minimize impacts. The

Company will continue to engage all affected landowners, including EJ communities as defined in the Act, throughout the duration of the Project.

5.4 Cultural Resources

Background research was conducted to identify all previously recorded cultural resources through the review of historic documents, agency and public input, and various archives including the VDHR's Virginia Cultural Resource Information System database. The Siting Team requested input on the Project from the VDHR but did not receive a response.

Thirteen NRHP-listed architectural sites are within 1.0 mile of the line route:

- Old Rectory (VDHR# 009-0056)
- Bowling Eldridge House (VDHR# 009-5283)
- Buena Vista (VDHR# 128-0001)
- Mill Mountain Star (VDHR# 128-0352)
- Riverland Historic District (VDHR# 128-5476)
- Otterburn (VDHR# 009-0024)
- Three Otters (VDHR# 009-0031)
- Virginia Episcopal School (VDHR# 118-0224)
- Presbyterian Orphans Home (VDHR# 118-5240)
- American Viscose Plant Historic District (VDHR# 128-0238)
- Elk Hill (VDHR# 009-0006)
- Cifax Rural Historic District (VDHR# 009-0254)
- Locust Grove (VDHR# 118-0219).

There are eleven NRHP-eligible sites within 0.5 mile of the line route:

- Hopkins House (VDHR# 009-5234)
- Wright Farm (VDHR# 009-5352)
- Hurt Barn (VDHR# 009-5362)
- Early-Wheat Farm (VDHR# 009-5030)
- Reusens Dam (VDHR# 118-0218)
- CSX Railroad (VDHR# 118-5546)
- Norfolk Southern Railway (VDHR# 128-6160)
- Southeast Neighborhood Historic District (VDHR# 128-5865)
- Redlands Farm (VDHR# 009-0187)
- Blue Ridge Parkway Historic District (VDHR# 080-5161)
- Cobbs-Metcalf-Overstreet House (VDHR# 118-5184)

There are no National Historic Landmarks located within 1.5 miles of the Project and no battlefields within 1.0 mile of the Project. Two previously recorded archaeological sites are located within the ROW of the line route: VDHR# 44RN0005 (Not Evaluated) and VDHR# 44RN0220 (Eligible). One cemetery near the ROW of the line route has not been previously recorded or investigated but was identified by a landowner.

In July and August 2022, Dutton + Associates, LLC conducted a Pre-Application Analysis of cultural resources for the Project in accordance with VDHR's 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 the SCC's Division of Public Utility Regulation Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia (August 2017). A field reconnaissance was conducted for each previously recorded historic resource that meets the criteria in the Guidelines. Visual inspection and simulation indicated the intervening distance, topography, and/or vegetation limits significant or new viewshed impacts because of the Project. The existing transmission line structures average approximately 100 feet in height and the proposed transmission line structures average approximately 125 feet in height. Given the Project will largely be rebuilt within or near the existing ROW and proposed structures will be approximately 25 feet taller than the existing structures, it is anticipated the Project will have no more than a moderate impact to four historic resources but no more than a minimal impact on most historic resources, as discussed in the Pre-Application Analysis.

5.5 Visual

Aesthetics are defined as a mix of landscape visual character, the context in which the landscape is viewed (view/user groups), and the scenic integrity of the landscape. The existing transmission line structures range between 85 and 140 feet in height with an average height of 100 feet. The anticipated heights of the proposed structures for the Project range between 75 and 160 feet, with an average height of 125 feet. The existing Reusens – Roanoke 138-kV Line primarily crosses rolling terrain at the foothills of the Blue Ridge Mountains with steeper terrain near the City of Roanoke. The eastern and western extents of the Study Area are developed residential communities while the central portion of the Study Area consists of open agricultural fields, farmland, and forested areas with scattered residential and commercial development (see Attachment C for photographs of the Study Area).

The line route for the Project largely uses or parallels the existing transmission line ROW. Replacing infrastructure where it already exists avoids new visual impacts to the surrounding community and landscape. Additionally, large sections of the line route that parallels or deviates from the existing ROW is largely located in the rural and forested areas where

vegetative cover can mitigate visual impacts. In areas where residences are in close proximity to the ROW, the Company intends to use monopole structures to reduce the structure footprint and visual presence. By rebuild the existing transmission line in or near the existing ROW that was established in the 1920s, significant visual impacts are not anticipated as the overall character of the community will not be changed.

The line route between the Vinton and Roanoke Substations crosses the Blue Ridge Parkway and Roanoke River (Attachment B, Map 7) within or parallel to the existing transmission line ROW. At the Blue Ridge Parkway crossing, the line route uses the existing ROW to minimize new visual impacts that result from new ROWs. The Project crosses a section of the Roanoke River that is designated as a qualified scenic river approximately two miles east of the Company's Roanoke Substation. The line route crosses the Roanoke River in new ROW parallel to the existing transmission line to reduce the required outage duration and avoid a garage that has encroached on the existing ROW. Lattice steel towers, which are similar to the existing structures, will be used for the Blue Ridge Parkway and Roanoke River crossings. Visual impacts to the Blue Ridge Parkway and Roanoke River are expected to be minimal as the line will cross the resources in a similar location and have similar characteristics as the existing facilities.

5.6 Constructability

Constructability is the ability to efficiently and cost effectively engineer, acquire ROW, construct, operate, and maintain the proposed transmission line. Major factors include safety, topography, condensed ROWs, heavy angles, access, ability to parallel or use existing ROWs, features, proximity to major highways, etc.

Due to the size of the Project, the outage limitations on the line, and the constraints in the Study Area, rebuilding the entire 43-mile-long Reusens – Roanoke 138-kV Line within the existing ROW is not feasible. The line route primarily uses or parallels the existing transmission line ROW, which minimizes construction risks as crews can use existing access roads and minimize new disturbance during tree clearing and construction activities. Outages will be required to construct approximately 18.0 miles of the line route that uses the existing ROW to minimize new impacts to residential development, including approximately 6.0 miles in the City of Lynchburg and approximately 3.0 miles in the City of Roanoke where development is adjacent to the existing ROW, and to parcels with conservation easements. The Company's planners confirmed these sections can be rebuilt within the existing ROW during the spring and fall outage windows.

Paralleling existing infrastructure or crossing existing transmission lines, distribution lines, and pipelines may require specialized construction techniques and scheduled outages. Approximately 20.0 miles of the Project parallels a Colonial Pipeline Company ROW. The Siting

Team met with the Colonial Pipeline Company in December 2021 to introduce the Project, gather information about the pipeline ROW, and begin coordination. The Project crosses several existing Company-owned transmission lines ranging from 69 kV to 765 kV within the existing ROW as well as a 115-kV transmission line owned by Dominion Energy Virginia, which is crossed near the existing ROW. The Company's planners met with Dominion Energy Virginia in March 2022 to introduce the Project and begin coordination of outages. Additional coordination with the Colonial Pipeline Company and Dominion Energy Virginia will occur throughout the Project to determine constructability requirements and mitigation options, as applicable.

Letters from the Virginia Department of Transportation's Lynchburg and Salem district offices, dated March 2 and March 3, respectively, did not identify planned transportation projects that may be impacted by the Project. Additional coordination with the Virginia Department of Aviation, Federal Aviation Administration, and the Virginia Department of Transportation will be conducted as applicable during the Project's permitting and construction phases.

6.0 PROPOSED ROUTE

The Proposed Route for the Project is approximately 43 miles long and is largely within or parallel to the existing transmission line ROW with minor deviations in three focus areas to minimize impacts to the human and natural environments as well as outage durations.

The Proposed Route begins at the Company's existing Reusens Substation (200 Old Trents Ferry Road) in the City of Lynchburg, west of the James River. The Proposed Route uses the existing ROW for 3.0 miles from Reusens Substation to U.S. Route 501 (Boonsboro Road) and crosses Old Trents Ferry Road, State Route 645 (Trents Ferry Road), Locksview Road, Inglewood Road, Clearview Drive, Royal Oaks Way, Royal Oak Drive, Meriwether Road, and Country Club Drive. The Proposed Route deviates slightly from the existing ROW to cross U.S. Route 501 (Boonsboro Road) and avoid a residential building within the existing ROW and then is within the existing ROW for approximately 3.0 miles to the Company's existing Coffee Substation (2121 Old Farm Road) in Bedford County, crossing Two Creek Drive and State Route 659 (Hawkins Mill Road).

Continuing southwest from the Coffee Substation, the Proposed Route is located within the existing ROW for about 1.0 mile and crosses State Route 660 (Old Farm Road). Just before crossing State Route 621 (Cottontown Road), the Proposed Route shifts to parallel the south side of the existing transmission line for 1.5 miles, then uses the existing ROW for about 0.7 mile to cross State Route 663 (Perrowville Road), and shifts back to the south side of the existing transmission line to parallel the existing ROW for about 1.0 mile to the existing Ivy Hill Substation (2523 White Road).

From the Ivy Hill Substation, the Proposed Route parallels the north side of the existing transmission line ROW for about 1.5 miles crossing State Route 665 (White Road) and Heavens View Drive, then uses the existing ROW to cross State Route 643 (Cifax Road), and parallels the north side of the existing transmission line ROW for another 1.0 mile crossing Deer Track Meadows Lane and State Route 670 (Roaring Run Road). West of State Route 670 (Roaring Run Road), the Proposed Route is within the existing ROW for about 1.5 miles and then parallel to the south side of the existing ROW for about 3.0 miles across State Route 637 (Hawkins Ridge Road), State Route 673 (Benchmark Lane), and Lankford Mill Road. The Proposed Route returns to the existing ROW for approximately 1.0 mile to cross State Route 644 (Lankford Mill Road) and State Route 122 (Big Island Highway). Near the Company's Centerville Substation (1134 Fancy Farm Road), the existing double-circuit transmission line will split into two single-circuit lines that cross State Route 644 (Fancy Farm Road) to accommodate the expansion of the substation.

West of the Centerville Substation, the Proposed Route parallels the existing ROW for about 2.0 miles, starting on the north side and then switching to the south side of the existing transmission line as the Proposed Route turns southwest near Birdwatcher Lane. The Proposed Route crosses State Route 43 (Peaks Road) and then is located within the existing ROW for about 0.5 mile as it crosses State Route 678 (Parker Road) and Chelsea Place. The Proposed Route continues southwest from Chelsea Place parallel to the south side of the existing transmission line for about 1.5 miles to the Company's Moseley Substation (1529 Patterson Mill Road).

After the Moseley Substation, the Proposed Route is generally within the existing ROW for about 1.0 mile across N Fork Road, State Route 680 (Patterson Mill Road), a Norfolk Southern Railroad Company railroad, and U.S. Route 460 (W. Lynchburg Salem Turnpike). Southwest of the highway crossing, the Proposed Route deviates from the existing transmission line for about 1.0 mile to be just south of Mountain View Church and the Bedford Moose Lodge baseball fields. The Proposed Route parallels the south side of the existing transmission line for 1.0 mile across State Route 681 (Magnolia Drive), is within the existing ROW for about 1.0 mile across State Route 684 (Rocky Ford Road), and then parallels the north side of the existing transmission line for about 6.0 miles to cross State Routes 689 (Johnson School Road), 691 (Thaxton Mountain Road), and 755 (Union Church Road), Leftwich Lane, Crestwood Drive, and Saunders Road.

The Proposed Route is located within the existing ROW for 0.5 mile to cross State Route 700 (Bee Hollow Road) and then parallel to the north side of the existing line for about 1.0 mile to cross Grays Lane and State Route 619 (Jordantown Road). Southwest of State Route 619

(Jordantown Road), the Proposed Route uses the existing ROW to cross State Routes 839 (Atkinson Hollow Road), 1320 (Mountain Meadow Drive), 1460 (Village Drive), 1462 (Windy Way), and 1465 (Courtland Drive), Browning Road, and Sunnysdale Court. As it crosses State Route 635 (Jeters Chapel Road), the Proposed Route crosses to the south side of the existing transmission line for approximately 0.5 mile and then crosses to the north side of the existing transmission line across State Route 701 (Mountain Valley Road).

The Proposed Route parallels the north side of the existing ROW for about 2.0 miles across State Route 759 (Jeters Mill Road) and Haldren Lane to an existing Appalachian Power transmission line near British Way. After the junction with the existing transmission line, the Proposed Route continues southwest across British Way to the Company's Vinton Substation (1820 Temple Drive) in Roanoke County and is within the existing ROW for about 2.5 miles as it crosses Chittum Lane, State Routes 24 (Stewartsville Road), 635 (Beagle Club Road), and 1628 (Timberline Trail), the Blue Ridge Parkway approximately 0.2 mile south of mile marker 113, Feather Road, and Feather Garden Circle.

The Proposed Route continues within the existing ROW for about 1.0 mile and crosses State Route 634 (Hardy Road), Finney Drive, and Halifax Circle before shifting to parallel the north side of the existing transmission line for 1.0 mile across the Roanoke River. Southwest of the Roanoke River, the Proposed Route is located within the existing transmission line ROW for about 2.0 miles across Highland Road, Eastland Road SE, Ridge Road SE, Plateau Road SE, King Charles Avenue SE, and Bennington Road SE, ending at the Company's existing Roanoke Substation (1246 Riverland Road) in the City of Roanoke, northeast of Mill Mountain Park.

Final structure types will be determined during final engineering, which includes ground surveys and geotechnical studies. Based on preliminary engineering, the Company anticipates primarily using galvanized steel double-circuit lattice steel towers and steel monopole structures with a low-reflective finish for the Project. The proposed structure heights are anticipated to range from 75 to 160 feet. The average height of the proposed structures is 125 feet, which is approximately 25 feet taller than the average height of the existing structures to meet current design standards. The proposed structures will generally be constructed near their existing locations within or close to the existing ROW.

Ten residences are within the 100-foot-wide ROW of the Proposed Route for the Reusens – Roanoke 138-kV Line. One residence on Village Drive and one on Crestwood Drive in Bedford County currently encroach on the existing 100-foot ROW and are in the conductor zone of the Proposed Route. One residence on Benchmark Lane in Bedford County will encroach on the proposed ROW and be in the conductor zone of the Proposed Route where it is parallel to the

existing ROW. Based on preliminary engineering analysis, the Company expects the Project can be designed and constructed as to keep the remaining seven residences outside of the conductor zone. Accordingly, and subject to completion of final engineering and ROW negotiations with affected landowners, the Company will need to remove three residences from the ROW of the Proposed Route to accommodate the Project.

The Proposed Route minimizes impact to human and natural environments, including agricultural and forestry landscapes. Approximately 18.0 miles of the Proposed Route will be built within the existing ROW due to residential and commercial development and conservation easements that limit the ability to build in new ROW. The remaining 25.0 miles of the Proposed Route is parallel to or near the existing ROW to minimize outage risk and land use impacts. The Proposed Route primarily crosses landowners with existing easements, though supplemental or new easements may be required where the Proposed Route is in new ROW parallel to or near the existing ROW. There are 447 parcels and 337 unique landowners crossed by the 100-foot-wide ROW of the Proposed Route. The Proposed Route is not expected to have a disproportionately high or adverse impact on EJ communities, as defined in the Virginia Environmental Justice Act (§ 2.2-234 *et seq.* of the Code of Virginia), because the Proposed Route is largely within or near the existing transmission line ROW and relocating the Project would result in new impacts to similar EJ communities.

Collectively, the Siting Team determined that the Proposed Route meets the goal of minimizing impacts on land use and the natural and cultural resources along the Project, while avoiding circuitous routes, extreme costs, and non-standard design requirements (Attachment B, Map 9).

Attachment A: Outreach Fact Sheet

REUSENS-ROANOKE

TRANSMISSION LINE REBUILD PROJECT



Appalachian Power representatives plan upgrades to the transmission system in Roanoke, Bedford and Lynchburg. The Reusens-Roanoke Transmission Line Rebuild Project involves rebuilding about 43 miles of 138-kilovolt (kV) electric transmission line and upgrading two substations. Construction begins early 2025 and concludes by late 2028.

WHAT

The project involves:

- Rebuilding about 43 miles of 138-kV electric transmission line parallel to or near the existing right-of-way, which may require acquiring new or updating existing property easements.
- Upgrading the Roanoke Substation.
- Expanding the Centerville Substation.

This project requires approval by the Virginia State Corporation Commission (SCC).

The project team is seeking community input on route options to rebuild the project.

WHY

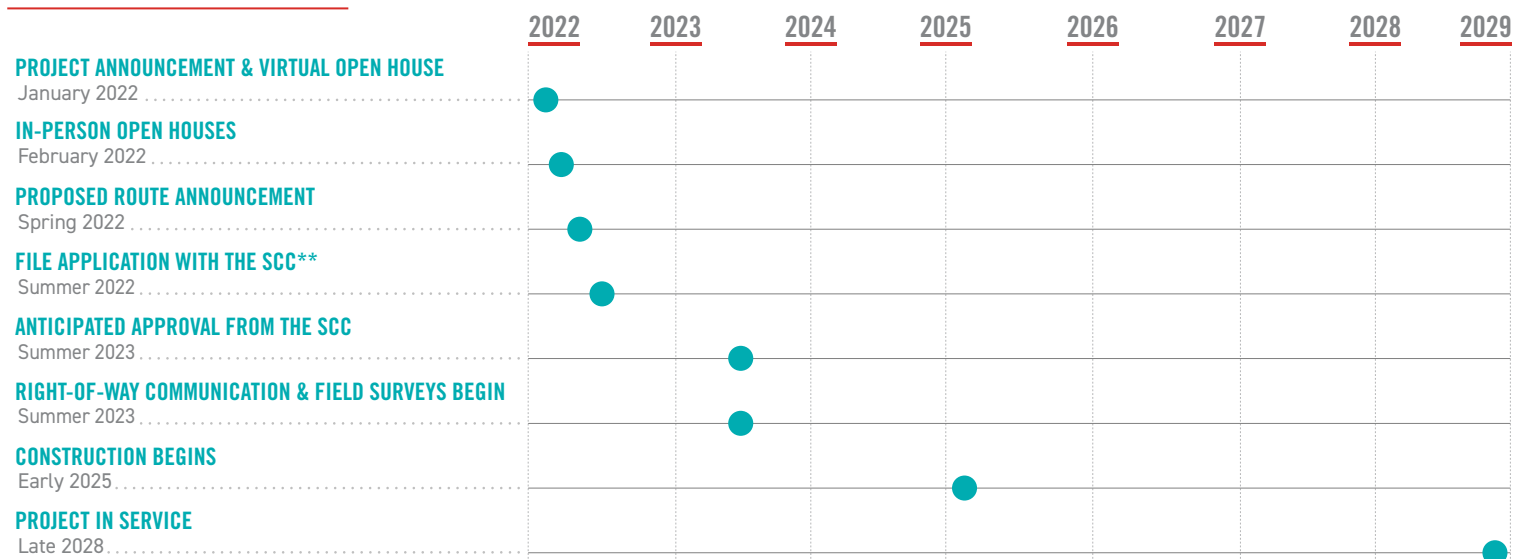
The Reusens-Roanoke transmission line was originally installed between 1926 and 1933. These upgrades replace aging equipment with modern steel structures, addressing physical condition issues and strengthening the local transmission system. Upgrading the Roanoke and Centerville substations replaces aging equipment and updates station configuration, improving reliability and reducing maintenance needs.

WHERE

The upgrades begin at the Roanoke Substation located off Riverland Road Southeast near the Roanoke River in Roanoke. The rebuild continues northeast, traveling through Vinton and crossing US-460 near Bedford. The upgrades continue northeast, crossing US-501 and end at the Reusens Substation near the James River off Old Trents Ferry Road in Lynchburg.

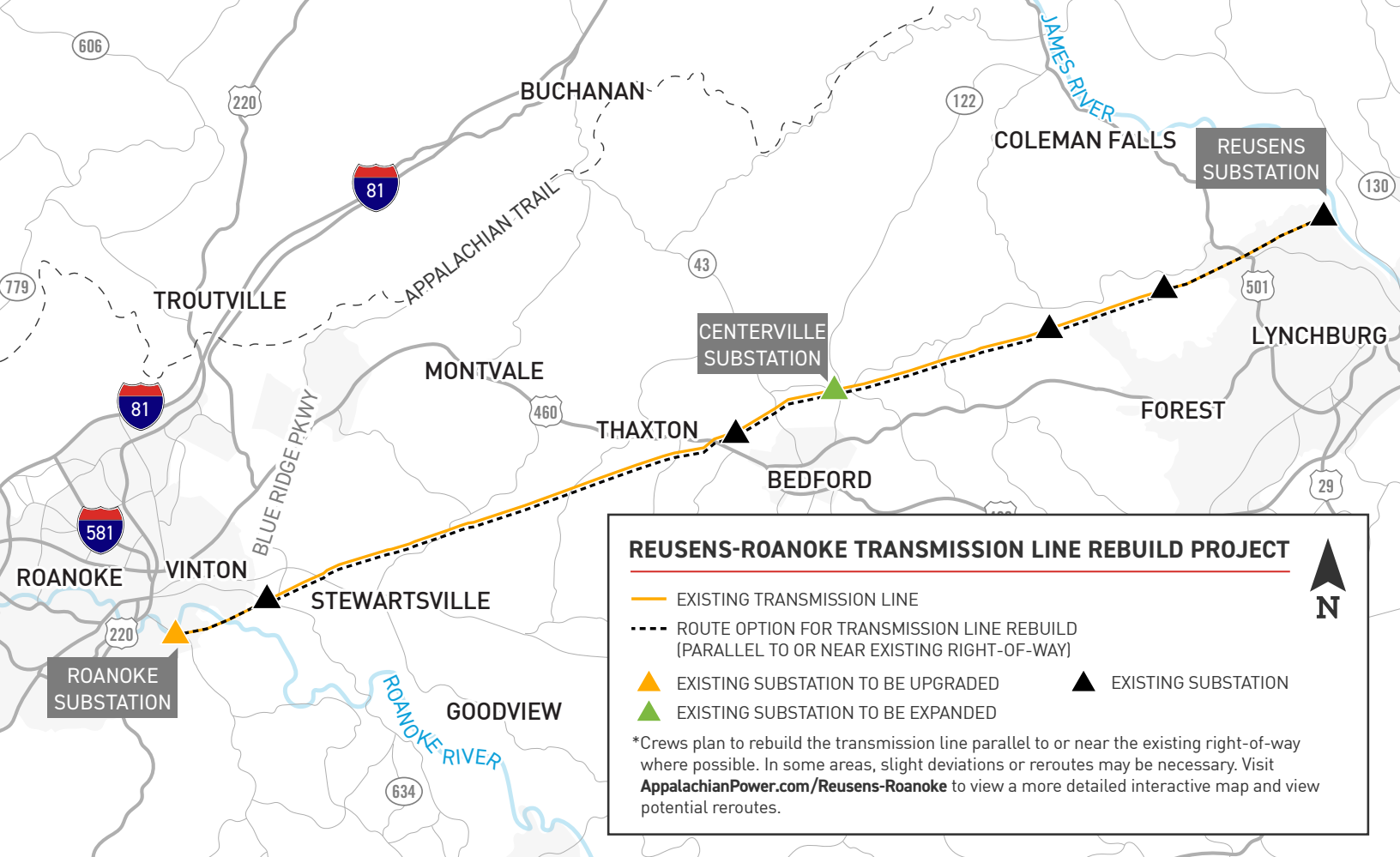
Plans call for crews to rebuild the majority of the power line parallel to the existing line. Crews plan to rebuild some sections of the line near the Reusens and Roanoke substations within existing right-of-way. Right-of-way representatives plan to work with landowners to acquire new or update existing property easements along the line.

