

APPALACHIAN POWER COMPANY
BEFORE THE
VIRGINIA STATE CORPORATION COMMISSION
CASE NO. PUR-2021-00219

APPLICATION FOR APPROVAL AND CERTIFICATION OF
ELECTRICAL TRANSMISSION LINE

Fieldale to Ridgeway
138 kV Rebuild Project

VOLUME 2 OF 2

Siting Study and VDEQ Supplement

November 2021

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Siting Study

for

Fieldale to Ridgeway 138 kV Rebuild Project

SCC Case No. PUR-2021-00219

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November 2021

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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.
Diversion	A minor adjustment to the existing route where no other alternative is considered.
Encroachment	Any structure or activity within an existing right-of-way that could interfere with the safe, reliable operation of transmission facilities is called an encroachment and is prohibited under the terms of a right-of-way.
Endpoints	The project starting and ending point(s) (“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 studied in the siting report.
Proposed Route	The alignment on which the applicant/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. The Proposed Route can include a combination of Rebuild Routes.
Rebuild Segments	Conceptual routing segments that consider the use of existing ROW
Reroute Segments	Conceptual routing segments that consider areas outside 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.
Transmission Line Extension	An electric transmission line from a tap point on an existing transmission line to a substation or customer.

ACRONYMS

AEP	American Electric Power Company, Inc.
CBG	Census Block Group
Company	Appalachian Power Company
IPaC	Information for Planning and Consultation
kV	kilovolt
NCED	National Conservation Easement Database
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	Fieldale to Ridgeway 138 kV Rebuild Project
ROW	Right-of-way
SCC	Virginia State Corporation Commission
U.S.	United States
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VA/NC	Virginia/North Carolina
VCRIS	Virginia Cultural Resource Information System
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDH	Virginia Department of Health
VDHR	Virginia Department of Historic Resources
VDOF	Virginia Department of Forestry
VDOT	Virginia Department of Transportation
VDWR	Virginia Department of Wildlife Resources
VOF	Virginia Outdoors Foundation
WOTUS	Waters of the United States

1.0 PROJECT DESCRIPTION

Appalachian Power Company (Appalachian or the “Company”) is planning to rebuild an existing 138 kilovolt (kV) transmission line due to the deteriorated condition, performance, and risk associated with the asset, which was originally built in the 1940’s. The Fieldale to Ridgeway 138 kV Rebuild Project (the “Project”) consists of rebuilding approximately 15 miles of the existing Fieldale – Dan River 138 kV Transmission Line between the Company’s existing Fieldale, Sheffield, and Ridgeway substations and to structure 28-103 near the Virginia/North Carolina (VA/NC) border. The Project is in the southeastern extents of the Company’s service territory and is an interconnection with Duke Energy Carolinas, LLC or Duke Energy. The Project will end at the VA/NC border and will not extend into Duke Energy’s service territory.

The existing 138 kV line was constructed as a single-circuit transmission line in 1949 primarily using a combination of wood H-frame and wood three-pole structures, which are now over 70 years old. The transmission line will be rebuilt primarily using single-circuit steel H-frames and single-circuit monopole structures; however, final structure types will be dependent on final engineering and additional studies. The anticipated heights of the proposed structures (excluding the lattice tower structures) on the Project range between 55 and 85 feet, with an average structure height of 67 feet. Lattice towers are currently used across the Smith River and modern lattice towers will be used for the rebuild in this location to accommodate longer spans. The transmission line will largely be rebuilt in or near the existing 100-foot-wide right-of-way (ROW) depending on constructability and outage constraints. See attached Outreach Fact Sheet (Attachment A).

The Project requires a Certificate of Public Convenience and Necessity from the Virginia State Corporation Commission (SCC). The Company will seek approval from the Virginia SCC to rebuild the 138 kV transmission line in a typical 100-foot-wide ROW sited within an approximately 200- to 250-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 July 2025.

The Company initiated the siting process for the Project in June 2019, with initial study segments being reviewed in or near the existing ROW of the Fieldale – Dan River 138 kV Transmission Line. The Company initially met with local Henry County officials in September 2019 to introduce the Project and gain feedback. After initial stakeholder coordination, the Company performed feasibility studies for the Project and presented a study segment network to the public on a Project-specific website with a comment period in March 2021. Pending issuance of all required federal, state and/or local permits, the Company estimates that it will take approximately three years to coordinate outages and construct the Project.

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 includes the Company-owned portion of the Fieldale – Dan River 138 kV Transmission Line between the Fieldale Substation and existing structure 28-103, near the VA/NC border, at the southeastern extents of the Company's service territory (see Attachment A, Fact Sheet). The existing Fieldale – Dan River 138 kV Transmission Line is outage constrained and can only be taken out of service for a limited amount of time (during spring and fall outage windows); therefore, the Project cannot be rebuilt entirely within the existing ROW. In order to minimize outages, the Siting Team attempted to parallel the existing ROW to the extent possible and rebuild the transmission line in the clear.

Next, the Siting Team defined the **Study Area** to develop transmission line routes. The **Study Area** for the proposed rebuild includes the existing Fieldale – Dan River 138 kV Transmission Line ROW and an approximate 1.5-mile buffer to each side of the existing centerline. The Study Area encompasses the Project endpoints and the logical area in between (see Attachment B, Map 1). The Study Area is generally bound by the Company's Fieldale Substation to the north, the VA/NC border to the southeast, the communities of Horse Pasture and Ridgeway to the west and the City of Martinsville to the east. The Study Area consists of rolling terrain with some steeper topography around the Smith River and is crossed by major roadways and highways, such as United States Routes 58 (A.L. Philpott Highway), 220 (Greensboro Road), and 58 & 220 Bypass (William F. Stone Highway) and State Route 57 (Appalachian Drive). The Study Area consists of various residential, commercial, and timbering areas and historical and recreational sites (see Attachment C for Study Area photographs).