PROJECT SCHEDULE



*Timeline subject to change

**Virginia State Corporation Commission

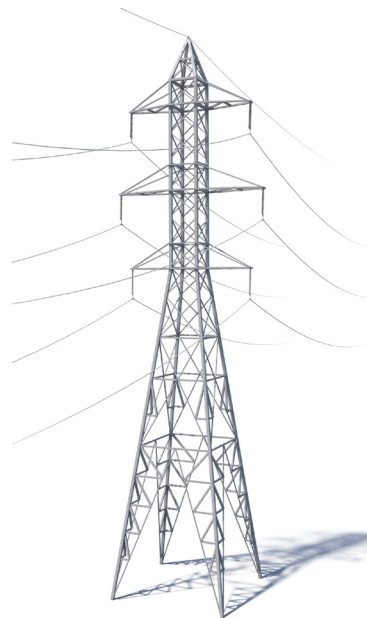


TYPICAL STRUCTURES

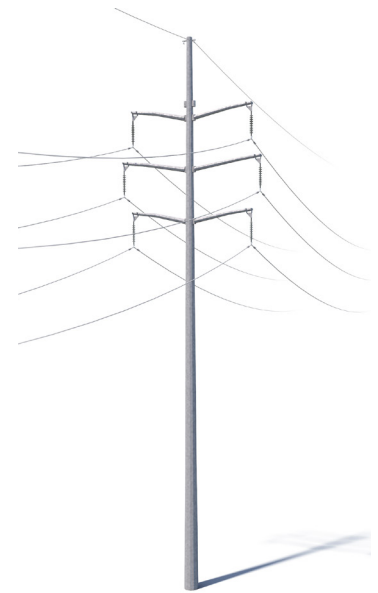
Most of the existing line consists of lattice towers. Crews plan to rebuild the line using lattice towers and single poles. The proposed structures are an average of 35 feet taller than the existing structures.

Proposed Structure Height: **Approximately 100-170 feet***
 Right-of-Way Width: **Approximately 60-100 feet***

At Appalachian Power, we are committed to meeting the energy needs of customers while protecting the environment and natural beauty of the region.



LATTICE TOWER



SINGLE POLE

*Exact structure, height and right-of-way requirements may vary

APPALACHIAN POWER VALUES YOUR INPUT ABOUT THIS PROJECT. PLEASE SEND COMMENTS AND QUESTIONS TO:

NICOLE HODGES

Project Outreach Specialist

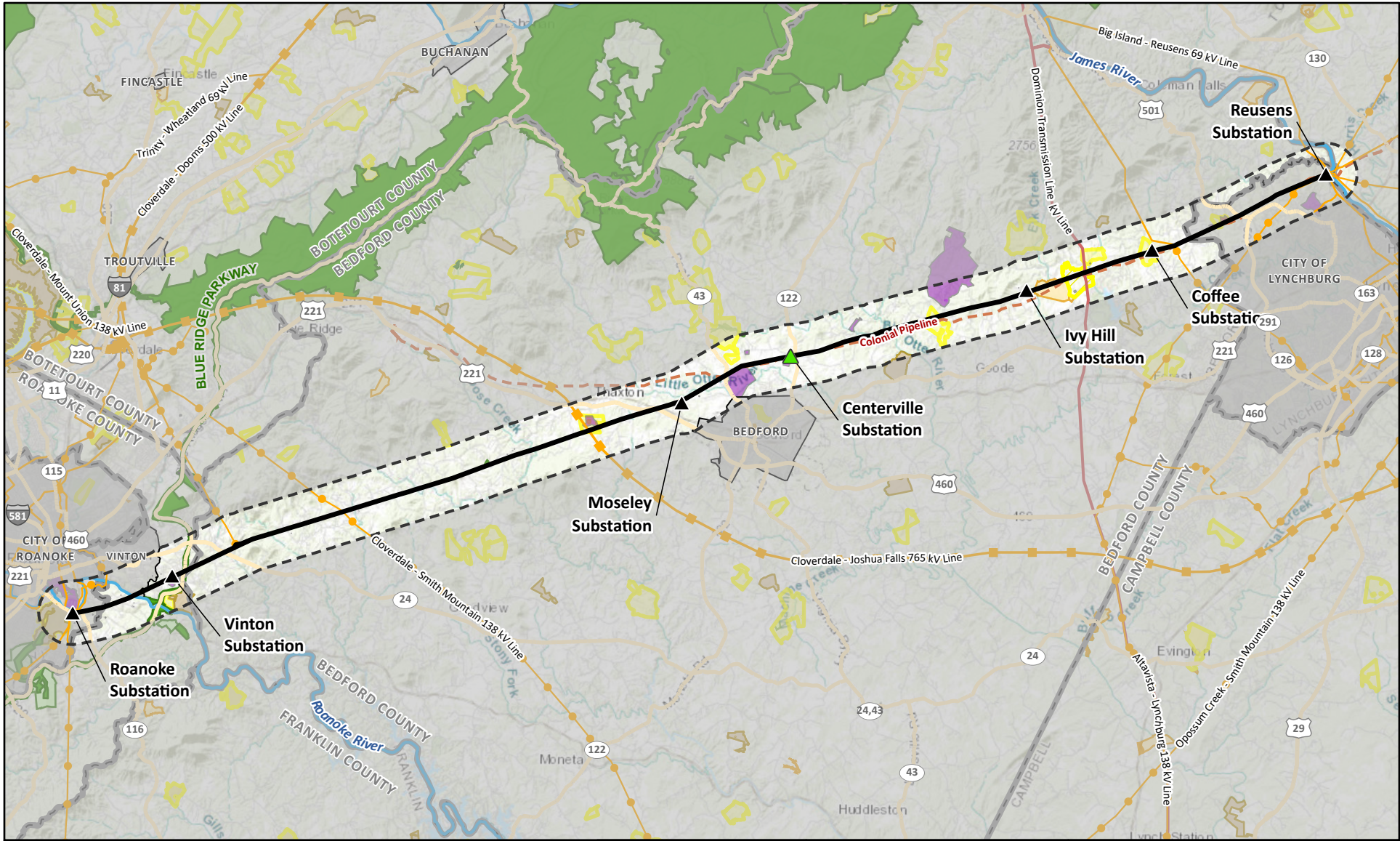
833-313-8743

APCO_Outreach@aep.com

AppalachianPower.com/Reusens-Roanoke



Attachment B: Route Development Maps



- | | | |
|---|--|-------------------------------|
| Study Area | Existing APCo Transmission Line (69 kV or lower) | Federal Conservation Lands |
| Existing Reusens - Roanoke 138 kV Transmission Line | Existing APCo Transmission Line (115-238 kV) | Federal Easement |
| Existing APCo Substation to be Expanded | Existing APCo Transmission Line (345 kV +) | Private Easement |
| Existing APCo Substation | Natural Gas Pipeline | State Easement |
| Existing APCo Transmission Line to be Reconfigured | River (NHD) | VOF Easement |
| Existing Non-APCo Transmission Line | County Boundary | Architectural Resource (VDHR) |
| | Municipality | Historic District (VDHR) |

Roanoke & Bedford Counties,
 Cities of Roanoke & Lynchburg,
 Town of Vinton,
 Virginia

Author: ckunde
 Project: 162806

NAD 1983 State Plane Virginia South
 FIPS 4502 Feet
 Lambert Conformal Conic

October 26, 2022

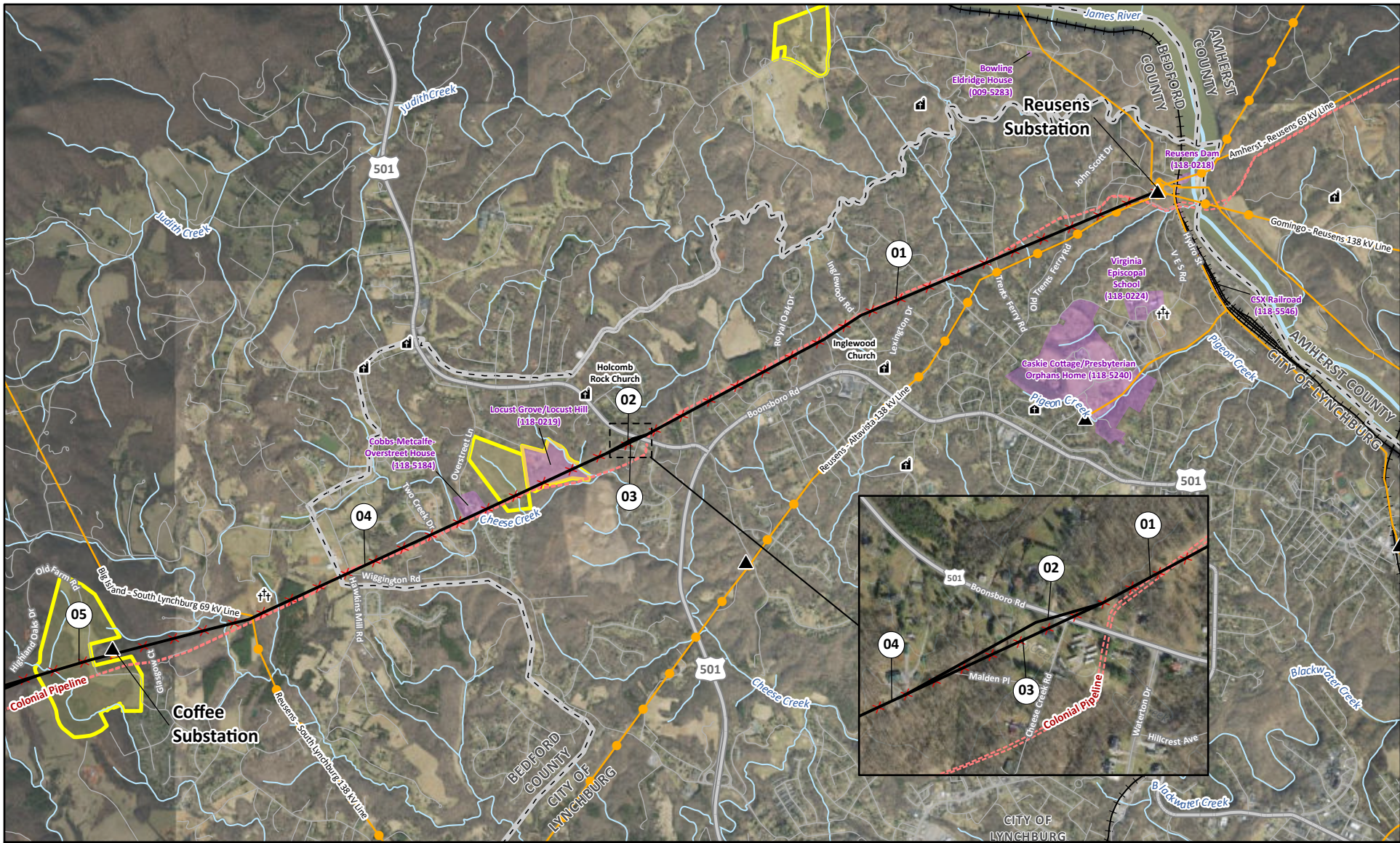


Map 1 Study Area

**Reusens to Roanoke
138 kV Rebuild Project**

APPALACHIAN POWER
An AEP Company
BOUNDLESS ENERGY

0 2.5 5 7.5
Miles



- | | |
|--|---------------------------------|
| ▲ Existing APCo Substation | — Road |
| — Study Segment | — Highway |
| — Existing APCo Transmission Line (69 kV or lower) | — Stream (NHD) |
| — Existing APCo Transmission Line (115-238 kV) | — River (NHD) |
| — Existing APCo Transmission Line to be Retired | — Railroad |
| †† Cemetery | — Natural Gas Pipeline |
| ☑ Place of Worship | — County Boundary |
| | — Architectural Resource (VDHR) |
| | — VOF Easement |

City of Lynchburg,
Bedford County,
Virginia

Author: ckunde
Project: 162806

NAD 1983 State Plane Virginia South
FIPS 4502 Feet
Lambert Conformal Conic

August 10, 2022

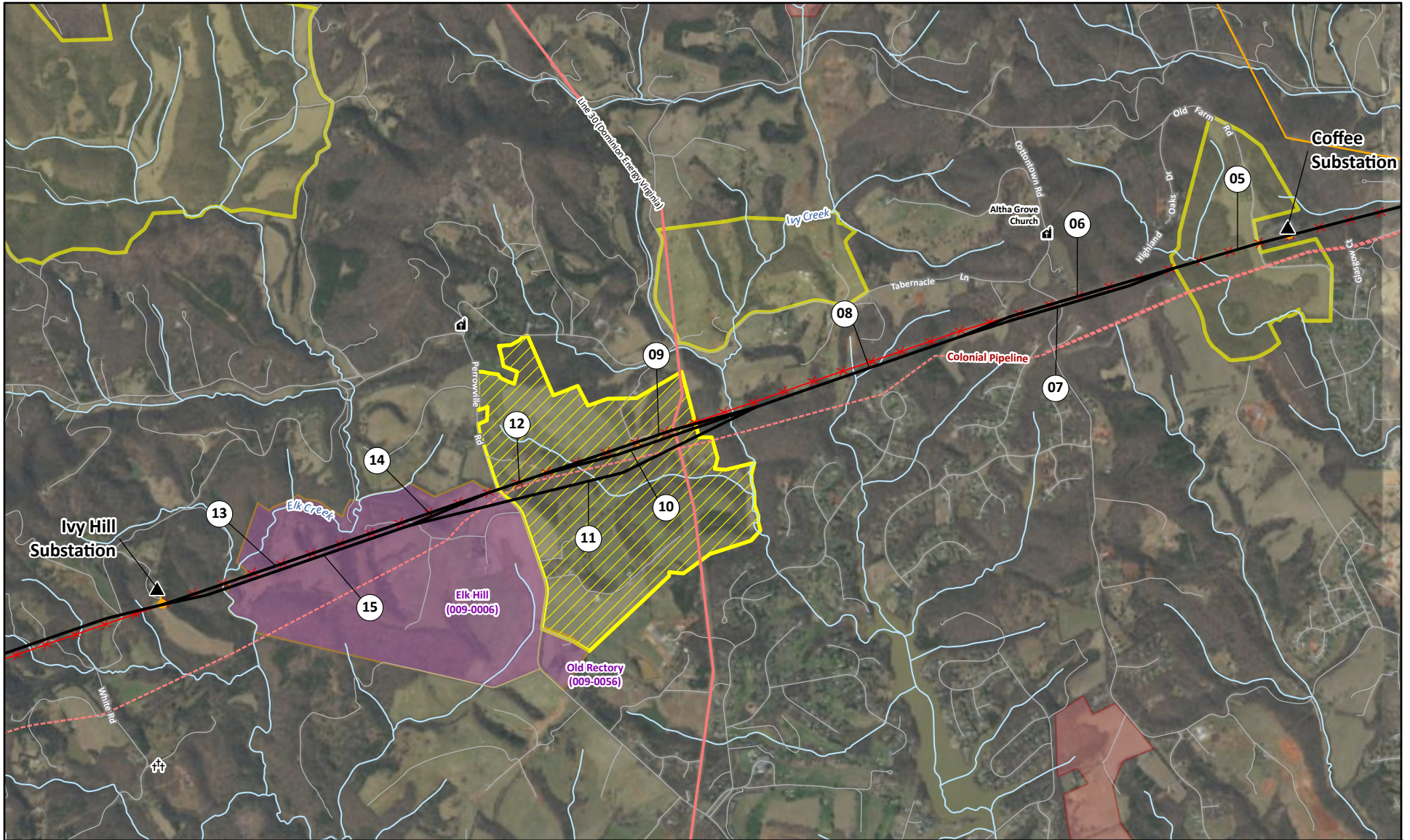


Map 2
Reusens to Coffee Rebuild Section
Study Segments

Reusens to Roanoke
138 kV Rebuild Project

APPALACHIAN POWER
An AEP Company
BOUNDLESS ENERGY

0 1
Miles



▲ Existing APCo Substation	✂ Existing APCo Transmission Line to be Retired	Architectural Resource (VDHR)
— Study Segment	†† Cemetery	Proposed VOF Easement
— Existing APCo Transmission Line (69 kV or lower)	⛪ Place of Worship	Private Easement
— Existing APCo Transmission Line (115-238 kV)	— Road	State Easement
● Existing Non-APCo Transmission Line	- - - Natural Gas Pipeline	VOF Easement
— Existing Non-APCo Transmission Line	— Stream (NHD)	

Bedford County, Virginia

Author: ckunde
Project: 162806

NAD 1983 State Plane Virginia South
FIPS 4502 Feet
Lambert Conformal Conic

August 10, 2022

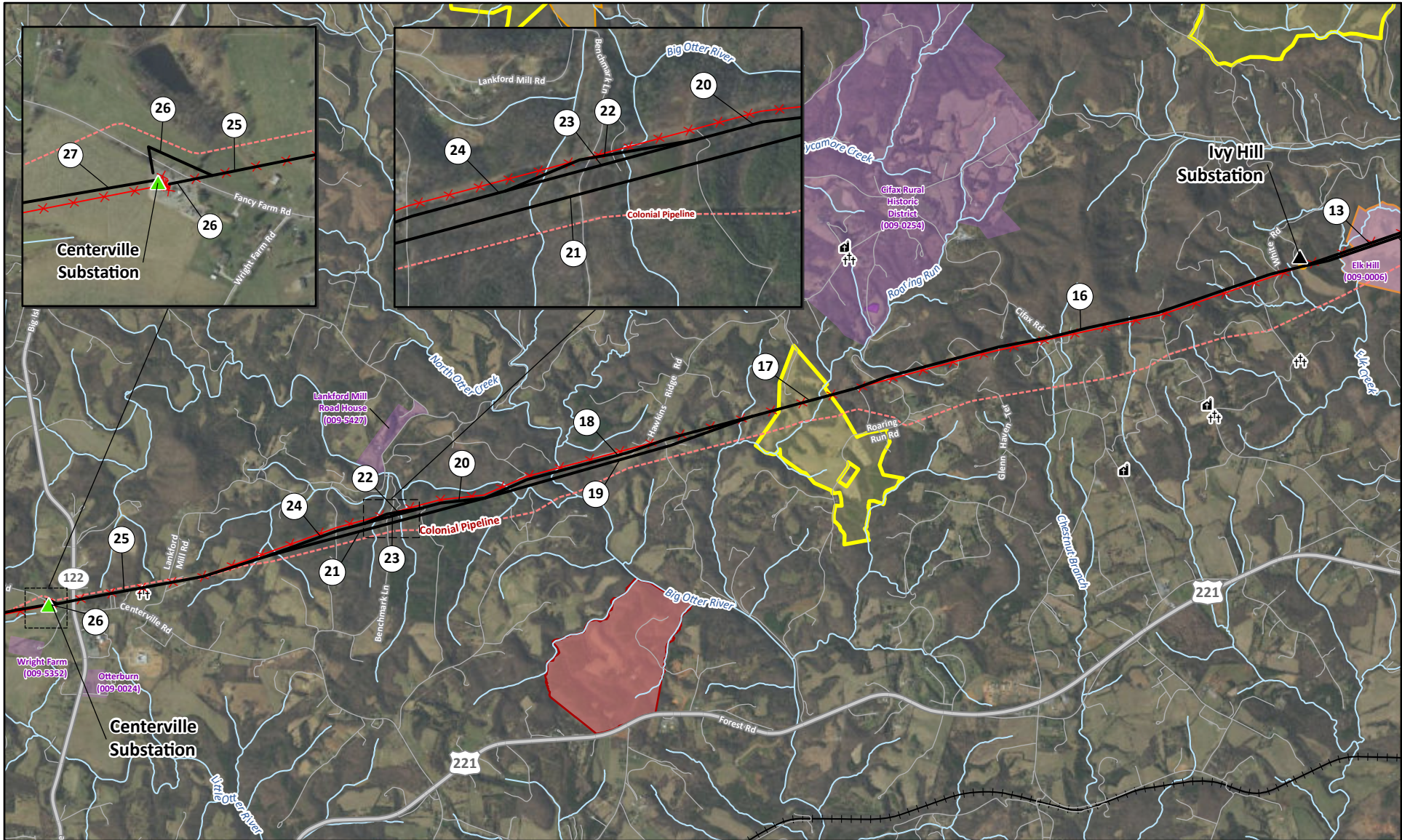


Map 3
Coffee to Ivy Hill Rebuild Section
Study Segments

Reusens to Roanoke
138 kV Rebuild Project

an AEP Company
BOUNDLESS ENERGY

0 1
Miles



Existing APCo Substation to be Expanded	Existing APCo Transmission Line to be Retired	Railroad
Existing APCo Substation	Cemetery	Stream (NHD)
Study Segment	Place of Worship	Architectural Resource (VDHR)
Existing APCo Transmission Line (115-238 kV)	Highway	Historic District (VDHR)
Natural Gas Pipeline	Road	Private Easement
		State Easement
		VOF Easement

Bedford County, Virginia

Author: ckunde
Project: 162806

NAD 1983 State Plane Virginia South
FIPS 4502 Feet
Lambert Conformal Conic

August 10, 2022

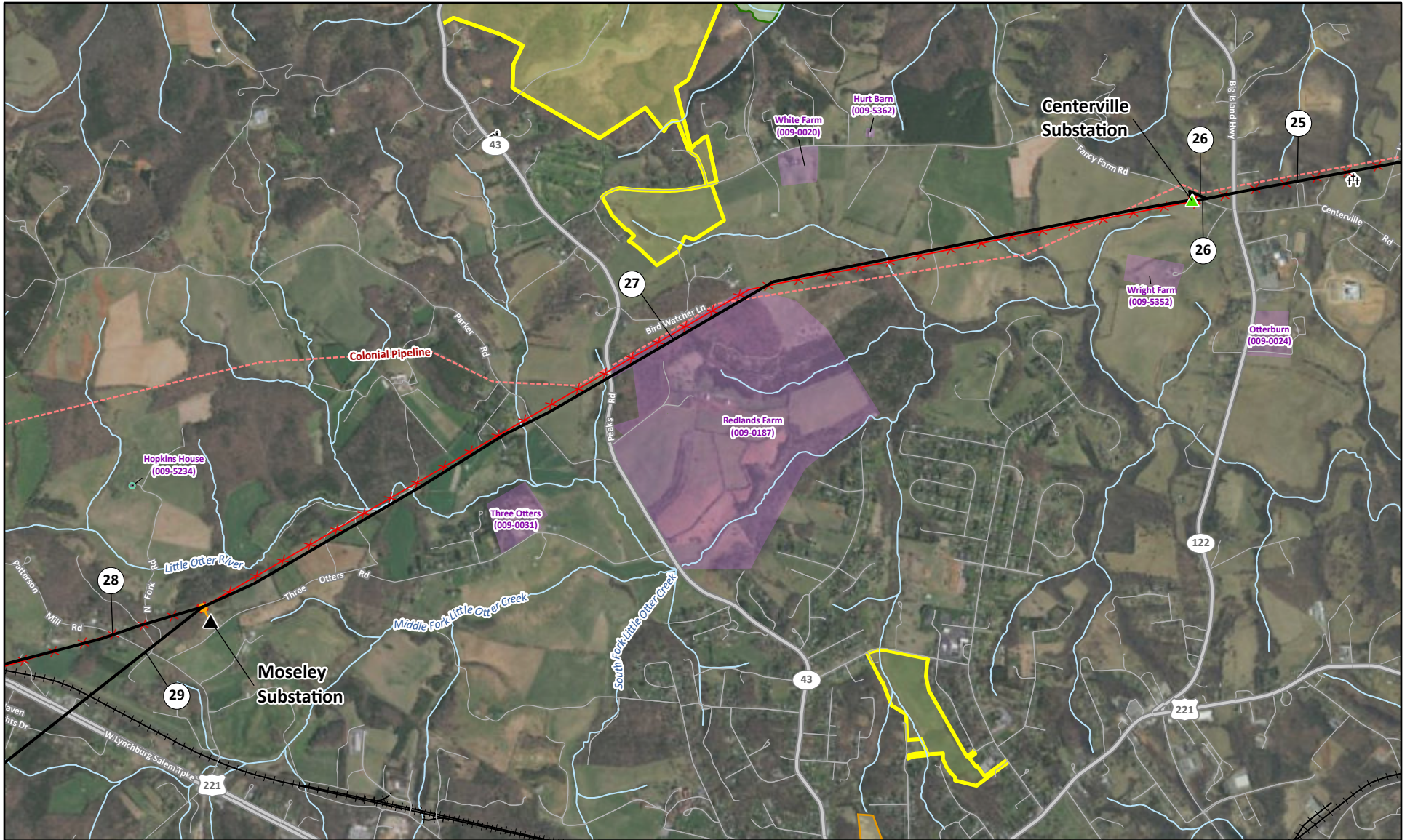


Map 4
Ivy Hill to Centerville Rebuild Segment
Study Segments

Reusens to Roanoke
138 kV Rebuild Project

An AEP Company
BOUNDLESS ENERGY

0 1
Miles



▲ Existing APCo Substation to be Expanded	▲ Existing APCo Substation	— Study Segment	— Existing APCo Transmission Line (115-238 kV)	✕✕ Existing APCo Transmission Line to be Retired	†† Cemetery	⛪ Place of Worship	— Highway	— Road	- - - Natural Gas Pipeline	++ Railroad	— Stream (NHD)	— Architectural Resource (VDHR)	— Federal Easement	— State Easement	— VOF Easement
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**Bedford County,
Virginia**

Author: ckunde
Project: 162806

NAD 1983 State Plane Virginia South
FIPS 4502 Feet
Lambert Conformal Conic

▲

August 10, 2022

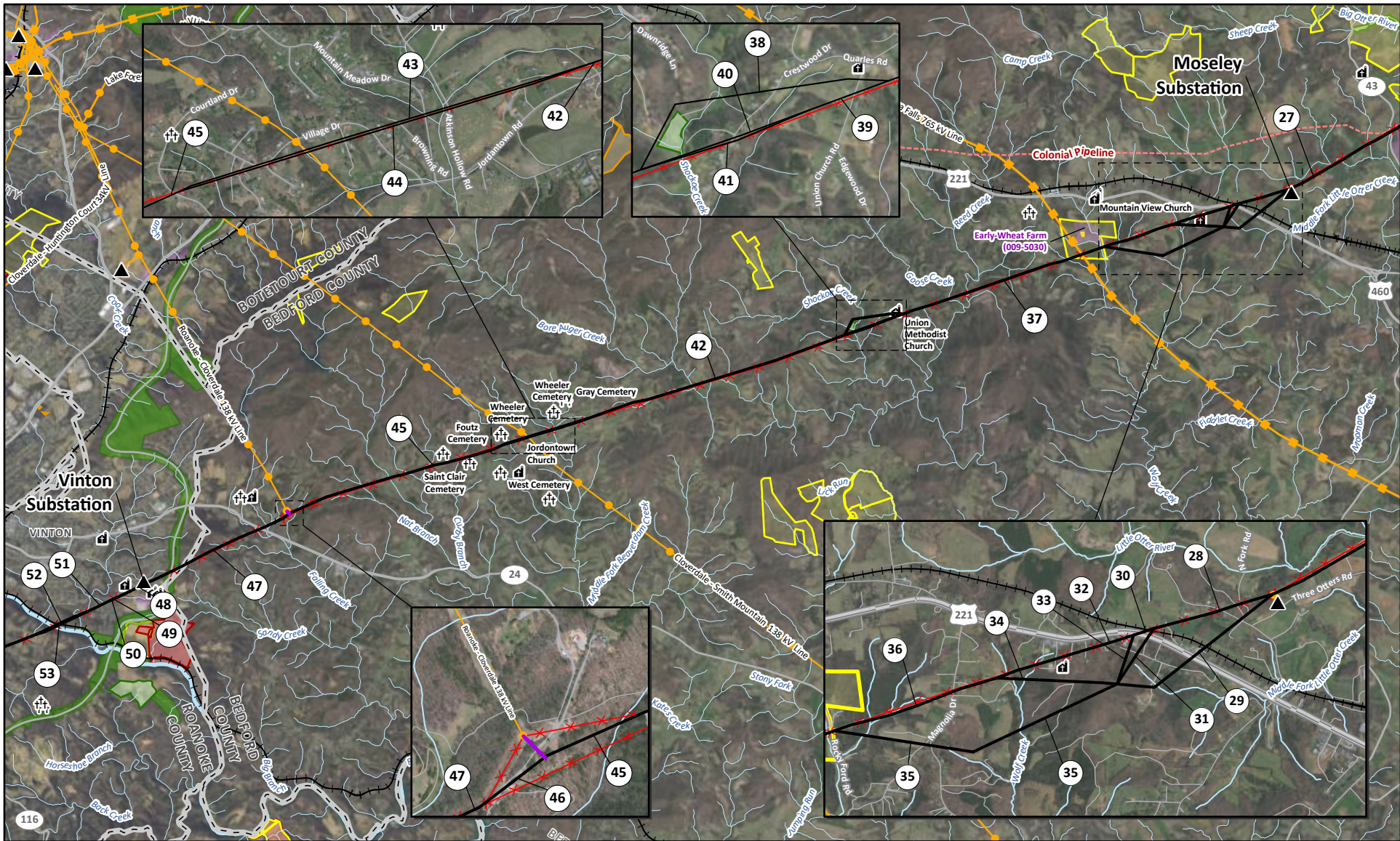


Map 5
Centerville to Moseley Rebuild Section
Study Segments

Reusens to Roanoke
138 kV Rebuild Project

APPALACHIAN POWER
An AEP Company
BOUNDLESS ENERGY

0 ————— 1
Miles



- | | | |
|--|--|---------------------------------|
| ▲ Existing APCo Substation | — Existing APCo Transmission Line (345 kV +) | — River (NHD) |
| — Study Segment | †† Cemetery | — Stream (NHD) |
| — Existing APCo Transmission Line to be Reconfigured | ⛪ Place of Worship | — Architectural Resource (VDHR) |
| — Existing APCo Transmission Line to be Retired | ⛪ Highway | — Historic District (VDHR) |
| — Existing APCo Transmission Line (69 kV or lower) | — Road | — Federal Conservation Lands |
| — Existing APCo Transmission Line (115-238 kV) | — County Boundary | — Federal Easement |
| | — Natural Gas Pipeline | — Private Easement |
| | — Railroad | — State Easement |
| | | — VOF Easement |

Bedford & Roanoke Counties, Virginia

Author: ckunde
Project: 162806

NAD 1983 State Plane Virginia South
FIPS 4502 Feet
Lambert Conformal Conic

August 10, 2022

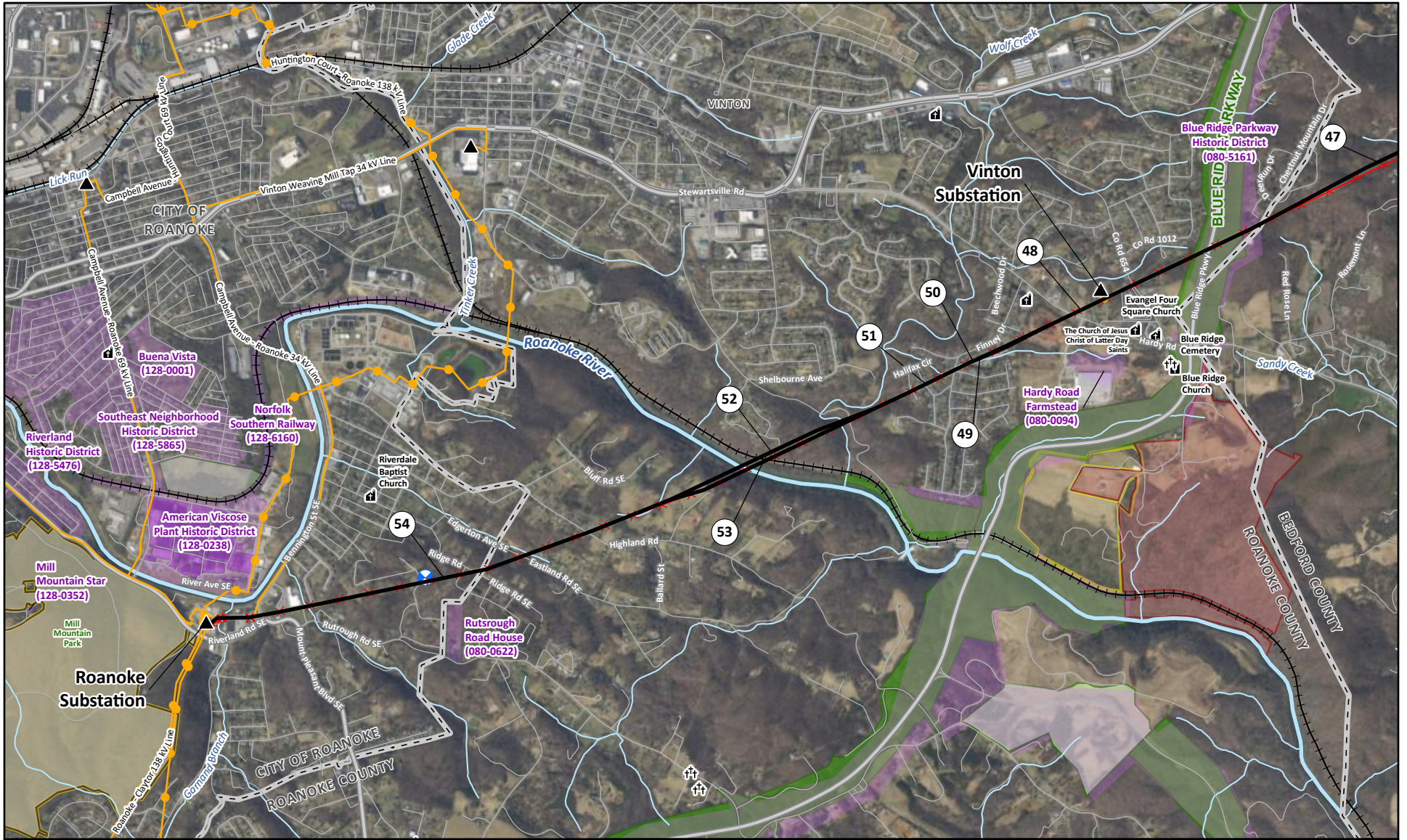


Map 6
Moseley to Vinton Rebuild Section
Study Segments

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an AEP Company
BOUNDLESS ENERGY

Reusens to Roanoke
138 kV Rebuild Project

0 1 2 3
Miles



▲ Existing APCo Substation	⛪ Cemetery	🌳 Recreational Areas
— Study Segment	⛪ Place of Worship	🏠 Architectural Resource (VDHR)
— Existing APCo Transmission Line (69 kV or lower)	— Highway	🏠 Historic District (VDHR)
— Existing APCo Transmission Line (115-238 kV)	— Road	🌳 Federal Conservation Lands
✂ Existing APCo Transmission Line to be Retired	— County Boundary	🌳 Federal Easement
🌊 Water Tower	— Railroad	🏠 Private Easement
	— River (NHD)	🟡 VOF Easement
	— Stream (NHD)	

Roanoke County, City of Roanoke, & Town of Vinton, Virginia

Author: ckunde
Project: 162806

NAD 1983 State Plane Virginia South
FIPS 4502 Feet
Lambert Conformal Conic

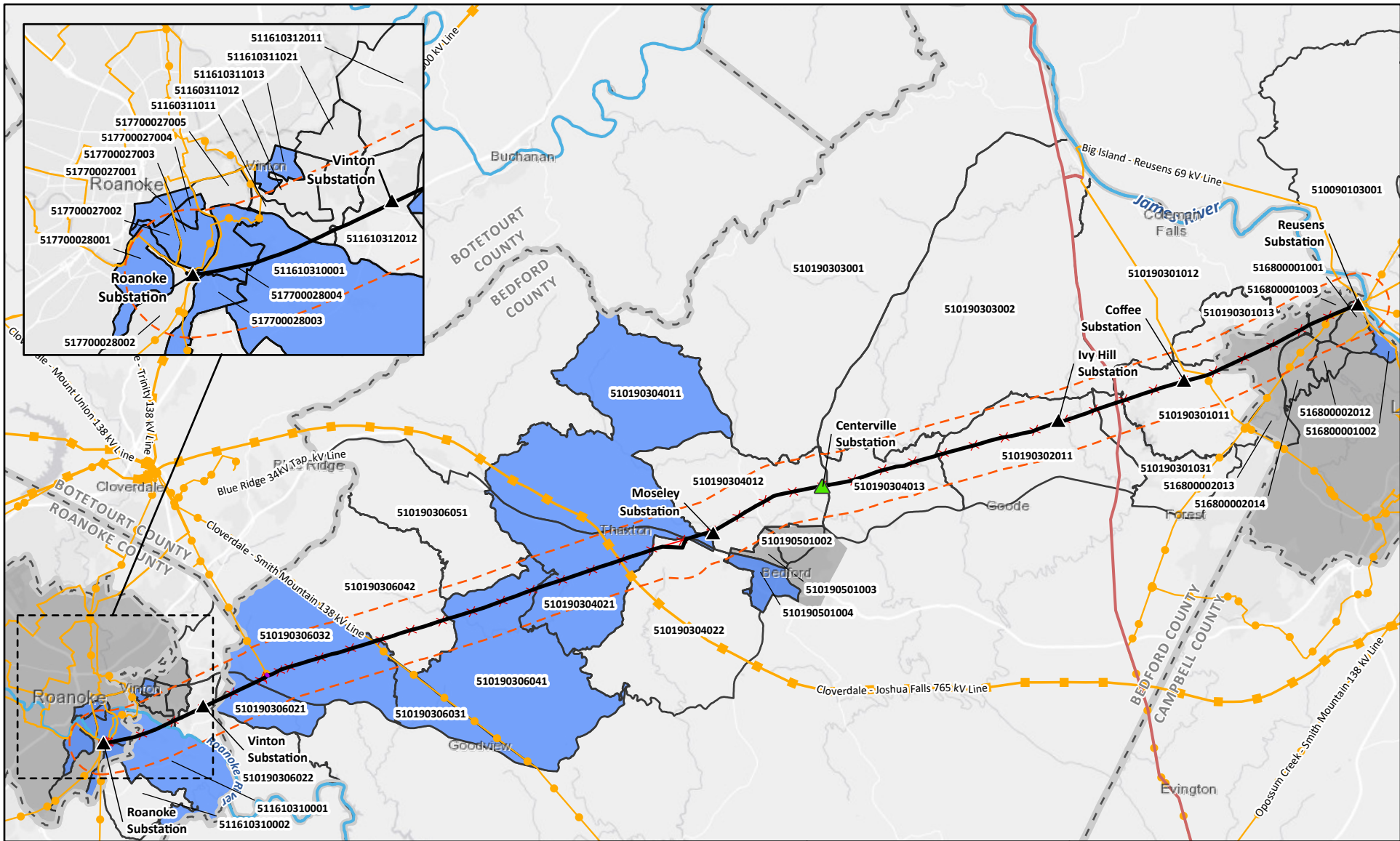
October 26, 2022



Map 7
Vinton to Roanoke Rebuild Segment Study Segments

Reusens to Roanoke 138 kV Rebuild Project

0 1
Miles



Existing APCo Substation to be Expanded	Existing Non-APCo Transmission Line
Existing APCo Substation	Existing APCo Transmission Line (69 kV or lower)
Existing APCo Transmission Line to be Reconfigured	Existing APCo Transmission Line (115-238 kV)
Reusens - Roanoke Rebuild Routes	Existing APCo Transmission Line (345 kV +)
1-mile Study Area	Municipality
County Boundary	

Roanoke & Bedford Counties,
 Cities of Roanoke & Lynchburg,
 Town of Vinton,
 Virginia

Author: ckunde
 Project: 162806

NAD 1983 State Plane Virginia South
 FIPS 4502 Feet
 Lambert Conformal Conic

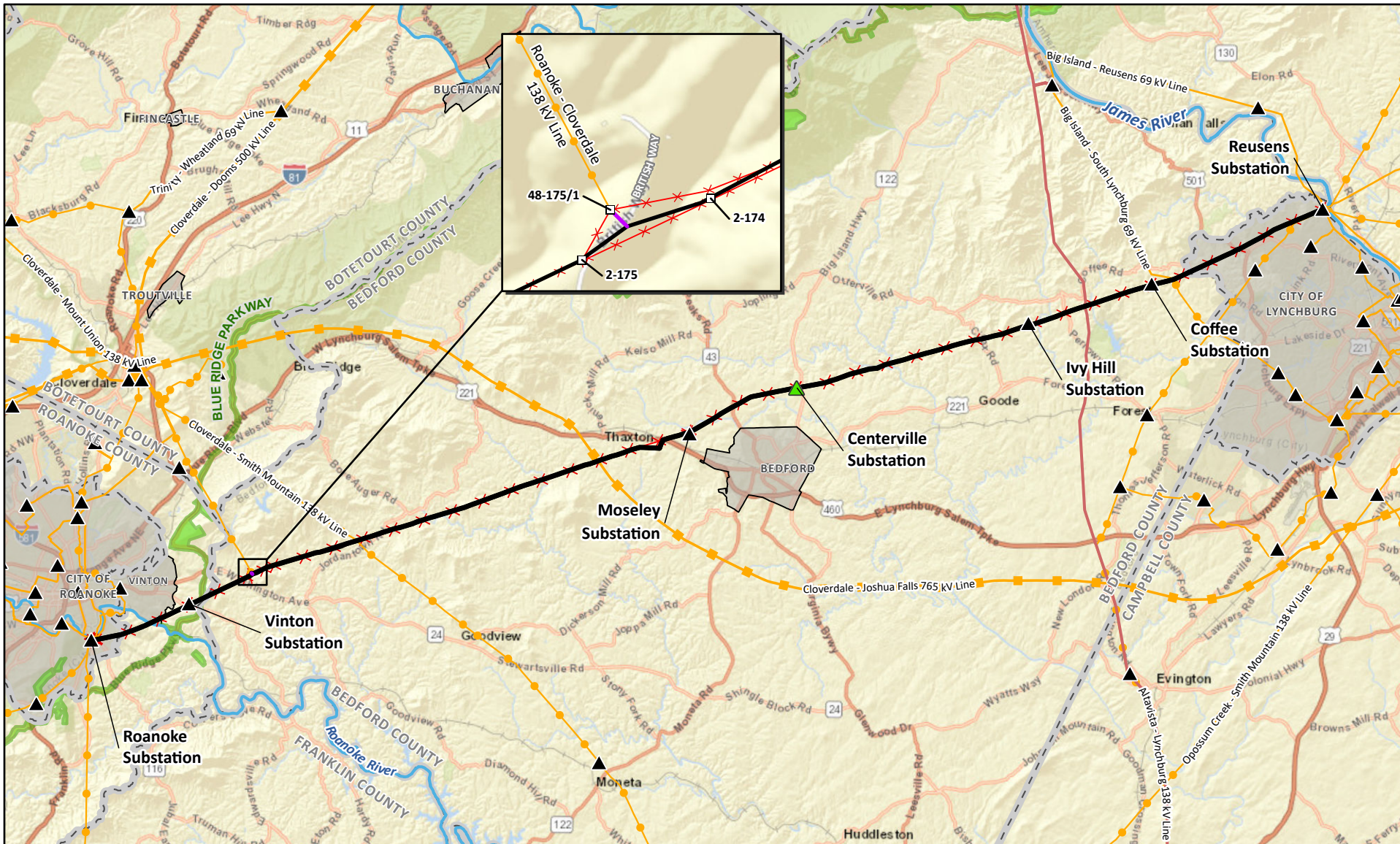
October 28, 2022



Map 8 Rebuild Routes Census Block Groups

**Reusens to Roanoke
 138 kV Rebuild Project**

0 2 4 6
 Miles



- Existing APCo Structure
- Existing APCo Substation to be Expanded
- Existing APCo Substation
- Existing APCo Transmission Line to be Reconfigured
- Reusens - Roanoke 138 kV Line Proposed Route
- Existing Non-APCo Transmission Line
- Existing APCo Transmission Line (69 kV or lower)
- Existing APCo Transmission Line (115-238 kV)
- Existing APCo Transmission Line (345 kV +)
- Existing APCo Transmission Line to be Retired
- River (NHD)
- County Boundary
- Blue Ridge Parkway National Park
- Municipality

Cities of Lynchburg & Roanoke,
Bedford & Roanoke Counties,
Town of Vinton,
Virginia

Author: ckunde
Project: 162806

NAD 1983 State Plane Virginia South
FIPS 4502 Feet
Lambert Conformal Conic

October 27, 2022



Map 9 Proposed Route

**Reusens - Roanoke
138 kV Rebuild Project**

APPALACHIAN POWER
An AEP Company
BOUNDLESS ENERGY

0 2 4 6 8
Miles

Attachment C: Study Area Photographs



Photo 1. Residential development in the City of Lynchburg



Photo 2. Residential development in the City of Lynchburg



Photo 3. Rolling terrain in Bedford County



Photo 4. Mountainous terrain in Bedford County



Photo 5. Residential development in the City of Roanoke



Photo 6. Residential development in the City of Roanoke

Attachment D: Data Collection Summary

Data Source	Description
GIS Data	See Attachment E.
Field Inspections	Siting Team members conducted field inspections throughout the Study Area and along the proposed Study Segments in September 2021 and February 2022.
Federal Agencies	<ul style="list-style-type: none"> • USFWS using the IPaC tool [June 2022] • USGS NHD and USFWS NWI databases • Agency letters sent on January 28, 2022 and responses compiled in Attachment F.
State Agencies	<ul style="list-style-type: none"> • VDHR’s Virginia Cultural Resources Information System (VCRIS) database review [2021, 2022] • VDEQ databases [2021, 2022] • VDWR online databases for sensitive species and habitats [2021, 2022] • Agency letters sent on January 28, 2022 and responses compiled in Attachment F.
Local Agencies/Officials	<ul style="list-style-type: none"> • Local Officials – virtual briefing to Bedford and Roanoke Counties, towns of Bedford and Vinton, and City of Roanoke officials by Siting personnel beginning in 2021 and throughout duration of Project. • Bedford and Roanoke County GIS [2021]
Outreach Efforts	<ul style="list-style-type: none"> • Two separate mailings were sent to 1,440 landowner addresses on January 25 and January 31, 2022. The outreach mailings included: <ul style="list-style-type: none"> ○ A postcard (January 25, 2022 mailing) ○ A fact sheet, letter, detailed flyer about transmission line routing, and a comment card with a prepaid postage return envelope (week of January 31, 2021 mailing) ○ A trifold letter with a detachable comment card • Advertisements were circulated on Facebook between January 31 and February 25, 2022, and were targeted toward zip codes crossed by the Project. A video advertisement announcing the Project and inviting the public to attend an open house ran from January 31 to February 10, 2022. A second video advertisement encouraging the public to share input on the Project ran from February 11 to February 25, 2022. • The Company sent each mailing to 125 rental residences in the Jamestown Place and Totera Ridge communities.
Open House(s)	<p>The Company hosted three in-person public open houses to gather landowner and community feedback. These open houses were held from 5 to 7:30 p.m. on:</p> <ul style="list-style-type: none"> • February 8, 2022, at William Byrd Middle School • February 9, 2022, at Montvale Elementary School • February 10, 2022, at Boonsboro Elementary School
Website and Mailed-In Comments	As of October 1, 2022, a total of 107 comments were returned to the Company via comment cards, emails, or phone calls.

Attachment E: GIS Data Sources

Attachment E. GIS Data Sources

Siting Criteria	Source	Description
	Land Use	
Number of parcels crossed by the ROW	Bedford County (12/2021); Roanoke County (12/2021)	Count of the number of parcels crossed by the ROW
Number of residences within 500 feet of the route centerline	Digitized from LiDAR survey results (August 2020), Virginia Information Technologies Agency [VITA] Imagery (2019), and Google Earth Imagery (2017,2019)	Count of the number of residences within the ROW and within 500 feet of potential routes
Number of commercial buildings within 500 feet of the route centerline	Digitized from LiDAR survey results (August 2020), Virginia Information Technologies Agency [VITA] Imagery (2019), and Google Earth Imagery (2017,2019)	Count of the number of commercial buildings within the ROW and within 500 feet of potential routes
Land use acreage and distance crossed by the ROW and acreage within 50 feet of the route centerline	National Land Cover Database [NLCD] (2019)	The NLCD 2019 (NLCD 2019) compiled by the Multi-Resolution Land Characteristics (MRLC) Consortium includes 15 classes of land cover from Landsat satellite imagery
Acres of conservation easements crossed	National Conservation Easement Database (NCED) (2020)	Private conservation easements crossed by the routes from the NCED which is comprised of voluntarily reported conservation easement information from land trusts and public agencies
Acres of agricultural district land crossed	National Land Cover Database [NLCD] (2019)	Protected land that is devoted exclusively to agricultural production or devoted to and qualified for compensation under a federal land retirement or conservation program that is at least 10 acres in size, or produces an average yearly gross income of at least \$2,500 during a 3-year period
Number of archeological resources within the ROW and within 250 feet	VDHR's VCRIS (2022)	Previously identified archeological resources listed or eligible on the National Register of Historic Places (NRHP) acquired through VDHR's VCRIS (2021)

Attachment E. GIS Data Sources

Siting Criteria	Source	Description
Number of historic architectural resources within the ROW, within 1 mile	VDHR's VCRIS (2022)	Previously identified historic architectural resource sites and districts listed or eligible on the NRHP acquired through VDHR's VCRIS (2021)
Institutional uses (schools, places of worship and cemeteries) within 1000 feet of the route centerline	U.S. Geological Survey's (GNIS) 2021	This dataset includes the locations of cemeteries, churches, hospitals, parks, and schools. Features within 1000 feet of potential routes were field verified.
Airfield and heliports within 1 miles of the route centerline	U.S. Geological Survey's (GNIS) 2021 and the Federal Aviation Administration (FAA) database 2020	Distance from airfields and heliports
Natural Environment		
Forest clearing within the ROW	Digitized based on Virginia Geographic Information Network VGIN (2019) and Google Earth (2017;2019); NLCD Tree Canopy Cover (2016)	Acres of forest within the ROW
Number of National hydrography dataset (NHD) stream and waterbody crossings within the ROW	USGS 2022	The NHD is a comprehensive set of digital spatial data prepared by the USGS that contains information about surface water features such as lakes, ponds, streams, rivers, springs and wells
Acres of National Wetland Inventory (NWI) wetland crossings within the ROW	U.S. Fish and Wildlife Service (USFWS) (2022)	The NWI produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats
Acres of 100-year floodplain crossing within the ROW	U.S. Federal Emergency and Management Agency (FEMA) 2008	Acres of 100-year floodplain within the ROW
Miles of public lands crossed by the route	The Protected Areas Database of the United States (PAD-US); VA-DCR, Natural Heritage	Miles of federal, state and local lands crossed by the ROW

Attachment E. GIS Data Sources		
Siting Criteria	Source	Description
	Conservation Lands Database (2020)	
Threatened, endangered, rare or sensitive species occurrence within the Project vicinity	U.S. Fish and Wildlife Service Critical Habitat Report (2021)	Known occurrences; locations of potential habitat based on land use
Percent of hydric soils within the ROW	United States Department of Agriculture (USDA-NRCS), Natural Resources Conservation Service Soil Survey Geographic (SSURGO) Database (2021)	Percent of soil associations crossed by the ROW characterized as hydric, predominantly hydric, partially hydric and non-hydric
Percent of prime farmland soils and soils of statewide importance within the ROW	USDA-NRCS SSURGO Database (2021)	Percent of soil associations crossed by the ROW characterized as prime farmland or farmland of statewide importance
Technical		
Route length	Measured in GIS	Length of route in miles
Number and severity of angled structures	Developed in GIS	Anticipated number of angled structures < 3 degrees, 3 to 45 degrees and over 45 degrees based on preliminary design
Number of road crossings	The Virginia Geographic Information Network (VGIN) - The Road Centerline Program (RCL) (2021)	Count of federal, state and local roadway crossings
Number of pipeline crossings	S&P Global Platts NGL Refined Product Pipelines (2021)	Number of known pipelines crossed by the transmission ROW
Number of transmission line crossings	AEP TGIS Database (2022)	Number of high voltage (100 kV or greater) transmission lines crossed by the ROW
Distance of steep slopes crossed	Derived from seamless Digital Elevation Models (DEMs) obtained	Miles of slope greater than 20 percent crossed by the routes

Attachment E. GIS Data Sources		
Siting Criteria	Source	Description
	from the U.S. Geologic Survey (2021)	
Length of transmission line parallel	AEP TGIS Database (2022)	Miles of the route parallel to existing high voltage transmission lines
Length of pipeline parallel	S&P Global Platts NGL Refined Product Pipelines (2022)	Miles of the route parallel to existing pipelines
Length of road parallel	The Virginia Geographic Information Network (VGIN) - The Road Centerline Program (RCL) (2021)	Miles of the route parallel to existing roadways

Attachment F: Agency Correspondence

**Reusens - Roanoke Transmission Line Rebuild Project
Agency Contact List**

Jurisdiction	Organization	Prefix	First Name	Last Name	Title
STATE	Virginia Department of Wildlife Resources - Wildlife Information and Environmental Services Section	Ms.	Amy	Ewing	Biologist
	Virginia Department of Conservation and Recreation - Natural Heritage Program	Mr.	Wil	Orndorff	Karst Protection Coordinator
	Virginia Department of Conservation and Recreation - Natural Heritage Program	Ms.	René	Hypes	Environmental Review Coordinator
	Virginia Department of Conservation and Recreation - Planning and Recreation	Mr.	Rob	Evans	Natural Area Protection Manager
	Virginia Department of Environmental Quality - Blue Ridge Regional Office	Mr.	Robert	Weld	Regional Director
	Virginia Department of Environmental Quality - Central Office	Ms.	Michelle	Henicheck	Senior Wetland Ecologist
	Virginia Department of Environmental Quality - Office of Environmental Impact Review	Ms.	Bettina	Rayfield	Manager
	Virginia Department of Environmental Quality - Office of Wetland and Stream Protection	Mr.	Jay	Roberts	Manager, Stormwater & Wetlands Program
	Virginia Marine Resources Commission - Habitat Management	Mr.	Randy	Owen	Chief of Habitat Management
	Virginia Department of Agriculture and Consumer Services - Office of Farmland Preservation	Ms.	Jennifer	Perkins	Coordinator
	Virginia Department of Historic Resources - Division of Review and Compliance	Mr.	Roger	Kirchen	Director, Review & Compliance Division
	Virginia Outdoors Foundation	Ms.	Martha	Little	Deputy Director, Stewardship
	Virginia Outdoors Foundation	Mr.	Tommy	Oravetz	Conservation Specialist
	Virginia Department of Forestry	Mr.	Karl	Didier	Manager, Forestland Conservation Program
	Virginia Department of Forestry - Salem Regional Office	Mr.	Joe	Cotner	Senior Area Forester
	Virginia Department of Aviation	Mr.	Rusty	Harrington	Manager, Planning & Environmental Services
	Virginia Department of Aviation	Mr.	Stephen	Smiley	Senior Aviation Planner
	Virginia Department of Energy - Geology and Mineral Resources	Mr.	David	Spears	State Geologist
	Virginia Department of Health - Office of Drinking Water	Mr.	Jeffrey	Wells	Director, Danville Field Office
	Virginia Department of Transportation - Lynchburg District	Mr.	Chris	Winstead	District Engineer
	Virginia Department of Transportation - Salem District	Mr.	Ken	King	District Engineer
	Virginia Department of Transportation - Lynchburg District	Mr.	Rick	Youngblood	District Planner
	Virginia Department of Transportation - Salem District	Mr.	Michael	Gray	District Planner
	FEDERAL	U.S. Army Corps of Engineers - Norfolk District	Ms.	Jennifer	Serafin
U.S. Army Corps of Engineers - Norfolk District					Regulator of the Day
U.S. Environmental Protection Agency - Region 3		Mr.	Adam	Ortiz	Regional Administrator
U.S. Fish & Wildlife Service - Virginia Ecological Services		Ms.	Cindy	Schulz	Field Supervisor
U.S. Fish & Wildlife Service - Virginia Ecological Services		Mr.	Troy	Andersen	Supervisory Fish & Wildlife Biologist
U.S. Department of Agriculture - Natural Resources Conservation Service		Mr.	Edwin	Martinez-Martinez	State Conservationist
U.S. Department of Agriculture - Natural Resources Conservation Service		Mr.	John	Harper	State Soil Scientist
U.S. Department of Transportation - Federal Highway Administration, Virginia Division		Mr.	John	Simpkins	Team Lead, Planning and Environment



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

PHONE 406-698-1198

January 28, 2022

Subject: Appalachian Power: Reusens – Roanoke Transmission Line Rebuild Project in
Roanoke, Bedford, and the City of Lynchburg, Virginia

Dear:

Appalachian Power is proposing the Reusens – Roanoke Transmission Line Rebuild Project, which will rebuild an existing transmission line between the cities of Lynchburg and Roanoke, Virginia, and upgrade two existing substations (the Project). Appalachian Power contracted POWER Engineers to conduct route selection studies and prepare the Certificate of Public Convenience and Necessity application to the Virginia State Corporation Commission. On behalf of Appalachian Power, POWER Engineers is requesting your input on the Project.

The Project will replace aging equipment by rebuilding the existing Reusens – Roanoke 138 kilovolt Line, expanding Centerville Substation, and upgrading Roanoke Substation. The existing double circuit 138 kilovolt transmission line to be rebuilt is approximately 43 miles long and was originally installed in the 1920s and 1930s. Appalachian Power plans to rebuild the transmission line within the existing right-of-way and, in certain locations, parallel to the existing right-of-way. The study area for the Project is shown in **Attachment 1** and includes portions of the cities of Lynchburg and Roanoke, the Town of Vinton, and Roanoke and Bedford counties.

Appalachian Power and POWER Engineers are requesting input from you during the route development phase of the Project so that any specific comments can be considered. We appreciate your input and your feedback will be incorporated into the filing with the State Corporation Commission. We plan to file the Project with the State Corporation Commission in the summer of 2022. Please distribute this notification to staff members who may be involved with this Project for review and comment.

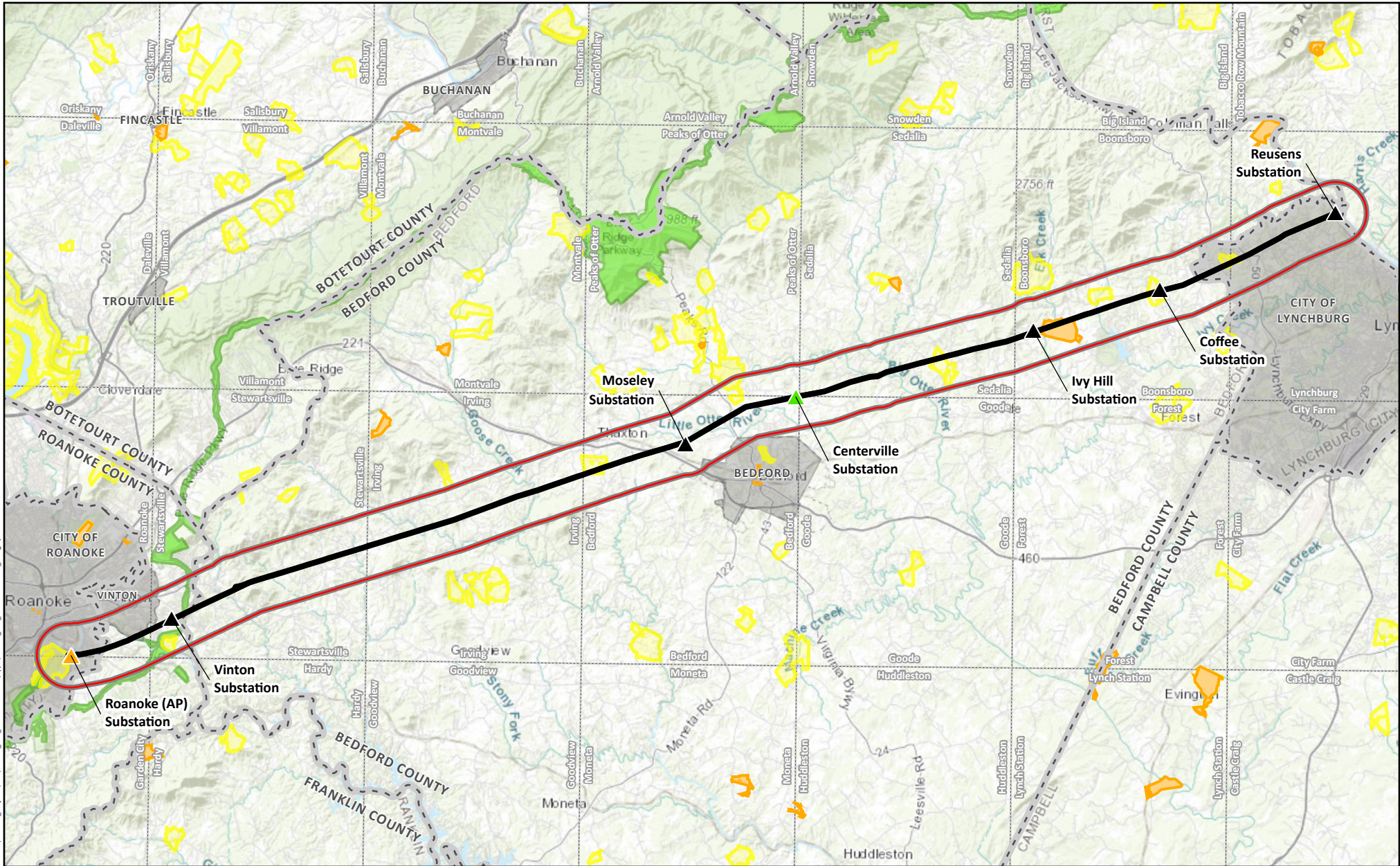
I look forward to receiving your comments and feedback regarding the Project. Please feel to contact me via email at daniel.fraser@powereng.com or by phone at (803) 835-5954.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Fraser".

Daniel Fraser, P.E.
POWER Engineers, Inc.

Enclosure: Attachment 1 – Project Study Area



Path: C:\Iam120_Projects\AEP162806_AEP_ReusensRoanoke\Map162806_AEP_ReusensRoanoke_Siting.aprx

Project Study Area	State Easement
Existing APCo Substation	VOF Easement
Existing APCo Substation to be Upgraded	Blue Ridge Parkway National Park
Existing APCo Substation to be Expanded	County Boundary
Proposed Transmission Line	USGS Topo Quad Boundary
Municipality	

0 1 2 3
Miles

Project Location

PROJECT STUDY AREA

Town of Vinton,
Cities of Lynchburg & Roanoke,
Bedford & Roanoke Counties,
Virginia

NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Lambert Conformal Conic
North American 5983

Date: 1/27/2022
Author: CK
POWER: 162806

**Reusens - Roanoke
Transmission Line
Rebuild Project**

Fraser, Daniel

From: Martin, Amy <amy.martin@dwr.virginia.gov>
Sent: Monday, February 28, 2022 9:25 AM
To: Fraser, Daniel
Subject: [EXTERNAL] Re: Appalachian Power: Reusens - Roanoke Transmission Line Rebuild Project

CAUTION: This Email is from an **EXTERNAL** source. **STOP. THINK** before you **CLICK** links or **OPEN** attachments.

Thank you for contacting us about your project. Due to staffing limitations, we are unable to review and provide comments on projects that are not currently involved in one of the regulatory review processes for which we are a formal consulting agency (see <https://www.DWR.virginia.gov/environmental-programs/>). [\[dgif.virginia.gov\]](https://www.dgif.virginia.gov) If your project becomes involved in one of these review processes, we will review the project at that time and provide our comments to the requesting agency. In advance of that, we recommend that you conduct a preliminary desktop analysis to evaluate your project's potential impacts upon the Commonwealth's wildlife resources by accessing our online information system, the Virginia Fish and Wildlife Information Service (VAFWIS) and using the **Geographic Search** function to generate an **Initial Project Assessment** (IPA) report.

We recommend the following steps:

A. Access VAFWIS at this link: <https://vafwis.DWR.virginia.gov/fwis/> [\[vafwis.dgif.virginia.gov\]](https://vafwis.dgif.virginia.gov)
If you are not already a VAFWIS subscriber, you should request to become one by emailing a request to VAFWIS_support@DWR.virginia.gov. VAFWIS Subscriptions are free of charge. As a subscriber, one is able to generate an IPA for the project area (project site plus a minimum 2-mile buffer) which generates a list of imperiled wildlife and designated wildlife resources known from the project area. You may also access VAFWIS as a visitor, but access to data and mapping at this user level is restricted.

Alternatively, you may contact our Geographic Information Systems (GIS) Coordinator, Jay Kapalczynski, at Jay.Kapalczynski@DWR.virginia.gov to request access to the Wildlife Mapping and Environmental Review Map Service (WERMS) which allows you to download GIS data into your own system.

B. Access information about the location of bat hibernacula and roosts from the following locations:

Northern Long-Eared Bats: <https://www.dwr.virginia.gov/wildlife/bats/northern-long-eared-bat-application/> [\[dwr.virginia.gov\]](https://www.dwr.virginia.gov)

Little Brown Bats and Tricolored Bats: <https://www.dwr.virginia.gov/wildlife/bats/little-brown-bat-tri-colored-bat-winter-habitat-roosts-application/> [\[dwr.virginia.gov\]](https://www.dwr.virginia.gov)

C. Access up to date information about the location and status of bald eagle nests in Virginia by accessing the Center for Conservation Biology's Eagle Nest Locator at <https://ccbbirds.org/what-we-do/research/species-of-concern/virginia-eagles/nest-locator/> [\[ccbbirds.org\]](https://ccbbirds.org)

D. Review the DWR information, guidance, and protocols available on our website at the bottom of [this page](#) [\[dwr.virginia.gov\]](https://www.dwr.virginia.gov) in the "Additional Resources" section and implement, as appropriate.

E. Include the results of your desktop analysis with your project documents, applications, etc.



Amy Martin

Manager

Wildlife Information and Environmental Services

she/her/hers

P 804.367.2211

Department of Wildlife Resources

CONSERVE. CONNECT. PROTECT.

A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228

www.VirginiaWildlife.gov [dwr.virginia.gov]

On Fri, Feb 25, 2022 at 11:21 AM daniel.fraser@powereng.com <daniel.fraser@powereng.com> wrote:

Dear Ms. Ewing:

I am reaching out regarding Appalachian Power's Reusens – Roanoke Transmission Line Rebuild Project, a transmission line rebuild project in Roanoke, Bedford, and the City of Lynchburg, Virginia. Please find the attached letter and project area map for your review and comment. More information about the Project is also available at AppalachianPower.com/Reusens-Roanoke [appalachianpower.com].

I look forward to receiving your comments and feedback regarding the Project. Please feel to contact me via email or by phone at (803) 835-5954.

DANIEL FRASER, P.E.

803-835-5954

803-579-0217 cell

POWER Engineers, Inc.

www.powereng.com



Frank N. Stovall
Deputy Director
for Operations

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

Laura Ellis
Interim Deputy Director for
Administration and Finance

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

March 11, 2022

Daniel Fraser
POWER Engineers Inc.
7400 Beaufont Springs Drive, Suite 316
Richmond VA, 23225

Re: Appalachian Power - Reusens-Roanoke Transmission Line Rebuild Project

Dear Mr. Fraser

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Ivy Creek Stream Conservation Unit (SCU) and the Judith Creek Conservation Unit are within the project site. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Ivy Creek SCU has been given a biodiversity ranking of B3, which represents a site of high significance. The natural heritage resource associated with this site is:

Aquatic Natural Community
(SP- Middle James- Buffalo Second Order Stream)

G2/S2/NL/NL

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

The Judith Creek SCU has been given a biodiversity ranking of B4, which represents a site of moderate significance. The natural heritage resource associated with this site is:

This stream is a grade A, per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. This stream reach also holds a “Healthy” stream designation per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of this stream to ideal stream conditions of biology and habitat for this region. Lastly, this stream contributes to high Biological Integrity at the watershed level (6th order) based on number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

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

According to DCR’s predicted suitable habitat modeling, there is a potential for Roanoke logperch (*Percina rex*, G1G2/S1S2/LE/LE) to occur in the project area if suitable habitat exists. The Roanoke logperch is endemic to the Roanoke and Chowan River drainages in Virginia (Burkhead and Jenkins, 1991) and inhabits medium and large, warm and usually clear rivers with sandy to boulder spotted bottoms (NatureServe, 2009). Please note that this species is currently classified as endangered by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Wildlife Resources (VDWR). The Roanoke logperch is threatened by channelization, siltation, impoundment, pollution, and de-watering activities (Burkhead & Jenkins, 1991).

In addition, Glade Creek, Big Otter Creek, Goose Creek and the Roanoke River have been designated by the Virginia Department of Wildlife Resources as a “Threatened and Endangered Species Water” for the Roanoke logperch within the project area including a 100ft buffer.

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations. Due to the legal status of the Roanoke logperch, DCR also recommends coordination with the U.S. Fish and Wildlife Service (USFWS) and Virginia’s regulatory authority for the management and protection of this species, the VDWR, to ensure compliance with protected species legislation.

Furthermore, the western portion of this project has intersected the karst bedrock screening layer. Encountering undocumented caves, sinkholes or other sensitive karst features in this area is possible. During every phase of the project, DCR recommends 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 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. 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.

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

If tree removal is proposed for the project, the project will fragment Ecological Cores (**C4 and C5**) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

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

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

Therefore minimizing fragmentation is a key mitigation measure that will reduce deleterious effects and preserve the natural patterns and connectivity of habitats that are key components of biodiversity. DCR recommends efforts to minimize edge in remaining fragments, retain natural corridors that allow movement between fragments and designing the intervening landscape to minimize its hostility to native wildlife (natural cover versus lawns).

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

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

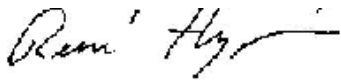
New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

A fee of \$160.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 24th Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Amy Martin at 804-367-2211 or amy.martin@dwr.virginia.gov.

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

Sincerely,



S. René Hypes
Natural Heritage Project Review Coordinator

Cc: Amy Martin, VDWR
Troy Andersen, USFWS
Wil Orndorff, DCR-Karst

Literature Cited

Burkhead, N.M. and R.E. Jenkins. 1991. Roanoke logperch. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. p. 395-397.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: June 21, 2010).



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482 FAX (804) 698-4178

www.deq.virginia.gov

Andrew R. Wheeler
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4000

February 25, 2022

Daniel Fraser, P.E.
POWER Engineers, Inc.
7400 Beaufont Spring Drive
Suite 316
Richmond, Virginia 23225

RE: Appalachian Power: Reusens – Roanoke Transmission Line Rebuild Project in
Roanoke, Bedford, and the City of Lynchburg, Virginia

Dear Mr. Fraser:

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

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

DOCUMENT SUBMISSIONS

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

ENVIRONMENTAL REVIEW UNDER VIRGINIA CODE 56-46.1

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

Department of Environmental Quality:

- DEQ Regional Office
 - Air Division
 - Office of Wetlands and Stream Protection
 - Office of Local Government Programs
 - Division of Land Protection and Revitalization
 - Office of Stormwater Management
- Department of Conservation and Recreation
 Department of Health
 Department of Agriculture and Consumer Services
 Department of Wildlife Resources
 Virginia Marine Resources Commission
 Department of Historic Resources
 Department of Mines, Minerals, and Energy
 Department of Forestry
 Department of Transportation

DATA BASE ASSISTANCE

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

- DEQ Online Database: Virginia Environmental Geographic Information Systems

Information on Permitted Solid Waste Management Facilities, Impaired Waters, Petroleum Releases, Registered Petroleum Facilities, Permitted Discharge (Virginia Pollution Discharge Elimination System Permits) Facilities, Resource Conservation and Recovery Act (RCRA) Sites, Water Monitoring Stations, National Wetlands Inventory:

- www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx

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

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

- <http://128.172.160.131/gems2/>

- MARCO Mid-Atlantic Ocean Data Portal

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

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

- DHR Data Sharing System.

Survey records in the DHR inventory:

- www.dhr.virginia.gov/archives/data_sharing_sys.htm
- DCR Natural Heritage Search

Produces lists of resources that occur in specific counties, watersheds or physiographic regions:

 - www.dcr.virginia.gov/natural_heritage/dbsearchtool.shtml
- DWR Fish and Wildlife Information Service

Information about Virginia's Wildlife resources:

 - <http://vafwis.org/fwis/>
- Total Maximum Daily Loads Approved Reports
 - <https://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/tmdl/tmdldevelopment/approvedtmdlreports.aspx>
- Virginia Outdoors Foundation: Identify VOF-protected land
 - <http://vof.maps.arcgis.com/home/index.html>
- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems

Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL:

 - www.epa.gov/superfund/sites/cursites/index.htm
- EPA RCRAInfo Search

Information on hazardous waste facilities:

 - www.epa.gov/enviro/facts/rcrainfo/search.html
- Total Maximum Daily Loads Approved Reports
 - <https://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/tmdl/tmdldevelopment/approvedtmdlreports.aspx>
- EPA Envirofacts Database

EPA Environmental Information, including EPA-Regulated Facilities and Toxics Release Inventory Reports:

 - www.epa.gov/enviro/index.html
- EPA NEPAassist Database

Facilitates the environmental review process and project planning:

 - <http://nepaassisttool.epa.gov/nepaassist/entry.aspx>

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

I hope this information is helpful to you.

Sincerely,

A handwritten signature in black ink that reads "Bettina Rayfield". The signature is written in a cursive style with a long horizontal flourish at the end of the name.

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



COMMONWEALTH of VIRGINIA

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

Andrew R. Wheeler
Secretary of Natural and Historic
Resources

Justin D. Worrell
Acting Commissioner

March 4, 2022

POWER Engineers
Attn: Daniel Fraser
6641 West Broad Street, Suite 405
Richmond, VA 23230

Re: Appalachian Power: Reusens - Roanoke Transmission
Line Rebuild Project

Dear Mr. Fraser,

This will respond to the request for comments regarding the State Corporation Commission application for the Appalachian Power Reusens - Roanoke Transmission Line Rebuild Project, prepared by POWER Engineers, on behalf of Appalachian Power. Specifically, Appalachian Power has proposed to rebuild the existing Reusens – Roanoke 138 kilovolt Line, expand the Centerville Substation, and upgrade the Roanoke Substation in Roanoke, Bedford, and the City of Lynchburg, Virginia.

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

Please contact me at (757) 247-2255 or by email at mike.johnson@mrc.virginia.gov if you have any questions. Thank you for the opportunity to comment.

Sincerely,

Mike Johnson
Environmental Engineer, Habitat Management

MJ/cg
HM



COMMONWEALTH of VIRGINIA

Department of Agriculture and Consumer Services

PO Box 1163, Richmond, Virginia 23218

www.vdacs.virginia.gov

Joseph W. Guthrie
Commissioner

February 28, 2022

POWER Engineers, Inc.
Daniel Fraser, P.E.
7400 Beaufont Springs Drive
Suite 316
Richmond, Virginia 23225

Re: Appalachian Power
Reusens – Roanoke Transmission Line Rebuild Project
Counties of Roanoke and Bedford and the City of Lynchburg, Virginia

Dear Mr. Fraser:

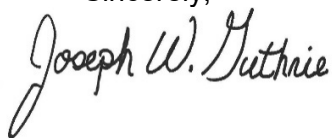
This is in response to your letter to this agency inviting comments concerning Appalachian Power Company's Reusens – Roanoke Transmission Line Rebuild Project in the counties of Roanoke and Bedford and the City of Lynchburg.

The Virginia Department of Agriculture and Consumer Services (VDACS) is responsible for the preservation of farmland and the protection of endangered and threatened plant and insect species. Concerning farmland preservation, § 3.2-204 of the Code of Virginia requires that in preparing reports on major state projects, each state agency shall demonstrate that it considered the impact of the projects on farm and forest lands as required in § 3.2-205 and that it adequately considered alternatives and mitigating measures. Based on the information you provided, for the most part, the project areas include existing right-of-ways or upgrades to existing substations. However, we are unable to determine if this project will adversely affect any existing farmland. Therefore, VDACS encourages Appalachian Power Company, POWER Engineers Inc. (POWER), and any other partners involved in this project to be mindful of any actions that could result in altering the water flow within surrounding agricultural lands and, to the greatest extent possible, minimize any adverse drainage or erosion issues that may result. In addition, VDACS suggests that POWER determine whether Roanoke or Bedford counties or the City of Lynchburg established any agricultural and forestal districts that may be impacted by this project. Should such districts exist, additional project review by the county is required pursuant to § 15.2-4313 of the Code of Virginia.

VDACS works closely with the Department of Conservation and Recreation (DCR) in determining the potential impact of proposed projects on state endangered and threatened plant and insect species. Through a Memorandum of Agreement between our agencies, DCR reviews these projects and submits comments on our behalf. If after researching its database of natural resources, critical habitats, and species locations DCR finds that a project poses a potential adverse impact on an endangered or threatened plant or insect species, the appropriate information will be referred to VDACS for further review and possible mitigation. Please note that requests of this nature should be

sent to Rene Hypes at the DCR Division of Natural Heritage Project Review Program. Ms. Hypes can be reached at (804) 371-2708 or rene.hypes@dcr.virginia.gov.

Sincerely,

A handwritten signature in black ink that reads "Joseph W. Guthrie". The signature is written in a cursive style with a large, looping initial "J".

Joseph W. Guthrie
Commissioner



March 4, 2022

[SENT VIA EMAIL]

Daniel Fraser, P. E.
Power Engineers, Inc.
7400 Beaufont Springs Drive
Suite 316
Richmond, VA 23225
daniel.fraser@powereng.com

RE: Appalachian Power: Reusens – Roanoke Transmission Line Rebuild Project in Roanoke, Bedford, and the City of Lynchburg, Virginia

Dear Mr. Fraser:

The Virginia Outdoors Foundation (VOF) thanks you for the advance notice of the above-referenced project and the opportunity to provide direct comments regarding upgrades to this area.

Based on the letter dated January 28, 2022, Appalachian Power is proposing to rebuild an existing transmission line between the cities of Lynchburg and Roanoke and upgrade two existing substations. These improvements will replace aging equipment and expand the associated substations. The transmission line will be rebuilt within the existing right-of-way and, in certain locations, parallel to the existing right-of-way. Please accept these comments in response to your inquiry.

VOF, an agency of the Commonwealth, was established by the General Assembly in 1966 to promote the preservation of Virginia's natural and cultural resources by encouraging private philanthropy in fulfillment of state policy. As a result of Virginia's commitment to ensure a vibrant natural environment for today and future generations, VOF owns thousands of acres managed for public access and holds more than 4,000 open-space easements across the Commonwealth, which protect over 860,000 acres.

An open-space easement is a legal interest in real property that creates a relationship between the holders of the easement and the property owner. By means of the easement, VOF has an interest in specific conservation values of the property and a legal obligation to protect these values. VOF easements provide important public benefits by protecting in perpetuity significant tracts of mostly undeveloped land, which may contribute to the protection of water quality, productive soils, natural heritage resources, historic resources, and scenic viewsheds. VOF easements represent over \$1 billion of public investment and fulfillment of Title XI of the Virginia Constitution and other public policies to ensure the conservation of natural and cultural resources.

VOF holds open-space easements on five properties intersected by the project rebuild, as well as one easement on Mill Mountain Park adjacent to the Roanoke Substation. VOF also holds numerous easements and has multiple projects of interest within one mile of the project area. These easements and other projects, directly and indirectly, protect numerous conservation values for the benefit of the public and contribute to the overall high quality of life in the Commonwealth. As such, VOF is concerned about the potential characteristics of the replacement structures and associated project components. While recognizing engineering constraints, we strongly advocate for the replacement structures and associated project components to have a minimal presence on the landscape or, at most, mimic the characteristics and impacts of the existing towers, structures, and facilities in height, size, and reflectivity.

Furthermore, any proposal that would extend beyond the existing right-of-way, even along parallel segments, would likely be limited and require extensive review. Such would also be the case with any encroachment of the Roanoke Substation into our easement on Mill Mountain Park. Our Board of Trustees would likely need to approve any expansion or encroachment of AEP interests in areas held in open-space easement by VOF.

Thank you for the notice, and we look forward to working with POWER Engineers, Inc. and Appalachian Power in the continued planning and development of this project. If you have any further questions or comments, please feel free to contact me at (540) 430-0292 or via email at hhibbitts@vof.org.

Sincerely,

A handwritten signature in black ink, appearing to read 'Harry Hibbitts', with a stylized flourish at the end.

Harry Hibbitts
Assistant Director

Robert Farrell
State Forester



COMMONWEALTH of VIRGINIA

Department of Forestry

900 Natural Resources Drive, Suite 800 • Charlottesville, Virginia 22903
(434) 977-6555 • Fax: (434) 296-2369 • www.dof.virginia.gov

Friday, March 4, 2022

Daniel Fraser
POWER Engineers, Inc.

Subject: Appalachian Power: Reusens – Roanoke Transmission Line Rebuild Project in
Roanoke, Bedford, and the City of Lynchburg, Virginia

Dear Daniel,

Thank you for the opportunity to comment on Appalachian Power's proposed rebuild of transmission lines from Reusens to Roanoke, Virginia as described in the correspondence from Bettina Rayfield, January 28th, 2022.

The Department of Forestry recommends that existing ROWs be utilized wherever possible and that if ROW's must be established or an existing ROW widened, that every effort be made to avoid or minimize disturbance to high conservation value forest, streams or wetlands, and conserved lands. In instances where trees or forest vegetation needs to be removed, converted, or otherwise negatively impacted by project activities, we recommend mitigating these impacts by establishing new trees, forests, or forest vegetation on site or in the general vicinity in such a way as to maintain or improve overall water quality, ecosystem functions, scenic value, and timber value.

Once project plans are finalized for submission to the Department of Environmental Quality for review, we will be happy to provide more specific information on the impacts of the final set of proposed transmission pathways.

Should you require any advice or assistance with forest management, pre-harvest planning, or mitigation efforts, please feel free to contact me or other staff at the Department of Forestry.

Sincerely,

Sarah Parmelee

Sarah Parmelee
Forestland Conservation Coordinator

Baxter, Samuel

From: Fraser, Daniel
Sent: Wednesday, February 9, 2022 9:01 AM
To: Baxter, Samuel
Subject: FW: [EXTERNAL] Appalachian Power - Roanoke Transmission Line Rebuild Project

From: Wells, Jeffrey <jeff.wells@vdh.virginia.gov>
Sent: Wednesday, February 9, 2022 9:00 AM
To: Fraser, Daniel <daniel.fraser@powereng.com>
Cc: Ray Weiland <ray.weiland@vdh.virginia.gov>
Subject: [EXTERNAL] Appalachian Power - Roanoke Transmission Line Rebuild Project

CAUTION: This Email is from an **EXTERNAL** source. **STOP. THINK** before you **CLICK** links or **OPEN** attachments.

Dear Mr. Fraser,

We received your letter dated January 28, 2022 outlining proposed improvements to electrical infrastructure in Roanoke, Bedford County and the City of Lynchburg.

We do not have any comments or objections to the proposed work.

Thank you for the opportunity to comment and please call or email with any questions.

Jeffrey S. Wells, P.E.

Field Director

VDH-Office of Drinking Water

211 Nor Dan Drive, Suite 1040

Danville, Virginia 24540

Mainline (434) 836-8416

Directline (434) 549-8314

Fraser, Daniel

From: Warren, Arlene <arlene.warren@vdh.virginia.gov>
Sent: Friday, March 25, 2022 2:44 PM
To: Fraser, Daniel
Cc: rr Environmental Impact Review
Subject: [EXTERNAL] Re: NEW SCOPING Reusens-Roanoke Transmission Line Rebuild

CAUTION: This Email is from an **EXTERNAL** source. **STOP. THINK** before you **CLICK** links or **OPEN** attachments.

Project Name: NEW SCOPING Reusens-Roanoke Transmission Line Rebuild

Project #: N/A

UPC #: N/A

Location: Roanoke, Bedford, and the City of Lynchburg

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to **public drinking water sources** (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems **must be verified by the local utility**.

The following public groundwater wells are located within a 1 mile radius of the project site (wells within a 1,000 foot radius are formatted in **bold**) *please keep in mind that this review was performed without shape:*

PWS ID Number	City/County	System Name	Facility Name
5019682	BEDFORD COUNTY	BEDFORD MOOSE LODGE	WELL NO. 1
5019430	BEDFORD COUNTY	HILLCREST MOBILE HOME PARK	WELL NO. 3
5019670	BEDFORD COUNTY	MINERAL SPRINGS CHRISTIAN SCHOOL	WELL NO. 1
5019430	BEDFORD COUNTY	HILLCREST MOBILE HOME PARK	WELL NO. 4
5019430	BEDFORD COUNTY	HILLCREST MOBILE HOME PARK	WELL NO. 1
2161830	ROANOKE COUNTY	VINTON, TOWN OF	ROUTE 24 WELL
2161830	ROANOKE COUNTY	VINTON, TOWN OF	STONEBRIDGE WELL
5019379	BEDFORD COUNTY	HARDY ROAD TRAILER PARK, SECTION 2	WELL NO. 2
5019379	BEDFORD COUNTY	HARDY ROAD TRAILER PARK, SECTION 2	WELL NO. 5
2161830	ROANOKE COUNTY	VINTON, TOWN OF	BUSH #2 WELL
2161830	ROANOKE COUNTY	VINTON, TOWN OF	BUSH #1 WELL
2161830	ROANOKE COUNTY	VINTON, TOWN OF	BUSH #3 WELL
2161830	ROANOKE COUNTY	VINTON, TOWN OF	MANSARD SQUARE WELL
2161830	ROANOKE COUNTY	VINTON, TOWN OF	CHESTNUT STREET WELL
2161830	ROANOKE COUNTY	VINTON, TOWN OF	CRAIG AVENUE WELL
2161680	ROANOKE COUNTY	PINE TREE VILLAGE	WELL 2 - PINE TREE VILLAGE
2770900	ROANOKE COUNTY	WESTERN VIRGINIA WATER AUTHORITY	MUSE WELL
2770900	ROANOKE COUNTY	WESTERN VIRGINIA WATER AUTHORITY	MUSE SPRING
2770900	ROANOKE COUNTY	WESTERN VIRGINIA WATER AUTHORITY	GARDEN CITY WELL NO. 3
2770900	ROANOKE COUNTY	WESTERN VIRGINIA WATER AUTHORITY	GARDEN CITY WELL NO. 2
2770900	ROANOKE COUNTY	WESTERN VIRGINIA WATER AUTHORITY	CRYSTAL SPRING

The following surface water intakes are located within a 5 mile radius of the project site:

PWS ID Number	System Name	Facility Name
2770900	WESTERN VIRGINIA WATER AUTHORITY	FALLING CREEK
5019052	BEDFORD REGIONAL WATER AUTHORITY (BRWA)	BIG OTTER RIVER INTAKE
5019250	EAGLE EYRIE BAPTIST CONFERENCE CENTER	INTAKE - FLEMING MT RESERVOIR
5680200	LYNCHBURG, CITY OF	ABERT COMBINED INTAKE - SAMPLING
5680200	LYNCHBURG, CITY OF	JAMES RIVER-ABERT
5680200	LYNCHBURG, CITY OF	COLLEGE HILL COMBINED INTAKE - SAMPLING
5009250	AMHERST CO SERVICE AUTHORITY (ACSA)	COMBINED INTAKE - SAMPLING
5009250	AMHERST CO SERVICE AUTHORITY (ACSA)	GRAHAM CREEK IMPOUNDMENT
5009250	AMHERST CO SERVICE AUTHORITY (ACSA)	HARRIS CREEK AUX INTAKE

The project is within the watershed of the following public surface water sources (facilities where the project falls within 5 miles of the intake **and** is within the intake's watershed are formatted in **bold**):

PWS ID Number	System Name	Facility Name
5680200	LYNCHBURG, CITY OF	JAMES RIVER-COLLEGE HILL
5117310	CLARKSVILLE, TOWN OF	KERR RESERVOIR INTAKE
5031050	ALTAVISTA, TOWN OF	STAUNTON RIVER
5117707	ROANOKE RIVER SERVICE AUTHORITY	LAKE GASTON INTAKE
5019400	SMITH MT. LAKE CENTRAL WATER SYSTEM	SMITH MOUNTAIN LAKE
5031150	CAMPBELL COUNTY CENTRAL SYSTEM	BIG OTTER RIVER

Best Management Practices should be employed, including Erosion & Sedimentation Controls and Spill Prevention Controls & Countermeasures on the project site.

Well(s) within a 1,000 foot radius from the project site should be field marked and protected from accidental damage during construction.

Materials should be managed while on site and during transport to prevent impacts to nearby surface water.

The Virginia Department of Health – Office of Drinking Water appreciates the opportunity to provide comments. If you have any questions, please let me know.

Best Regards,

Arlene F. Warren
 GIS Program Support Technician
 Virginia Department of Health, Office of Drinking Water
 109 Governor Street, 6th Floor
 Richmond, VA 23219
804-356-6658 (office/cell/text)

On Fri, Feb 25, 2022 at 1:55 PM Fulcher, Valerie <valerie.fulcher@deq.virginia.gov> wrote:

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

Appalachian Power: Reusens – Roanoke Transmission Line Rebuild Project in Roanoke, Bedford, and the City of Lynchburg, Virginia

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

DEQ-OEIR's scoping response is also attached.

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

Valerie

--

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

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

NEW PHONE NUMBER: 804-659-1550

Email: Valerie.Fulcher@deq.virginia.gov

<https://www.deq.virginia.gov/permits-regulations/environmental-impact-review> [deq.virginia.gov]

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

For program updates and public notices please subscribe to Constant

Contact: <https://lp.constantcontact.com/su/MVcCump/EIR> [lp.constantcontact.com]



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

4219 CAMPBELL AVENUE
LYNCHBURG, VIRGINIA 24501

STEPHEN C. BRICH, P.E.
COMMISSIONER

March 2nd, 2022

MEMORANDUM

TO: Daniel Fraser, P.E.

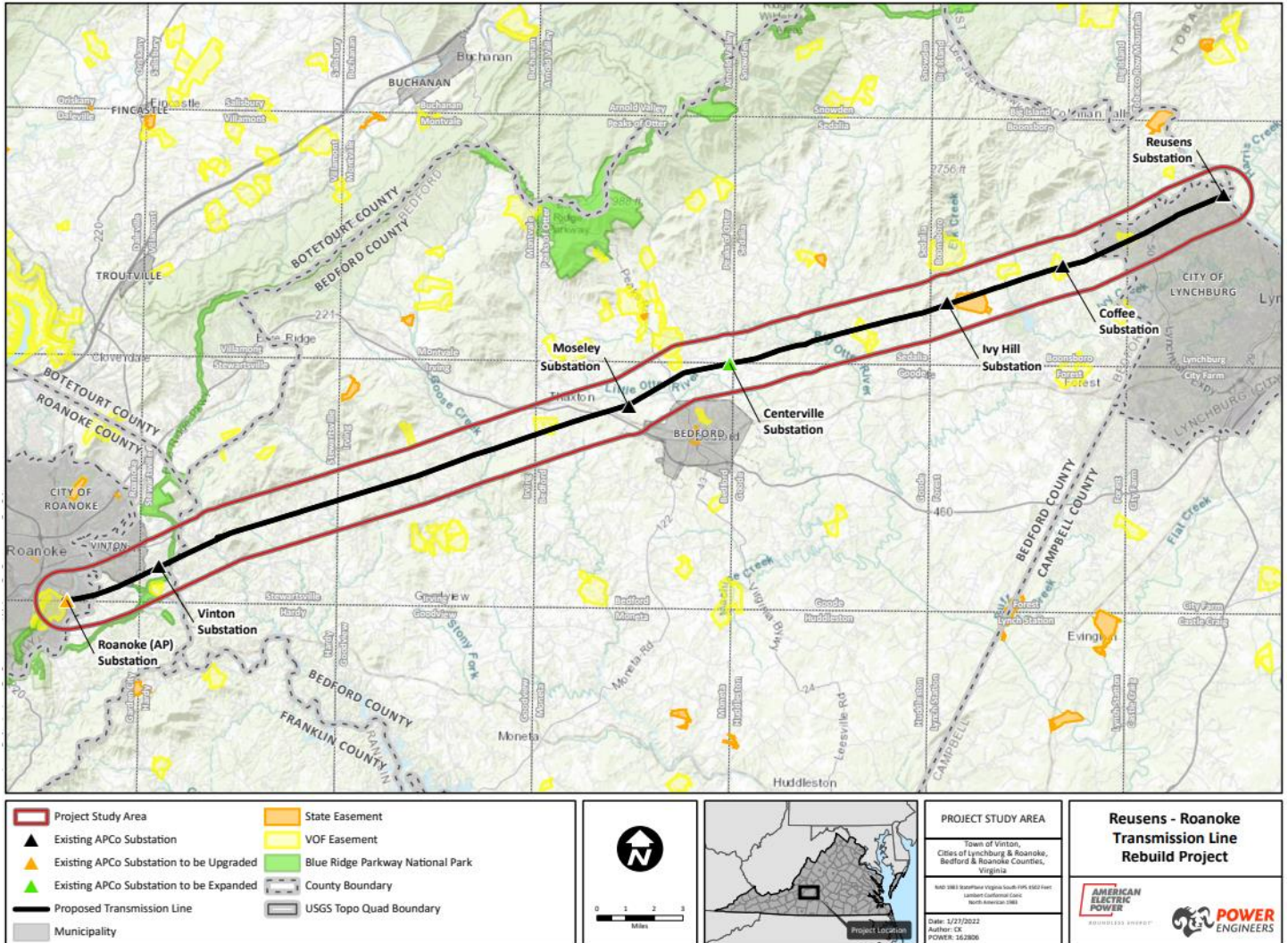
FROM: David Cook – Lynchburg District Transportation Planner

SUBJECT: Reusens - Roanoke Transmission Line Rebuild Project
Lynchburg City, Virginia

Our office has reviewed the project scope for the Reusens - Roanoke Transmission Line Rebuild Project and offers the following comments:

- 1) Appalachian Power Company is proposing the rebuild of the Reusens – Roanoke Transmission Line, an existing transmission line between the cities of Lynchburg and Roanoke and reconstruction of two existing substations (Power Engineers Letter). The transmission rebuild project will replace aging equipment along the existing 43-mile transmission line (Power Engineers Letter). Appalachian Power plans to rebuild the transmission line within existing right-of-way or parallel to existing right-of-way in certain locations (Power Engineers Letter).
- 2) Based upon our review, there are no future VDOT or DRPT transportation projects in the SYIP to be aware of that fall within the Lynchburg City geographic scope of the proposed project.
- 3) Please continue to monitor the statewide public paving schedule interactive map for any potential conflicts with future paving projects as they are scheduled:
<https://www.virginiaroads.org/maps/VDOT::statewide-paving-status-map-public-2021/explore>
- 4) The project could pose some significant traffic impacts along various roads throughout the service area during construction only. An appropriate work zone plan will need to be devised to insure the safe and efficient travel of vehicles during the construction phase. A VDOT Land use permit will be required for any operations within VDOT Right-of-way.

Figure 1: Project Location Map:



Source: Power Engineers Reusens - Roanoke Transmission Line Rebuild Project Letter

Should you have specific questions or need further clarification, please feel free to contact myself at 434-856-8252 or the District Planning Manager Rick Youngblood at 434-856-8331

Fraser, Daniel

From: Shippee, Scot <scot.shippee@vdot.virginia.gov>
Sent: Thursday, March 10, 2022 3:09 PM
To: daniel.fraser@powereng.com
Cc: Anne Booker; King, Kenneth; Baxter, Samuel
Subject: [EXTERNAL] Re: Appalachian Power: Reusens - Roanoke Transmission Line Rebuild Project

CAUTION: This Email is from an **EXTERNAL** source. **STOP. THINK** before you **CLICK** links or **OPEN** attachments.

Mr. Frasier,

On behalf of Mr. King, I have reviewed your sketch and have no comments in regards to your conceptual alignment given the level of detail provided as you are staying within your existing Right of Way.

For future detailed reviews and permitting, I will serve as your contact. Please note that Land Use Permits must be obtained and an appropriate Traffic Control Plan submitted for all areas where you will be crossing VDOT Right of Way.

If you have any additional questions or concerns, please let me know. We look forward to working with you on this project.

Thanks,
Scot



Scot E. Shippee, PE
Sr. Land Use/Maintenance Engineer
Salem District
Virginia Department of Transportation
540-795-9434 (cell)
scot.shippee@VDOT.Virginia.gov

On Thu, Mar 10, 2022 at 2:50 PM King, Kenneth <ken.king@vdot.virginia.gov> wrote:
Please handle.

Thanks - Ken



Kenneth H King Jr, PE
Salem District Engineer
Virginia Department of Transportation
540-387-5348
Ken.King@VDOT.Virginia.Gov

----- Forwarded message -----

From: daniel.fraser@powereng.com <daniel.fraser@powereng.com>
Date: Fri, Feb 25, 2022 at 11:23 AM
Subject: Appalachian Power: Reusens - Roanoke Transmission Line Rebuild Project
To: ken.king@vdot.virginia.gov <ken.king@vdot.virginia.gov>
Cc: samuel.baxter@powereng.com <samuel.baxter@powereng.com>

Dear Mr. King:

I am reaching out regarding Appalachian Power's Reusens – Roanoke Transmission Line Rebuild Project, a transmission line rebuild project in Roanoke, Bedford, and the City of Lynchburg, Virginia. Please find the attached letter and project area map for your review and comment. More information about the Project is also available at AppalachianPower.com/Reusens-Roanoke [appalachianpower.com].

I look forward to receiving your comments and feedback regarding the Project. Please feel to contact me via email or by phone at (803) 835-5954.

Thank you,

DANIEL FRASER, P.E.

803-835-5954

803-579-0217 cell

POWER Engineers, Inc.

www.powereng.com



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
731 HARRISON AVENUE
SALEM, VIRGINIA 24153

Stephen Brich, P.E.
COMMISSIONER

March 3, 2022

To: Daniel Fraser
Power Engineers

From: Carol J.L. Moneymaker, Planning Specialist
VDOT Salem District Planning

A handwritten signature in cursive script that reads "Carol J.L. Moneymaker".

Subject: RE: NEW SCOPING Reusens-Roanoke Transmission Line Rebuild

VDOT received a request to review transportation impacts of the above referenced project. Appalachian Power Company (the Company) is planning to rebuild an existing transmission line between Lynchburg and Roanoke to ensure adequate and reliable electric service to the surrounding area. The Project will replace aging equipment by rebuilding the existing Reusens – Roanoke 138 kilovolt Line, expanding Centerville Substation, and upgrading Roanoke Substation.

Appalachian Power plans to rebuild the approximately 43 miles long transmission line within or parallel to the existing right-of-way. Appalachian Power contracted POWER Engineers to conduct route selection studies and prepare the Certificate of Public Convenience and Necessity application to the Virginia State Corporation Commission. The study area for the Project is shown in Attachment 1 and includes portions of the cities of Lynchburg and Roanoke, the Town of Vinton, and Roanoke and Bedford counties.

Comments:

- All circumstances where the proposed project may impact transportation operations should be coordinated with VDOT and/or the locality within which the work will be performed prior to any construction. Roadways within Bedford and Roanoke Counties are owned and operated by VDOT. Roadways within the City of Lynchburg, City of Roanoke, and Town of Vinton are owned and operated by the locality.
- The areas of potential impact include roads adjacent to or being crossed by construction as well as pedestrian, bicycle, and transit operations near the construction sites.
- Activities requiring detours or other modifications to transportation operations should be conducted at times during which impacts will be minimized.

Memo to Daniel Fraser

March 3, 2022

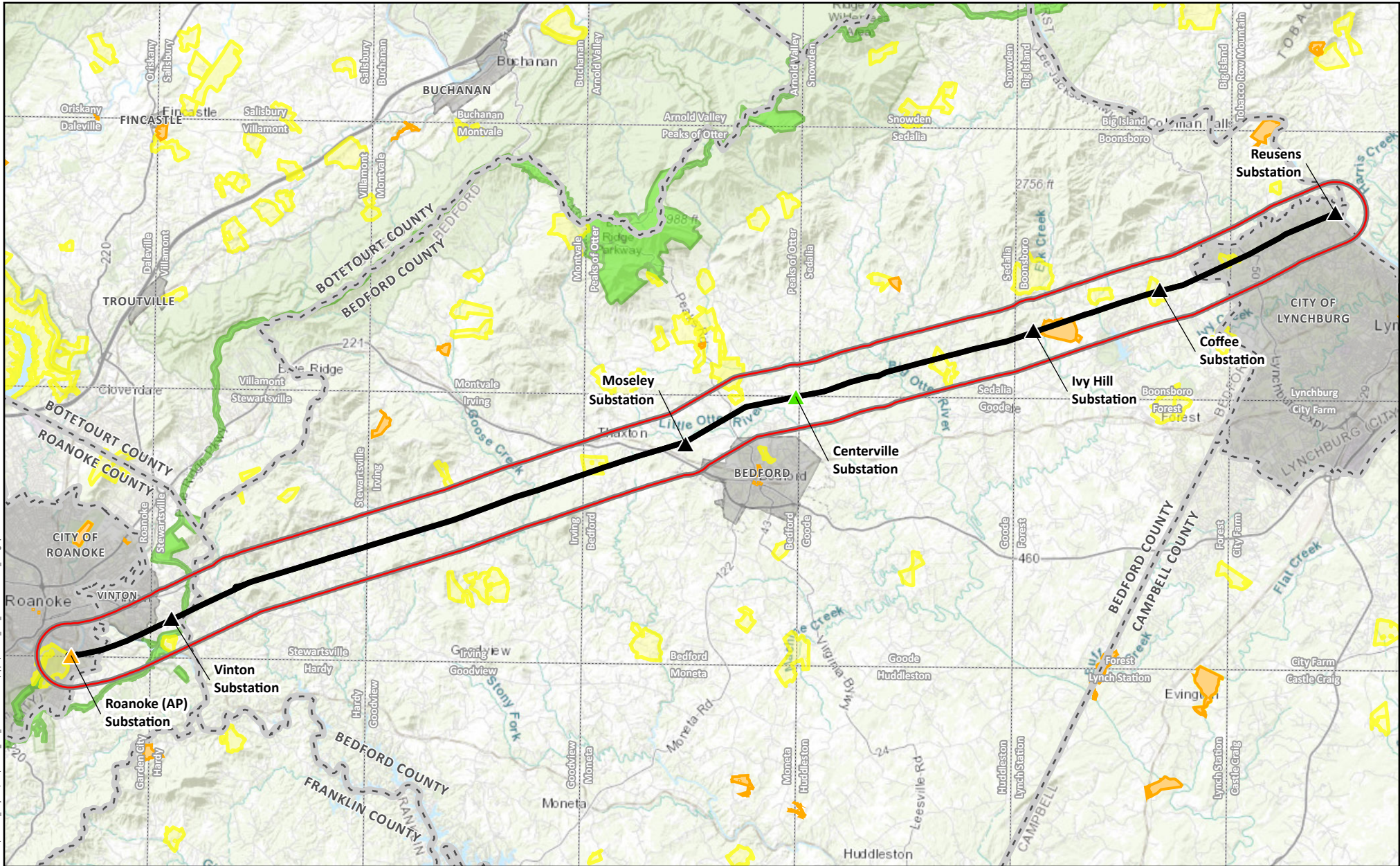
Page Two

- Road signs should be provided to alert drivers, bicyclists, and pedestrians of utility work ahead, and any detours necessary to navigate around the work.

If you have questions or need additional information, please contact me at (540) 520-3515.

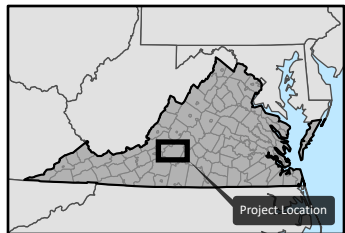
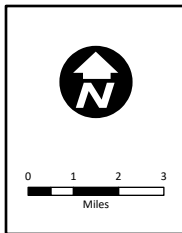
cc: Michael Gray – Salem District Planner
Todd Daniel – Bedford Residency – Resident Engineer
J.P. Morris – Bedford Residency – Assistant Resident Engineer
Brian Blevins – Salem Residency – Resident Engineer
Ashley Smith – Salem Residency – Assistant Resident Engineer
Robin Simpson – Salem District Environmental Manager
EIR Coordination Listserv

Attachement (1)



Path: C:\Iam120_Projects\VA\EP1\62806_AEP_ReusensRoanoke\Map1\62806_AEP_ReusensRoanoke_Siting.aprx

Project Study Area	State Easement
Existing APCo Substation	VOF Easement
Existing APCo Substation to be Upgraded	Blue Ridge Parkway National Park
Existing APCo Substation to be Expanded	County Boundary
Proposed Transmission Line	USGS Topo Quad Boundary
Municipality	



PROJECT STUDY AREA
 Town of Vinton,
 Cities of Lynchburg & Roanoke,
 Bedford & Roanoke Counties,
 Virginia
NAD 1983 StatePlane Virginia South FIPS 4502 Feet
 Lambert Conformal Conic
 North American 5983
 Date: 1/27/2022
 Author: CK
 POWER: 162806

**Reusens - Roanoke
 Transmission Line
 Rebuild Project**

Baxter, Samuel

From: Fraser, Daniel
Sent: Wednesday, February 9, 2022 8:37 AM
To: Baxter, Samuel
Subject: FW: Appalachian Power reply
Attachments: AppalachianPowerCo_Reusens-RoanokeTransmissionLineRebuildProj_Recd20220204.pdf

From: Harper, John - NRCS, Richmond, VA <john.harper@usda.gov>
Sent: Wednesday, February 9, 2022 8:22 AM
To: Fraser, Daniel <daniel.fraser@powereng.com>
Cc: Martinez, Edwin - NRCS, Richmond, VA <edwin.martinez@usda.gov>; Anderson, Kathleen - NRCS, Richmond, VA <kathleen.anderson@usda.gov>
Subject: [EXTERNAL] Appalachian Power reply

CAUTION: This Email is from an **EXTERNAL** source. **STOP. THINK** before you **CLICK** links or **OPEN** attachments.

Mr. Fraser,
Since this is an existing transmission right of way, no FPPA request is needed.

Please follow all local and state erosion control BMP's and ordinances during construction.

Thank you.

J. David Harper

State Soil Scientist
State Resource Inventory Coordinator
1606 Santa Rosa Road, Suite 209
Richmond, Virginia 23229
804-287-1647

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

April 27, 2022

Western Virginia Regulatory Section
Action ID Number: NAO-2022-0540

Mr. Daniel Frasier, P.E.
Power Engineers
7400 Beaufont Springs Drive, Suite 316
Richmond, Virginia 23225

Dear Mr. Frasier:

This letter is in response to your request for an environmental review of the Reusens-Roanoke Transmission Line Rebuild Project, dated January 28, 2022. The proposed project includes expansion of the Centerville Substation, upgrade of the Roanoke Substation, and rebuild of the 43-mile-long transmission line. The project area is in the existing utility right-of-way, and in certain areas parallel to the existing right-of-way in portions of Lynchburg and Roanoke Cities, the Town of Vinton and portions of Roanoke and Bedford Counties, Virginia. This project has been assigned Action ID Number: NAO-2022-0540; please reference this number on any future correspondence.

Based on an initial review of the maps you provided and all available electronic and online resources, it appears that this project would not result in discharges of dredged and/or fill material into waters of the United States; however, this is not a final Corps jurisdictional determination. As you are probably aware, both temporary and permanent discharges of dredged and/or fill material into waters of the United States are subject to the permitting requirements of Section 404 of the Clean Water Act (33 CFR 323). It does appear that the proposed project area includes a navigable water of the United States, as defined pursuant to the Rivers and Harbors Act of 1899.

We strongly encourage the project proponent to contact the Corps, as early as possible during the design phase, to verify the presence and geographic limits or the absence of waters of the U.S. within the project limits. Please note that coordination with other agencies may be required to ensure compliance with other Federal Laws, such as the Endangered Species Act, and the National Historic Preservation Act.

We appreciate the opportunity to provide comments on your proposed project. Should you have any questions or concerns, please do not hesitate in contacting me at (540) 344-1409 or via email at dana.m.heston@usace.army.mil.

CENAO-WRR-W
NAO-2022-0540

Sincerely,

A handwritten signature in cursive script that reads "Dana Heston".

Dana Heston
Environmental Scientist
Western Virginia Regulatory Section

Fraser, Daniel

From: Case, Rachel L <rachel_case@fws.gov> on behalf of Virginia Field Office, FW5 <virginiafieldoffice@fws.gov>
Sent: Tuesday, April 12, 2022 10:36 AM
To: Fraser, Daniel
Subject: Re: [EXTERNAL] Appalachian Power: Reusens - Roanoke Transmission Line Rebuild Project

Daniel,

Our office utilizes an online review process to assist project proponents in obtaining Endangered Species Act compliance. An overview of this process and the associated steps can be found on our [website \[fws.gov\]](https://www.fws.gov). We look forward to reviewing your submission.

Regards,
Rachel

From: Schulz, Cindy <cindy_schulz@fws.gov>
Sent: Friday, February 25, 2022 12:21 PM
To: Virginia Field Office, FW5 <virginiafieldoffice@fws.gov>
Subject: FW: [EXTERNAL] Appalachian Power: Reusens - Roanoke Transmission Line Rebuild Project

From: daniel.fraser@powereng.com <daniel.fraser@powereng.com>
Sent: Friday, February 25, 2022 11:31 AM
To: Schulz, Cindy <cindy_schulz@fws.gov>
Cc: samuel.baxter@powereng.com
Subject: [EXTERNAL] Appalachian Power: Reusens - Roanoke Transmission Line Rebuild Project

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Dear Ms. Schulz:

I am reaching out regarding Appalachian Power's Reusens – Roanoke Transmission Line Rebuild Project, a transmission line rebuild project in Roanoke, Bedford, and the City of Lynchburg, Virginia. Please find the attached letter and project area map for your review and comment. More information about the Project is also available at [AppalachianPower.com/Reusens-Roanoke \[gcc02.safelinks.protection.outlook.com\]](https://www.AppalachianPower.com/Reusens-Roanoke).

I look forward to receiving your comments and feedback regarding the Project. Please feel to contact me via email or by phone at (803) 835-5954.

Thank you,

DANIEL FRASER, P.E.

803-835-5954
803-579-0217 cell

POWER Engineers, Inc.

www.powereng.com [gcc02.safelinks.protection.outlook.com]

Attachment G: Environmental Justice Communities

Attachment G: Environmental Justice Communities								
CBG within 1.0 mile of centerline	Crossed by Centerline (Yes/No)	Population	% people of color	% low income ¹	% linguistic isolation	% less than high school	% under age 5	% over age 64
Virginia²		91,588	38	25	3	10	6	15
510090103001	No	2209	10%	18%	11%	0%	4%	21%
510190301011	Yes	4395	9%	6%	2%	0%	6%	15%
510190301012	No	1360	8%	9%	11%	2%	6%	16%
510190301013	No	1451	10%	16%	1%	0%	7%	28%
510190301031	Yes	3735	23%	11%	3%	1%	2%	14%
510190302011	Yes	1467	14%	15%	11%	0%	2%	24%
510190303001	No	1829	9%	17%	6%	0%	4%	22%
510190303002	No	2010	13%	21%	12%	0%	3%	28%
510190304011	Yes	992	7%	41%	16%	0%	8%	22%
510190304012	Yes	1339	2%	5%	9%	0%	1%	34%
510190304013	Yes	825	27%	18%	19%	0%	10%	37%
510190304021	Yes	1019	17%	58%	26%	0%	2%	29%
510190304022	Yes	1831	6%	25%	15%	0%	3%	23%
510190306021	Yes	1349	0%	38%	9%	0%	1%	29%
510190306022	No	1421	1%	23%	12%	0%	5%	22%
510190306031	No	793	3%	48%	8%	0%	5%	7%
510190306032	Yes	1814	5%	32%	13%	2%	5%	31%
510190306041	Yes	1477	1%	43%	26%	0%	9%	14%
510190306042	Yes	1109	3%	29%	21%	0%	3%	26%
510190306051	No	1708	0%	22%	14%	0%	1%	11%
510190501002	No	975	19%	24%	8%	4%	1%	39%
510190501003	No	767	0%	29%	4%	0%	6%	20%
510190501004	No	1487	18%	72%	35%	0%	12%	13%
510230403022	No	1221	1%	1%	3%	0%	5%	25%
510230403023	No	2773	9%	6%	1%	0%	1%	32%
510230404021	No	572	9%	14%	6%	0%	3%	14%
510230404022	Yes	824	12%	40%	21%	0%	9%	22%
510230404023	Yes	870	18%	17%	4%	0%	0%	33%
510230404024	No	2387	13%	16%	6%	0%	2%	19%
510230405011	Yes	2600	6%	23%	5%	3%	4%	9%
510230405012	No	2022	3%	10%	6%	0%	2%	34%
510230405021	Yes	801	2%	30%	8%	0%	4%	27%
511610310001	Yes	1541	20%	31%	20%	0%	3%	33%

Attachment G: Environmental Justice Communities								
CBG within 1.0 mile of centerline	Crossed by Centerline (Yes/No)	Population	% people of color	% low income ¹	% linguistic isolation	% less than high school	% under age 5	% over age 64
Virginia ²		91,588	38	25	3	10	6	15
511610310002	No	1276	18%	14%	6%	2%	3%	22%
511610311011	Yes	1561	5%	28%	22%	0%	4%	16%
511610311012	No	1843	19%	27%	10%	0%	3%	29%
511610311013	No	862	8%	43%	10%	0%	4%	18%
511610311021	No	2480	12%	23%	7%	0%	6%	17%
511610312011	Yes	3008	7%	16%	9%	0%	4%	24%
511610312012	Yes	2372	9%	23%	4%	0%	2%	26%
511610312021	No	4002	18%	13%	3%	1%	6%	23%
511610312023	No	710	7%	40%	0%	0%	2%	16%
516800001001	Yes	1580	11%	17%	4%	1%	6%	47%
516800001002	No	1612	24%	37%	6%	0%	2%	7%
516800001003	Yes	1022	14%	7%	2%	0%	5%	17%
516800002012	No	1877	3%	20%	4%	0%	5%	20%
516800002013	Yes	2216	21%	10%	8%	0%	8%	10%
516800002014	No	1655	10%	28%	5%	2%	6%	24%
517700027001	No	1445	24%	44%	13%	0%	6%	15%
517700027002	No	571	9%	55%	22%	0%	10%	16%
517700027003	No	919	3%	27%	30%	0%	2%	21%
517700027004	No	1118	28%	64%	16%	0%	11%	6%
517700027005	No	1325	35%	61%	9%	0%	10%	9%
517700028001	No	883	42%	46%	18%	0%	3%	20%
517700028002	Yes	1585	14%	9%	6%	0%	8%	19%
517700028003	No	1192	3%	32%	16%	0%	5%	21%
517700028004	Yes	1501	23%	60%	17%	2%	11%	11%

¹Per the Virginia Environmental Justice Act, "Low-income community" means any census block group in which 30 percent or more of the population is composed of people with low income, and used in

²Virginia Population (U.S.Census Bureau April 1, 2020)

Note:

Bold text indicates populations, as defined in Virginia Environmental Justice Act, which exceed the state average, and are crossed by the Proposed Route

Gray shaded cells indicate reference populations.

Green shaded cells indicate identified minority populations as defined in Virginia Environmental Justice Act, which exceed the state average.

Yellow shaded cells indicate identified low-income populations as defined in Virginia Environmental Justice Act, which exceed the state average.

Orange shaded cells indicate identified other demographic populations as defined in EJSSCREEN, which exceed the state average, but not defined in Virginia Environmental Justice Act.

VDEQ SUPPLEMENT

Reusens to Roanoke 138 kV Rebuild Project

SCC Case No. PUR-2022-00136

**Bedford and Roanoke Counties, Cities of Lynchburg and Roanoke,
and the Town of Vinton, Virginia**

Prepared For:

Appalachian Power Company

Prepared by:

POWER Engineers, Inc.

November 2022

Based on consultations 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 Reusens to Roanoke 138 kV Rebuild Project by the VDEQ and other relevant agencies.

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ATTACHMENTS

ATTACHMENT 2.D.1: DESKTOP WETLAND AND STREAM DELINEATION REPORT
ATTACHMENT 2.E.1: HAZARDOUS WASTE INFORMATION
ATTACHMENT 2.F.1: USFWS IPAC REPORT
ATTACHMENT 2.F.2: VDWR RESOURCES
ATTACHMENT 2.H.1: VDHR PRE-APPLICATION ANALYSIS

1. PROJECT DESCRIPTION

Appalachian Power Company (the “Company”) is planning to rebuild an existing transmission line to address the combination of condition, performance, and risk of the infrastructure to maintain reliability of the existing transmission network that serves customers in the region. The Reusens to Roanoke 138 kV Rebuild Project (the “Project”) involves rebuilding the approximately 43-mile-long Reusens – Roanoke 138-kV Line between the Company’s Reusens Substation in the City of Lynchburg and Roanoke Substation in the City of Roanoke, Virginia, expanding the Centerville Substation, and upgrading the equipment at the Roanoke Substation. The existing Reusens – Roanoke 138-kV Line was originally constructed in 1926 as a double-circuit transmission line primarily using lattice steel towers. The transmission line will be rebuilt primarily using modern double-circuit lattice steel towers and double-circuit steel monopoles; however, the final structure types will be determined following additional studies and final engineering. The proposed structure heights are anticipated to range from 75- to 160-feet. The average height of the proposed structures is 125 feet, which is approximately 25 feet taller than the average height of the existing structures to meet current design standards. The transmission line will be rebuilt largely within or near the existing 100-foot-wide right-of-way (“ROW”).

The Company’s application to the Virginia State Corporation Commission (“SCC”), describes the overall need and necessity for the Project.

2. ENVIRONMENTAL ANALYSIS

In a letter dated January 28, 2022, the Company and POWER Engineers, Inc. (POWER) solicited input from 29 federal and state agencies and/or officials regarding the Project. Responses to the Project were received from 17 representatives of various agencies and are included in Attachment F of the *Reusens to Roanoke 138 kV Rebuild Project Siting Study* (the “Siting Study”) in Volume 2 of the Application. POWER also obtained relevant environmental data from field verification (see Section H), 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 responsible locality to obtain permits and will comply with conditions imposed by the locality. The Company’s tree-clearing methods can be found in Section II.A.7 of the SCC Response to Guidelines in Volume 1 of the Application.

B. Water Source

No water source is required for the operation of either the transmission line or substation. The Project is located in the Middle James-Buffalo sub-basin (Hydrologic Unity Code [HUC]8 02080203) and the Upper Roanoke sub-basin (HUC8 03010101). The Project is located in 13 sub-watersheds: Judith Creek-James River (HUC12 020802030301); Cheese Creek-Ivy Creek (HUC12 020802030303); Chestnut Branch-Elk Creek (HUC12 030101011403); Roaring Run-Big Otter River (HUC12 030101011404); North Otter Creek (HUC12 030101011402); Stoney Creek-Big Otter River (HUC12

030101011401); Johns Creek-Little Otter River (HUC12 030101011406); Wolf Creek-Goose Creek (HUC12 030101011103); North Fork Goose Creek-Goose Creek (HUC12 030101011101); Bore Auger Creek (HUC12 030101011102); Beaverdam Creek (HUC12 030101010702); Lynville Creek-Smith Mountain Lake (HUC12 030101010701); and Peters Creek- Roanoke River (HUC12 030101010404).

Responses to a request for comment were received from the Virginia Department of Health's Office of Drinking Water on February 9, 2022 and March 25, 2022. The responses stated the agency does not object to the Project; listed public groundwater wells within 1,000 feet and surface water intakes within 5 miles of the Project; and recommended erosion and sediment controls, spill prevention controls and countermeasures, and field marking be implemented during construction.

The Project Team submitted a project review request to the Virginia Department of Conservation and Recreation ("VDCR"), Virginia Natural Heritage Program and a response was received on March 11, 2022. Per the VDCR response, the Ivy Creek Conservation Unit ("SCU") and the Judith Creek SCU are within the Project area. The Ivy Creek SCU has a high significance biodiversity ranking (B3) and the Judith Creek SCU has a moderate significance biodiversity ranking (B4). Although the Project crosses Ivy Creek, it does not cross Judith Creek. Minimal impacts are anticipated to the stream conservation units as the Project will span all stream crossings.

In a letter dated April 27, 2022, the United States Army Corps of Engineers ("USACE") assigned Action ID Number: NAO-2022-0540 and stated that both temporary and permanent discharges of dredged and/or fill material into waters of the United States are subject to the permitting requirements of Section 404 of the Clean Water Act (33 CFR 323).

The Virginia Marine Resources Commission ("VMRC") did not provide comments regarding the Project.

Responses from the Virginia Department of Health's Office of Drinking Water, VDCR, and VDEQ regarding water sources is included in the Siting Study in Volume 2 of the Application. Coordination and review with the VDEQ, USACE, and VMRC will be conducted during the Project's environmental studies.

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 August 2022 to identify potential wetlands and streams crossed by the Project. The desktop features were identified within the typical 100-foot-wide ROW of the approximately 43-mile-long Project. The results of the desktop review are briefly summarized below. Refer to the Virginia Department of Environmental Quality Desktop Wetland and Stream Delineation Report for the Project in Attachment 2.D.1 for additional detail.

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 completed. Table 1 describes the criteria used to assign the probability of an identified feature within the proposed ROW.

TABLE 1. WETLAND AND STREAM EVALUATION CRITERIA

PROBABILITY	WETLAND ASSESSMENT CRITERIA	STREAM ASSESSMENT CRITERIA
High	Aerial imagery (color and color infrared [CIR]) and/or topography combined with two other indicators such as National Wetlands Inventory (NWI) wetlands, National Hydrography Dataset (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) streams identified with aerial imagery (color and CIR) 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.

The Proposed Route is largely within or parallel to the existing transmission line ROW with minor deviations to minimize impacts to the human and natural environments as well as outage durations. Within a typical 100-foot-wide ROW centered on the Proposed Route, the desktop wetland and stream delineation identified 121 potential wetlands (23.9 acres total) and 118 potential streams (approximately 17,617 linear feet). The results are summarized in the table below.

TABLE 2. PROJECT WETLAND AND STREAM EVALUATION SUMMARY

PROBABILITY	POTENTIAL FEATURE	ESTIMATED NUMBER OF OCCURRENCES	ESTIMATED QUANTITY WITHIN ROW
High	PEM/PSS/PFO/PUB Wetlands	18	5.6 acre
	Streams	77	10,889 feet
Moderate	PEM/PSS/PFO Wetlands	67	13.7 acre
	Streams	4	945 feet
Low	PEM/PSS/PFO Wetlands	36	4.6 acre
	Streams	37	5,783 feet
Wetlands Total		121	23.9 acres
Streams Total		118	17,617 feet

Based on a review of the desktop delineation, the Proposed Route between the Company's existing Reusens and Roanoke substations will result in minimal impacts. The Proposed Route will largely be rebuilt within or parallel to the existing 100-foot-wide ROW, so new impacts to any stream or wetland features that are crossed can likely be minimized or avoided during construction. Additionally, high probability streams, including the Roanoke River, Bore Auger Creek, and Otter Creek, are crossed at or directly adjacent to the existing crossing locations.

In general, temporary and permanent impacts to wetlands and streams during construction of transmission lines can be avoided through strategic placement of transmission foundations and structures to minimize impacts to regulated resources. In most cases, wetlands and streams can be

spanned entirely by a transmission line. Where avoidance is not possible, impacts to wetlands and streams are generally minimal due to the relatively small footprint of transmission line structure foundations. Typically, temporary impacts to wetlands from access roads, which are required to construct the transmission lines, can be minimized by using timber mats to reduce disturbance of the ground surface within wetland areas.

E. Solid and Hazardous Waste

A database search was conducted to identify solid and hazardous waste sites near the Project. The database search included the United States Environmental Protection Agency's ("USEPA") National Priority List ("NPL"); the USEPA's Superfund Enterprise Management System; the USEPA's Resource Conservation and Recovery Act Information System ("RCRA"); the USEPA's Toxics Release Inventory ("TRI"); the VDEQ's Solid Waste Management Facilities; and the VDEQ's Voluntary Remediation Program. Results from the solid and hazardous waste database search are included in Attachment 2.E.1 to this supplement.

The USEPA's Superfund NPL online mapper and Superfund Enterprise Management System database (database last updated May 2022) identified zero NPL sites in proximity to the Project. The RCRA database (database last updated May 2022 for the City of Lynchburg and Bedford County, and August 2022 for the City of Roanoke and Roanoke County) 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 35 active RCRA sites within Bedford County, 135 sites within Roanoke County, 125 sites in the City of Lynchburg, and 171 sites within City of Roanoke (RCRA). The closest active RCRA facility to the Project is approximately 0.1 mile from the Proposed Route and will not be crossed or impacted by the Project. The TRI database (database last updated in 2020) includes information about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. The TRI database identified 4 TRI facilities in Bedford County, 14 facilities in Roanoke County, 11 facilities in the City of Lynchburg, and 14 facilities in the City of Roanoke. The closest TRI site to the Project is located approximately one mile away and will not be crossed or impacted by the Project. In addition, four facilities registered in the Voluntary Remediation Program database (last updated in May 2022) are within one mile of the Project.

There are 25 recycling centers and collection sites that are operating and located in Bedford County. The Shady Grove Collection Site, for depositing bagged household waste only, is approximately 0.4 mile north of the Project. Roanoke County and the City of Roanoke provide refuse collection to all residences, five sealed compactor zones for the City of Roanoke's central business district, and five recycling drop off locations in Roanoke County. The Tinker Transfer Station is a collector site for bulk items and is located approximately two miles north of the Project. The City of Lynchburg is a member of the Region 2000 Services Authority, which operates landfills in the city. The closest convenience centers and collection sites in the City of Lynchburg are located more than 10 miles from 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, a component of the Virginia Stormwater Management Program, which will be submitted to the VDEQ. The Project crosses through predominantly pasturelands and residential areas and will be

rebuilt largely within or near the existing ROW. The Company will monitor soil and groundwater quality in areas of soil disturbance locations, which will be outlined in the 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”) report was generated to verify potential habitat occurrences of threatened and endangered species. Two USFWS-listed species (Indiana Bat (listed as endangered) and northern long-eared bat (listed as threatened)) were identified to potentially occur near the transmission line to be rebuilt. The IPaC is included as Attachment 2.F.1 to this supplement.

In a letter received from the VDCR’s Division of Natural Heritage on March 11, 2022, ecological core areas were identified throughout the Project area. VDCR defines ecological cores as areas of unfragmented natural cover with at least 100 acres of interior that provide habitat for a wide range of species, and are numerically ranked based on their ecological integrity and relative contribution to the ecosystem and natural heritage systems in the area. No highly categorized cores with significant integrity, as determined by the VDCR, were identified within the Project area; although there are multiple “Moderate and General” C4 and C5 core areas, the two lowest categories regarding ecological integrity (Virginia Natural Heritage Data Explorer 2017). The Project will be constructed largely within or near the existing ROW which aligns with the VDCR recommendation to undertake efforts to minimize fragmentation of ecological core areas and retain natural corridors to allow movement between fragments. The VDCR recommends the following maintenance practices for the ROW as preventative measures to protect potential habitats of state-listed species and minimize impacts to ecological cores:

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

There were no State Natural Area Preserves noted under VDCR’s jurisdiction in the Project vicinity. 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.

A review of the Virginia Department of Wildlife Resources’ (“VDWR”) online mapper was used to view sensitive species and resulted in a five-mile radius from a central location along the Project rebuild. Seven USFWS-listed species (northern long-eared bat, Bog Turtle, James spiny mussel, Roanoke logperch, Atlantic Pigtoe, Indiana Bat, and yellow lance) and 15 state listed species were identified by the VDWR (see Attachment 2.F.2). The Project is not located in proximity to any potential Northern long-eared bat, little brown bat, or tri-colored bat habitat and roost tree locations according to the information obtained in VDWR’s online mappers (various survey dates). There are two bald eagle nests documented by the Center for Conservation Biology’s Bald Eagle Nest Locator. The first is located about 0.5 mile north of Reusens Substation (verified in 2011) and the second is located about 1.5 miles south of the Project (verified in 2014). The USFWS eagle guidance recommends that a 660-foot buffer between project activities and eagle nests be maintained; no other bald eagle nest locations were identified in close proximity to the Project.

A total of 15 state-listed species could occur within five miles of the Project based on the VDWR list. The full list can be found in Attachment 2.F.2 and in the below table.

TABLE 3. VDWR-LISTED SPECIES

SPECIES NAME	STATE STATUS
James spiny mussel	Endangered
Roanoke logperch	Endangered
Northern long-eared bat	Threatened
Yellow lance	Threatened
Little brown bat	Endangered
Tri-colored bat	Endangered
Indiana Bat	Endangered
Peregrine falcon	Threatened
Henslow's sparrow	Threatened
Loggerhead shrike	Threatened
Migrant loggerhead shrike	Threatened
Atlantic pigtoe	Threatened
Bog Turtle	Threatened
Orangefin madtom	Threatened
Appalachian grizzled skipper	Threatened

The Company will coordinate with the VDWR, the USFWS, and the VDCR as appropriate to minimize impacts on these resources during the environmental permitting phase of the 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, ROW clearing, structure erection, substation upgrades inside the existing fence, construction and use 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

Per the Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (2008) or simply the "Guidelines", issued by the Virginia Department of Historic Resources ("VDHR"), POWER, who contracted Dutton + Associates, completed a Pre-Application Analysis (see Attachment 2.H.1). Based on the archival research of previously recorded historic resources, there are no designated National Historic Landmarks within 1.5 miles, 13 National Register of Historic Places ("NRHP")-listed architectural sites located within one mile, and 11 NRHP-eligible architectural sites located within 0.5 mile of the Project. The below table summarizes the Pre-Application Analysis for the Project. The Company will continue to work with the VDHR to minimize impacts to cultural resources as the Project progresses.

TABLE 4. PROJECT PRE-APPLICATION ANALYSIS SUMMARY

Radial Buffer from Project (miles)	Considered Resources	Proposed Route
0.0 to 1.5	National Historic Landmarks	None
0.0 to 1.0	NRHP (listed) (e.g., Historic Landscapes, Battlefields, Rural Historic District)	Elk Hill (VDHR# 009-0006) Otterburn (VDHR# 009-0024) Three Otters, 1485 Three Otters Rd (VDHR# 009-0031) Old Rectory/Rectory for St. Stephen's Episcopal Church (VDHR# 009-0056) Cifax Rural Historic District (VDHR# 009-0254) Bowling Eldridge House, Ridgecrest (VDHR# 009-5283) Locust Grove/Locust Hill (VDHR# 118-0219) Virginia Episcopal School, Virginia Episcopal School Historic District (VDHR# 118-0224) Caskie Cottage/Presbyterian Orphans Home (VDHR# 118-5240) Buena Vista/George Plater Tayloe House/Roanoke (VDHR# 128-0001) American Viscose Company, American Viscose Plant Historic District (VDHR# 128-0238) Mill Mountain Star/The Roanoke Star (VDHR# 128-0352) Riverland Historic District (VDHR# 128-5476)

Radial Buffer from Project (miles)	Considered Resources	Proposed Route
0.0 to 0.5	NRHP-eligible (Determined by VDHR)	Redlands Farm (VDHR# 009-0187) Early-Wheat Farm (VDHR# 009-5030) Hopkins House (VDHR# 009-5234) Wright Farm (VDHR# 009-5352) Hurt Barn (VDHR# 009-5362) Blue Ridge Parkway Historic District (VDHR# 080-5161) Reusens Dam/Reusens Hydroelectric Power Plant (VDHR# 118-0218) Cobbs-Metcalf-Overstreet House (VDHR# 118-5184) CSX Railroad (VDHR# 118-5546) Southeast Neighborhood Historic District (VDHR# 128-5865) Norfolk Southern/The Virginian Railway (VDHR# 128-6160)
0.00 (within ROW)	Archaeological sites	44RN0005 (Prehistoric Camp) 44RN0220 (Prehistoric Camp)

NRHP-Listed Resources within 1.0 mile of the Project:

The **Elk Hill (VDHR# 009-0006)** property is listed on the NRHP and under a Preservation Easement held by the VDHR. The property is directly crossed by five existing transmission line structures and the Proposed Route for the Project; however, due to mature vegetation and the rolling topography, views of the Project are limited and no substantial change in the viewshed or setting is anticipated.

The **Otterburn (VDHR# 009-0024)** site is about 0.5 mile from the Project, south of the Company's Centerville Substation. There is extensive modern development around the site and the Project is screened from the resource by vegetation.

The **Three Otters (VDHR# 009-0031)** property is located approximately 0.2 mile south of the Proposed Route. The existing transmission line is mostly screened from view by vegetation; however, the proposed structures will increase in height and be placed slightly closer to the house, resulting in a change in setting and viewshed of and from the property.

The **Old Rectory (VDHR# 009-0056)** is located approximately 0.5 mile south of the Project atop a knoll. The existing transmission line structures are visible above the vegetation from the property and additional structures may become visible due to the increased height of the proposed structures.

The **Cifax Rural Historic District (VDHR# 009-0254)** is about 0.25 mile north of the Project at its closest point. Inspection from a variety of vantage points throughout the district found that the existing transmission line is generally screened and not visible and any views of the Project will be blocked by development and vegetation.

The **Bowling Eldridge House (VDHR# 009-5283)** was moved to its current location approximately 0.8 mile from the Project in 2002. Because the house was moved, the current setting of the property is not considered an aspect of its significance.

The **Locust Grove (VDHR# 118-0219)** property is directly crossed by the Project and two existing and proposed structures are within the property boundaries. The proposed structures on the property will be taller than the existing structures; however, the existing dense vegetation on the property is expected to continue blocking views of the Project.

The **Virginia Episcopal School (VDHR# 118-0224)** property is approximately 0.5 mile from the Project, northeast of the existing Reusens Substation. Improvements within the property and thick vegetation between the Project and the resource block all except one existing transmission line structure, which may become more visible due to the increased structure height.

The **Presbyterian Orphans Home (VDHR# 118-5240)** is approximately 0.3 mile from the Project. Based on field inspection, the Project is not visible from property.

The **Buena Vista (VDHR# 128-0001)** site is about 0.8 mile from the Project and is bordered on all sides by residential development in the City of Roanoke which blocks any view of the Project.

The **American Viscose Plant Historic District (VDHR# 128-0238)** is approximately 0.1 mile from the Project at its nearest point and approximately 0.2 mile from the existing Roanoke Substation. Several transmission lines are visible from the historic district, including the transmission line to be rebuilt. The proposed structures will increase in height; however, they will not result in a compromise to the setting or viewshed that is industrial in nature and includes other infrastructure.

The **Mill Mountain Star (VDHR# 128-0352)** is located at the top of Mill Mountain and approximately 0.7 mile from the Project. The existing transmission line is located to the east of the star and blocked

by vegetation. It is anticipated that the proposed structures will continue to be screened by the topography of the mountain and dense vegetation.

The nearest point of the **Riverland Historic District (VDHR# 128-5476)** is about 0.6-mile northwest of the Project and views of the Project from the district are blocked by homes and vegetation.

Analysis of the 13 NRHP-listed resources within one mile of the Project is included in the Pre-Application Analysis (Attachment 2.H.1). Generally, no more than a moderate impact, with the majority no more than a minimal impact, is anticipated for these NRHP-listed resources.

NRHP-Eligible Resources within 0.5 mile of the Project:

Redlands Farm (VDHR# 009-0187) is directly crossed by the Project along its northwestern property boundary. Inspection from publicly available access points revealed nearly unobstructed views of an existing transmission line structure, but it is expected that views toward the Project from the home are screened by vegetation. The proposed structures on the property will increase in height and be placed slightly closer to the house, resulting in a slight change in the visibility of the Project from the property.

The **Early-Wheat Farm (VDHR# 009-5030)** site is about 0.1 mile north of the Project, but the topography and vegetation generally screen views of the Project from the homesite.

The **Hopkins House (VDHR# 009-5234)** is located 0.5 mile north of the Project on top of a knoll with open fields on all sides. The Company's existing Moseley Substation and the existing transmission line structures are visible above the vegetation from the homesite. The greater height of the proposed structures may increase the visibility of structures that can already be seen from the property and introduce views of structures that are currently screened by vegetation.

The **Wright Farm (VDHR# 009-5352)** property is about 0.2 mile south of the Proposed Route with wide views of the existing transmission line that will not be significantly changed by the Project.

The **Hurt Barn (VDHR# 009-5362)** is an NRHP-eligible property located about 0.4 mile north of the Project. A modern home and vegetation provide some screening; however, the Project is visible from the road and the visible structures will increase in height.

The NRHP-eligible **Blue Ridge Parkway Historic District (VDHR# 080-5161)** is directly crossed by the existing transmission line and the Proposed Route. Despite the increased height of the proposed structures, it is anticipated that visibility of the Project from the Blue Ridge Parkway will remain similar to the existing conditions.

The **Reusens Dam (VDHR# 118-0218)** is located about 0.1 mile from Reusens Substation at the northern end of the Project. The Project is not visible from the NRHP-eligible resource.

The **Cobbs-Metcalf-Overstreet House (VDHR# 118-5184)** is directly crossed by the Project with one existing and one proposed structure within the property boundaries. The structure on the property is visible from most of the homesite and is anticipated to increase in height.

The **CSX Railroad (VDHR# 118-5546)** is located about 0.1 mile from Reusens Substation at the northern end of the Project. The Project is not visible from the NRHP-eligible resource.

The **Southeast Neighborhood Historic District (VDHR# 128-5865)** is a large area just north of the Roanoke Substation and ranging up to 1.3 miles away from the Project in the City of Roanoke. Inspection from multiple viewpoints found that the Project is generally not visible from the district.

The **Norfolk Southern Railway (VDHR# 128-6160)** property is approximately 0.4 mile north of the Company's Roanoke Substation and views of the Project are limited by industrial development.

Analysis of the 11 NRHP-eligible resources within 0.5 mile of the Project is included in the Pre-Application Analysis (Attachment 2.H.1). Generally, no more than a moderate impact, with the majority no more than a minimal impact, is anticipated for these NRHP-listed resources.

With regards to archaeology, there are two previously recorded sites within the Project ROW. These two sites are both prehistoric occupation sites, one of which has been determined eligible for listing in the NRHP by the VDHR and one that has not been evaluated. One additional site, the Mountain View Church Cemetery, has not been previously recorded or investigated, but was brought to attention by a local property owner and is located adjacent to the ROW of the Proposed Route.

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

As noted in Section 2.F, two USFWS-listed species (Indiana bat and northern long-eared bat) were identified by the USFWS to potentially occur near the transmission line to be rebuilt. Five additional USFWS-listed species (James spiny mussel, Roanoke Logperch, Bog Turtle, Atlantic pigtoe, and yellow lance) were identified by the VDWR. The IPaC and VDWR resources are included as Attachments 2.F.1 and 2.F.2 to this Supplement, respectively. Consultation with the USFWS, the VDWR, and the VDCR will be on-going as the Project progresses. As required, the Company will coordinate with the USFWS, the VDWR, and the VDCR as appropriate to determine whether surveys are necessary and to minimize impacts wildlife resources. The Project will be constructed within or near the existing ROW for most of its length and thus minimizes habitat fragmentation and tree clearing to the extent possible. Minimal tree clearing will be required to maintain the generally 100-foot-wide ROW and accounts for the removal of danger trees or other vegetation that may be located within or immediately adjacent to the ROW.

K. Recreation, Agricultural, and Forest Resources

The general character of the Project area is characterized predominantly by forested, agricultural, pasturelands, and commercially developed land uses and residential areas. The Project will be constructed largely within or near the existing 100-foot-wide ROW. As a result, 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 March 4, 2022, noting five existing and one proposed VOF conservation easements are crossed by the Project. The VOF also stated that

they hold numerous easements and have multiple projects of interest within one mile of the Project area. The Project will be rebuilt on the existing centerline across each of the existing and proposed VOF conservation easements.

There are no existing Virginia Department of Forestry (“VDof”) conservation easements crossed by the Project area according to their publicly available database.

The Project does not cross any local or state parks between the Reusens and Roanoke Substations; however, the Project does cross the Blue Ridge Parkway. The Project will be rebuilt within the existing ROW as it crosses the Blue Ridge Parkway. No other public parks or recreational areas are crossed by the Project.

The Proposed Route crosses approximately 40 acres of farmland of statewide importance¹ and approximately 10 acres of prime and unique farmland soil² at or near existing locations. These designations are based on soil characteristics and established by the United States Department of Agriculture’s Natural Resources Conservation Service’s (“NRCS”) Soil Survey Geographic Database (“SSURGO”) data. Nevertheless, impacts on agricultural land from the Project are expected to be minimal. The permanent loss of soils or farmable land would be generally limited to the structure foundation locations. As the ROW has been in use since the 1920s and 1930s, it is not expected that the Project will permanently impact farmland, as most farming uses currently co-exist with the transmission line.

There are no other local or state conservation lands or easements, parks, designated wilderness areas, or game lands located in the Project area or in proximity to any route. Overall, there are pockets of forested cover along the Project, but the transmission line will largely be rebuilt within or near the existing ROW and is anticipated to have minimal impacts to forested resources. 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 in Volume 1 of the Application.

¹ Prime farmland is land that has the best combination of physical and chemical characteristics for producing crops (based on USDA-NRCS SSURGO data).

² Soils that do not meet the prime farmland category but are still recognized for their productivity by states may qualify as soils of statewide importance (based on USDA-NRCS SSURGO data).

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

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

M. Geology and Mineral Resources

According to the Department of Energy Division of Geology and Mineral Resources Interactive Geologic Map, the Project is in the Piedmont, Blue Ridge, and Valley and Ridge physiographic provinces of Virginia. The Company reviewed the Division of Geology and Mineral Resources' Interactive Geologic Map, no known sinkholes, active mines, or quarries are crossed by the Project. The VDCR noted that the western extents of the Project intersect the karst bedrock screening layer and recommended minimizing surface disturbance and strictly implement erosion and sediment controls to reduce potential impacts to karst features. The Company does not anticipate the Project will result in negative impacts on geologic or mineral resources.

N. Transportation Infrastructure

The Project will be constructed largely within or parallel to the existing ROW and the Proposed Route crosses existing transportation infrastructure at or near existing locations. The Project crosses two United States Routes (501 and ~~221~~/460), four State Highways (122, 43, 24, and 634), and approximately 120 county and local roads. The Proposed Route crosses two Norfolk Southern Railway Company railroads. In letters dated March 2, March 3, and March 10, 2022, the Virginia Department of Transportation ("VDOT") recommended continued coordination with VDOT and the localities regarding potential impacts on transportation operations. No future VDOT transportation plans or widening projects were identified in the Project area based on publicly available information and planning documents. The Project crosses State Route 43 (Peaks Road) which is a state scenic byway and the Blue Ridge Parkway which is a federal scenic byway. The Proposed Route is within the existing ROW across the scenic byways and the Company will continue to maintain the existing 100-foot-wide ROW following construction of the Project. The Company will coordinate with VDOT during the environmental permitting phase of the Project to determine the extent of land use permits and traffic control plans, as needed for the Project.

The FAA's website was reviewed to identify airports within 10 miles of the Project. Based on this review, nine airports or heliports were identified: Robinson Private Airport (VG25) (approximately 0.3 mile), Centra Bedford Memorial Hospital heliport (approximately one mile), Carilion Roanoke Memorial Hospital heliport (approximately one mile), Central Lynchburg General Hospital heliport (approximately three miles), Roanoke Blacksburg Regional Airport (approximately 5 miles), Lewis

Gale Medical Center heliport (approximately six miles), Falwell private airport (approximately seven miles), Lynchburg Regional Airport (approximately seven miles), New London Airport (approximately nine miles). The Company will use the Federal Aviation Administration's ("FAA") 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.

ATTACHMENTS

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

August 8, 2022

APPALACHIAN POWER COMPANY

Reusens to Roanoke 138 kV Rebuild Project

SCC Case No. PUR-2022-00163

**Bedford County, Roanoke County, City of Lynchburg, City of Roanoke,
and Town of Vinton, Virginia**

*Virginia Department of Environmental Quality
Desktop Wetland and Stream Delineation Report*

PROJECT NUMBER:

162806

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ATTACHMENT:

ATTACHMENT A: DESKTOP DELINEATED FEATURES AND ROUTE MAP

ACRONYMS AND ABBREVIATIONS

Appalachian Power	Appalachian Power Company
CIR	Color Infrared
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
kV	kilovolt
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	Reusens - Roanoke 138-kV Transmission Line Rebuild 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
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

Appalachian Power Company (Appalachian or the “Company”) is planning to rebuild an existing 138 kV (kilovolt) transmission line due to the condition, performance, and risk associated with the asset; including its inability to meet current National Electric Safety Code and American Society of Civil Engineers standards. The Reusens – Roanoke 138 kV Rebuild Project (Project) consists of rebuilding approximately 43 miles of the existing Reusens – Roanoke 138 kV Line between the Company’s Reusens Substation in the City of Lynchburg and Roanoke Substation in the City of Roanoke. The Project is located in Roanoke and Bedford Counties, the Cities of Roanoke and Lynchburg, and the Town of Vinton, all of which are in the northeastern part of Appalachian’s Virginia service territory. The location of the proposed Project is shown in Attachment A.

The existing 138-kV line was constructed in 1926 using double-circuit steel lattice towers, most of which are over 90 years old. The transmission line will be rebuilt primarily using double-circuit steel lattice towers and double-circuit steel monopole structures; however, final structure types will be dependent on final engineering and additional studies. The proposed structures are anticipated to be approximately 25 feet taller than the existing structures, on average, to meet current design standards. The transmission line will primarily be rebuilt within or adjacent to the existing right-of-way (ROW) that is typically 100 feet wide.

Appalachian Power contracted POWER Engineers, Inc. (POWER) to prepare this Desktop Wetland and Stream Delineation Report for inclusion in the Project’s Application for a Certificate of Public Convenience and Necessity to be filed with the Virginia State Corporation Commission (SCC), which approves or denies such applications.

The purpose of the Desktop Wetland and Stream Delineation Report is to identify potential federally-regulated waters of the United States within the typical 100-foot-wide ROW of the Proposed Route for the Project. No feasible alternative routes were identified for the Project (see the Reusens – Roanoke 138 kV Rebuild Siting Study). This report includes a description of the methodologies POWER used to determine the location and size of potential regulated waters within the Project ROW and guidance regarding probability of encountering the identified 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 in order to identify areas where wetlands or streams could potentially be located within the proposed ROW of the Project. The ROW for the Project will generally be 100 feet wide in areas of new, supplemental, or existing easements. In some locations, the ROW width will be increased as needed to comply with safety requirements; however, POWER’s review assumed a 100-foot-wide ROW for the entire Project. The GIS data and mapping sources reviewed include the following:

- United States Geological Survey (USGS), United States Elevation Data (USGS 2021)
- Virginia Geographic Information Network (VGIN) Virginia Base Mapping Program (VBMP) color orthoimagery (VGIN 2015, 2018, and 2019).
- Google Earth color aerial photography, including historical aerial data (Google Earth 2007, 2011, 2014, 2015, 2016, 2017, and 2021).
- National Hydrography Dataset (NHD) stream and river data (USGS 2022).
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (USFWS 2022).
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey of Bedford County, Virginia (USDA NRCS 1989).
- USDA NRCS Soil Survey of Campbell County and City of Lynchburg, Virginia (USDA NRCS 1977).
- USDA NRCS Soil Survey of Roanoke County and the Cities of Roanoke and Salem, Virginia (USDA NRCS 1997).
- USDA NRCS Web Soil Survey (USDA NRCS 2022).
- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer data (FEMA 2022).

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] 2020).

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 Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the United States Army Corps of Engineers (USACE) Wetland Delineation Manual, Eastern Mountains and Piedmont Region* (USACE 2012).

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

Aerial imagery and NWI mapping for the Project was 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 wetland systems: Marine, Estuarine, Riverine, Lacustrine, and Palustrine. The Palustrine system is the predominant wetland system present within the Project 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). Riverine systems within the study area should be minimal. The remaining wetland systems (i.e., Marine, Estuarine, and Lacustrine) are expected to be absent as the study area does not intersect with lakes, reservoirs, or tidal areas. Wetlands within the Palustrine system that are likely to be encountered along the proposed ROW fall into the following four Cowardin 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 percent cover of particles smaller than stones and a vegetative cover less than 30 percent.

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 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 flow a considerable portion of the time but cease to flow occasionally or seasonally.
- **Ephemeral Streams.** These channels have flowing water only during and for a short duration after precipitation events in a typical year. Ephemeral streambeds are located above the ground water table year-round and are often described as headwater streams

POWER used aerial imagery, topographic mapping, NHD datasets, and local stream datasets to determine the location of potential streams. Stream habitat types were not identified during this desktop delineation.

2.4 Wetland and Stream Data Interpretation

In order to assess the probability for streams and wetlands to occur within 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 Color Infrared (CIR) aerial imagery (VBMP 2019), current and historical aerial photography (Google Earth, 2002, 2003, 2005, 2006, 2007, 2008, 2011, 2013, 2015, 2017, and 2021; VGIN 2015, 2018, and 2019), and USGS topographic data (USGS 2021) were used to help determine the location and size of potential wetland and stream resources within the Project ROW. The USGS topographic 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 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 figures included in Attachment A.

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 2022). 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 figures included in Attachment A.

2.4.3 National Hydrography Dataset

The NHD (USGS 2022) was used to identify potential and known streams within the Project ROW. 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 2022). NHD mapping is included on the Desktop Wetland and Stream Delineation figures included in Attachment A.

2.4.4 National Flood Hazard Layer Floodplain Dataset

The NHD (USGS 2022) was used to identify potential and known streams within the Project ROW. 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 2022). NHD mapping is included on the Desktop Wetland and Stream Delineation figures included in Attachment A.

2.4.5 Soil Survey Mapping

USDA NRCS digital soil survey data for Patrick and Floyd Counties, Virginia were used to locate areas of hydric soils, which are typically found in wetlands (USDA NRCS 2009a; USDA NRCS 2009b; USDA NRCS 2022). The NRCS soil survey group soil units into three categories; non-hydric soil units, soil units with hydric soil inclusions, and units that contained 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 inclusion soils are identified on the map sheets included in Attachment A. There are four hydric soil areas mapped within the Project ROW, which are shown in Attachment A.

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.

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) streams identified with aerial imagery (color and CIR) 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.

3.0 RESULTS AND DISCUSSION

The results of the Desktop Wetland and Stream Delineation Report are presented for potential wetlands and streams in Tables 3 and 4, respectively. Figures showing the location of desktop delineated wetlands and streams are included as Attachment A.

The desktop delineation assumed a 100-foot-wide ROW centered on the Proposed Route (no Alternative Routes were considered for the Project as discussed in Section I.E. of the Response to Guideline of the Application) to assess potential acreage and linear feet of wetlands and streams, respectively. In some locations, the ROW width will be increased as needed to comply with safety requirements after final engineering is complete. 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 later during a field study.

TABLE 3 DESKTOP WETLAND DELINEATION RESULTS

WETLAND PROBABILITY	POTENTIAL WETLAND CLASSIFICATION	ESTIMATED NUMBER OF WETLAND OCCURRENCES	ESTIMATED ACREAGE WITHIN ROW
High	PFO, PSS, PEM, PUB	18	5.6
Moderate	PFO, PSS, PEM	67	13.7
Low	PFO, PSS, PEM	36	4.6
Wetlands Total		121	23.9

TABLE 4 DESKTOP STREAM DELINEATION RESULTS

STREAM PROBABILITY	ESTIMATED NUMBER OF OCCURRENCES	ESTIMATED LINEAR FEET WITHIN ROW
High	77	10,889
Moderate	4	945
Low	37	5,783
Streams Total	118	17,617

3.1 Proposed Route Discussion

The Proposed Route for the Project is approximately 43 miles long between the Company’s Reusens Substation in the City of Lynchburg and Roanoke Substation in the City of Roanoke. The Project will rebuild the transmission line primarily within or parallel to the existing transmission line ROW, as described in Section II.A.9 of the Response to Guidelines and the *Reusens to Roanoke 138 kV Rebuild Siting Study* (the “Siting Study”) in Volume II of the Application. Between the existing Reusens and Roanoke substations, the ROW of the Proposed Route crosses a total of 118 potential streams and 121 potential wetlands, based on the resources described above. Since the Proposed Route is largely within or parallel to the existing 100-foot-wide ROW, the desktop delineated wetland and stream features will be crossed at or near existing crossing locations (Attachment A).

The most recent aerial imagery available for the Project area is from 2021. In areas where the Proposed Route uses the existing ROW, the Cowardin classification may include PEM and/or PSS wetlands; however, classification may change depending on frequency of maintenance operations. In addition, moderate and low stream probabilities without NHD data are based on distinct shifts in topography, creating drainage channels indistinguishable in most aerial imagery. Portions of the proposed ROW have shifted outside of the existing ROW into native forested areas where PFO and PSS wetlands could be found and therefore, these classifications are more likely to occur where the Proposed Route deviates from the existing ROW.

High Probability

A total of 18 high probability wetlands, totaling 5.6 acres, were identified within the ROW of the Proposed Route and are crossed at or directly adjacent to existing locations (Map Tiles 7, 8, 15, 18, 19, 26, 27, 37, 42, 43, 44, 47, 69, 70, and 73 – Attachment A). The high probability wetlands were determined to be likely PSS, PEM, and PUB wetlands at locations where the Proposed Route will utilize the existing ROW. At locations where the Route will be shifted and located adjacent to the existing ROW, high probability wetlands were determined to be likely PSS and PFO wetlands with some PEM characteristics. At these locations where the Proposed Route is adjacent to the existing ROW, impacts to high probability PFO wetlands will likely be required; however, field verification would be necessary to confirm the extent of forested wetland conditions. In locations where the Proposed Route will be located within existing ROW, impacts to PFO wetlands will be minimized due to previous clearing of the existing ROW; however, field verification will be necessary to confirm wetland conditions.

A total of 77 high probability streams, totaling 10,889 linear feet, were identified within the ROW of the Proposed Route. The Roanoke River is crossed adjacent to the existing ROW location (Map Tile 70) to minimize impacts (approximately 210 linear feet). The remaining high probability streams consist of smaller named streams and rivers that are likely perennial along with unnamed streams that are likely a combination of intermittent and perennial channels. Other named high probability streams include Cheese Creek, Ivy Creek, Elk Creek, Chestnut Branch, North Otter Creek, Big Otter River, Little Otter River, Wolf Creek, Reed Creek, Goose Creek, Shockoe Creek, Bore Auger Creek, Beaverdam Creek, Curby Branch, Nat Branch, and Garnand Branch. The ROW of the Proposed Route crosses high probability streams at or adjacent to existing locations, as identified with the NHD data. It is expected that all high probability streams will be spanned by the transmission line without permanent impacts.

Moderate Probability

A total of 67 moderate probability wetlands, totaling 13.7 acres, were identified within the ROW of the Proposed Route and are crossed at or adjacent to existing locations. The moderate probability wetlands were determined to be a combination of PEM, PSS, and PFO Cowardin classifications and were generally found near the identified high probability streams, which are crossed by the ROW. A total of four moderate probability streams, totaling 945 linear feet, were identified within the ROW of the Proposed Route. The moderate probability streams are likely perennial or intermittent channels and are crossed at or near existing locations.

Low Probability

A total of 36 low probability wetlands, totaling 4.6 acres, were identified within the ROW of the Proposed Route and include a combination of PEM, PSS, and PFO Cowardin classifications. The low probability wetlands were determined to be likely PSS and PEM wetlands at locations where the Proposed Route will utilize the existing ROW. At locations where the Route will be shifted

and located adjacent to the existing ROW, low probability wetlands were determined to be likely PSS and PFO wetlands with some PEM characteristics. At these locations where the Proposed Route is adjacent to the existing ROW, impacts to low probability PFO wetlands will likely be required; however, field verification would be necessary to confirm the extent of forested wetland conditions. In locations where the Proposed Route will be located within existing ROW, impacts to PFO wetlands will be minimized due to previous clearing of the existing ROW; however, field verification will be necessary to confirm wetland conditions.

A total of 37 low probability streams, totaling 5,783 linear feet, were identified within the ROW of the Proposed Route, and are likely intermittent or ephemeral channels.

4.0 CONCLUSION

A summary of the desktop wetland and stream resources identified for the Reusens – Roanoke 138 kV Rebuild Project is provided in Table 5.

TABLE 5 SUMMARY OF DESKTOP WETLAND AND STREAM DELINEATIONS

DESKTOP DELINEATION	ESTIMATED NUMBER OF OCCURRENCES	ESTIMATED ACREAGE/LINEAR FOOTAGE WITHIN ROW
Wetland Total	121	23.9 acres
Stream Total	118	17,617 linear feet

Based on a review of the desktop delineation, the Proposed Route between the Company's existing Reusens and Roanoke substations will result in minimal impacts. The Proposed Route will largely be rebuilt within or parallel to the existing 100-foot-wide ROW, so new impacts to any stream or wetland features that are crossed can likely be minimized or avoided during construction (Attachment A).

High probability streams, including the Roanoke River, Bore Auger Creek, and Otter Creek, are crossed at or directly adjacent to the existing crossing locations. Overall, impacts to stream and wetland features can be minimized given the Proposed Route will largely be rebuilt within or parallel to the existing ROW.

In general, temporary and permanent impacts to wetlands and streams during construction of transmission lines can be avoided through strategic placement of transmission foundations and structures to minimize impacts to regulated resources. In most cases, wetlands and streams can be spanned entirely by a transmission line. Where avoidance is not possible, impacts to wetlands and streams are generally minimal due to the relatively small footprint of transmission line structure foundations.

Typically, impacts to wetlands from access roads, which are required to construct the transmission lines, can be minimized by using timber mats to reduce disturbance of the ground

surface within wetland areas. 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 proposed ROW of 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 applicable regional supplement (USACE 2012), and other appropriate regulatory guidance.

5.0 REFERENCES

- Cowardin, L.M., F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, Fish and Wildlife Service, U.S. Department of the Interior, Washington, DC. 103 p.
- Environmental Laboratory. 1987. U.S. Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 p, plus appendices.
- Federal Emergency Management Agency (FEMA). 2022. National Flood Hazard Layer Viewer. Available at: <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>. Accessed June 16, 2022.
- Google Earth. 2007, 2011, 2014, 2015, 2016, 2017, and 2021. Imagery dates vary by location. Google Earth Pro, Version 7.3.4.8642. Available at: <https://www.google.com/earth/>. Accessed June 16, 2022.
- Minnesota IT Services. n.d. Geospatial Information Office: Color Infrared (CIR) Imagery. Available at: <http://www.mngeo.state.mn.us/chouse/airphoto/cir.html>. Accessed August 12, 2021.
- Simley, J.D. and W.J. Carswell, Jr. 2009. The National Map - Hydrography: US Geological Survey Fact Sheet 2009-3054, 4 pp.
- United States Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0. Eds: J.F. Berkowitz, J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center. 147 pp, plus appendices.
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). 1997. Soil Survey of Roanoke County and the Cities of Roanoke and Salem, Virginia. Available at: https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/virginia/rscVA1997/rscVA1997.pdf.
- _____. 1989. Soil Survey of Bedford County, Virginia. Available at: https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/virginia/bedfordVA1989/bedfordVA1989.pdf.
- _____. 1977. Soil Survey of Campbell County and the City of Lynchburg, Virginia. Available at: https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/virginia/campbellcVA1977/campbellcVA1977.pdf.
- _____. 2022. Web Soil Survey. Soil Survey Staff. Available online at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed May 26, 2022.

United States Environmental Protection Agency (USEPA). 2020. Section 404 of the Clean Water Act: How Wetlands are Defined and Identified. Available at: <https://www.epa.gov/cwa-404/section-404-clean-water-act-how-wetlands-are-defined-and-identified>. Accessed May 26, 2022.

United States Fish and Wildlife Service (USFWS). 2022. National Wetlands Inventory (NWI) by state. Available at: <http://www.fws.gov/wetlands/data/State-Downloads.html>. Accessed June 16, 2022.

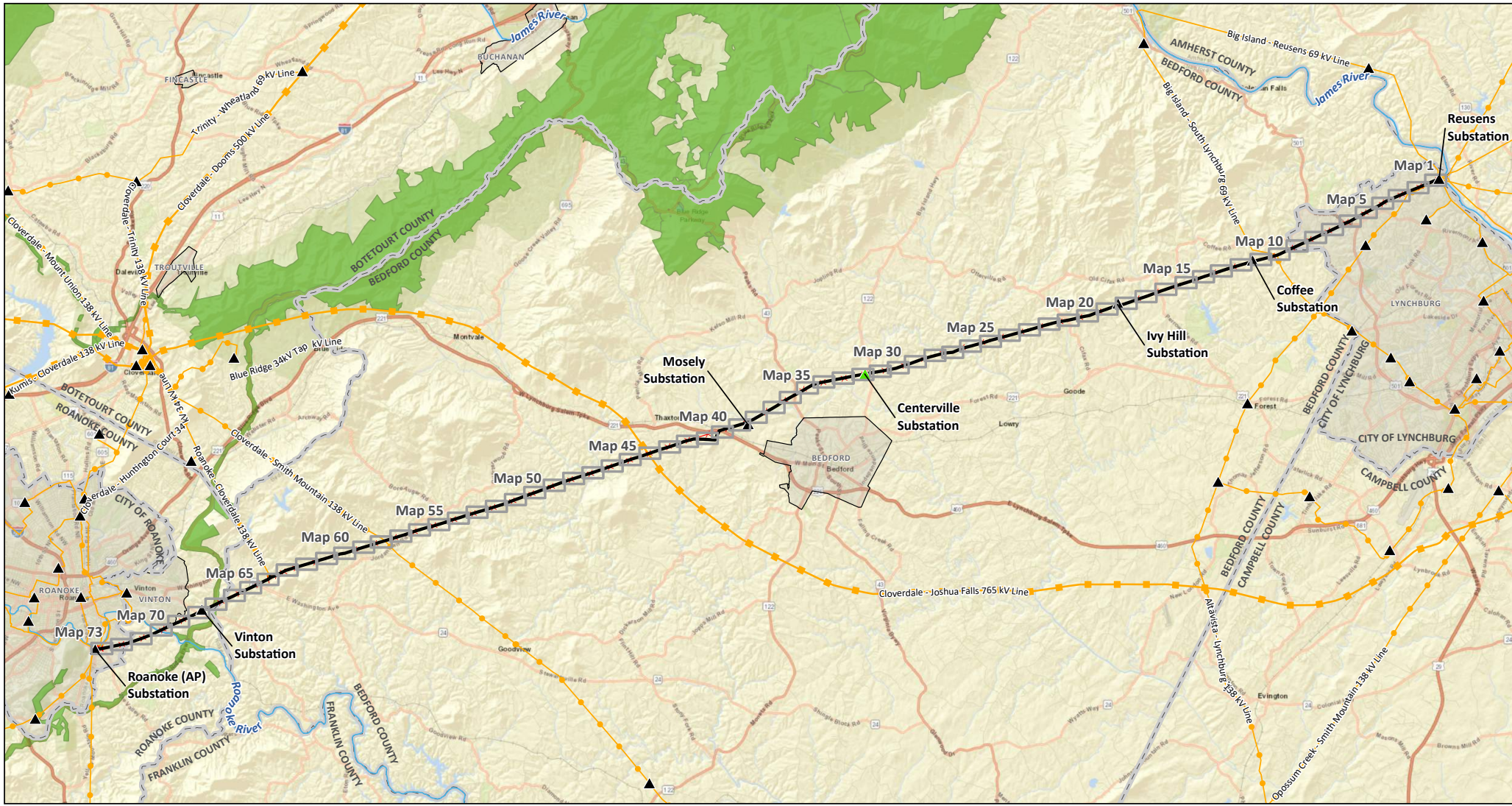
United States Geological Survey (USGS). 2021. United States Elevation Data (NED – Legacy 10m Resolution). Available at <https://www.usgs.gov/programs/national-geospatial-program/national-map>. Accessed June 16, 2022.

_____. 2022. National Hydrography Dataset (NHD). Available at: https://www.usgs.gov/core-science-systems/ngp/national-hydrography/national-hydrography-dataset?qt-science_support_page_related_con=0#qt-science_support_page_related_con. Accessed June 16, 2022.

Virginia Base Mapping Program (VBMP). 2019. CIR Imagery and Orthophotography. Available at: https://gismaps.vdem.virginia.gov/arcgis/rest/services/VBMP_Imagery/VBMP2018_Infrared_WGS/MapServer. Accessed June 16, 2022.

Virginia Geographic Information Network (VGIN). 2015, 2018, and 2019. Virginia Base Mapping Program Orthoimagery. Available at: <https://vgin.maps.arcgis.com/apps/Viewer/index.html?appid=cbe6a0c1b2c440168e228ee33b89cb38#>. Accessed June 16, 2022.

ATTACHMENT A: DESKTOP DELINEATED FEATURES AND ROUTE MAP



	Map Tile		Existing APCo Transmission Line (345 kV +)
	Existing APCo Substation to be Expanded		River (NHD)
	Existing APCo Substation		Federal Conservation Lands
	Proposed Route		Municipality
	Existing APCo Transmission Line (69 kV or lower)		County Boundary
	Existing APCo Transmission Line (115-230 kV)		

Roanoke & Bedford Counties,
 Cities of Roanoke & Lynchburg,
 Town of Vinton,
 Virginia

1" = 3 miles
Date: 10/26/2022; Author: dkunde; Project: 162806

Attachment A - Desktop Stream and Wetland Delineation INDEX
 Reusens - Roanoke 138 kV Rebuild Project

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