Due to the dense residential development in the Farmingdale area, one **Focus Area** was identified for the Project (described in Section 3.0) between the Sheffield and Ridgeway substations to review potential Reroute Segments that avoided development (see Attachment B, Map 2).

Data Collection (see Attachments D, E, and F) and **Constraints and Opportunities** mapping (see Attachment B) 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 (see Attachments D and E). Major constraints include urban areas surrounding the Project such as the towns of Fieldale and Ridgeway, local recreational sites and parks, and the Smith River. Other constraints include numerous residential and commercial developments concentrated along major roadways and highways that cross the Study Area.

The main siting opportunity considered for the Project is the existing ROW corridor; the Siting Team considered rebuilding on the existing centerline in constrained areas and paralleling the existing ROW to minimize outage durations. The Siting Team reviewed Rebuild and Reroute Segments as conceptual route options to avoid constraints where possible.

The refinement and development of **Study Segments** is the next step (see Section 4.0). Study Segments are partial alignments that when combined form a complete route. Study Segments were presented to the public during a virtual open house (see Section 5.0).

Next, the Study Segments were assembled into logical **Rebuild Routes** for each rebuild section of the Project and evaluated (see Sections 6.0 and 7.0). Lastly, based on analysis and stakeholder input, the Siting Team identified a **Proposed Route** and the reasons for the Project's Proposed Route selection are summarized in Section 8.0.

3.0 REROUTE SEGMENTS (FARMINGDALE FOCUS AREA)

During the desktop route analysis, the Siting Team reviewed constraint areas for each rebuild section of the Project (Fieldale to Sheffield, Sheffield to Ridgeway, and Ridgeway to existing structure 28-103) and determined where paralleling the existing ROW could minimize outage durations. One Focus Area was identified between the Sheffield and Ridgeway substations to explore potential off-centerline options where a direct parallel or minor deviations from the existing centerline was not possible due to dense development (Attachment B, Map 2). The Farmingdale Focus Area considers Reroute Segments, or off-centerline conceptual route options, to avoid the dense residential and commercial development that has occurred in and around the existing ROW.

The existing Fieldale – Dan River 138 kV Transmission Line crosses residential communities and commercial development in and around the Farmingdale area and Greensboro Road. Three dwellings have been built in the existing 100-foot ROW in the Farmingdale Focus Area, between the Sheffield and Ridgeway substations. In order to minimize impacts to residences and rebuild the Project in-the-clear, the Siting Team considered greenfield Reroute Segments that avoid the development and cross Greensboro Road (U.S. Route 220) at feasible crossing locations away from development (Map 2). Viable new crossings of Greensboro Road were limited due to the amount of development along the major roadway; two possible crossing locations were identified, but still within close proximity to homes and businesses. Reroute Segments located north of the existing ROW are not feasible given the terrain, proximity to William F. Stone Highway, and impacts to other residential areas. As a result, the Siting Team developed southern Reroute Segments in the Farmingdale Focus Area that are largely through open, agricultural areas but require new ROW. The southern options attempt to follow parcel boundaries and avoid bisecting newly affected properties where possible; however, additional heavy angles are required to parallel property lines. In addition, the off-centerline routes considered were approximately 0.5 mile longer compared to the on-centerline routes and required many angles through areas not already crossed by the existing ROW. The southern Reroute Segments are located within 500 feet to two National Register of Historic Places (NRHP)-listed resources, Belleview and Ingleside Place, with Ingleside Place being crossed by a Reroute Segment.

Considering the siting challenges in the Farmingdale Focus Area, the Company's planners and Siting Team met and determined this section of the Project could accommodate an outage and be rebuilt on the existing centerline. As a result, the southern Reroute Segments were dismissed and the Siting Team considered an on-centerline study segment between Sheffield and Ridgeway substations (Section 4.0).

4.0 STUDY SEGMENTS

For discussion purposes, the Siting Team identified three rebuild sections for the Project based on intermediate substations:

1. Fieldale to Sheffield: Rebuild approximately six miles between the Fieldale and Sheffield substations.
2. Sheffield to Ridgeway: Rebuild approximately four miles between the Sheffield and Ridgeway substations.
3. Ridgeway to Structure 28-103: Rebuild approximately five miles between the Ridgeway Substation and existing structure 28-103, near the VA/NC border.

The Study Segments are developed to meet the scope and need of the Project and, at the same time, minimize environmental and socioeconomic impacts and Project costs.

The Study Area is generally characterized by forested, agricultural, recreational, residential, and commercial land uses (see Attachment C, Study Area Photographs). Between the Fieldale and Sheffield substations, the existing Fieldale – Dan River 138 kV Transmission Line crosses the Smith River and Henry County’s Fieldale Trail and River Access Easement, rolling terrain, forested lands, and residential areas (Photos 1 – 4). The second rebuild section between the Sheffield and Ridgeway substations consists of multiple land uses including agricultural, commercial, and residential development around the Farmingdale community and Greensboro Road corridor (Photos 5 and 6). From the Ridgeway Substation to existing structure 28-103, forested and timbering lands are the predominant land use with scattered residential development along roadways (Photos 7 and 8).

Using existing ROWs 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 suggests that existing ROWs should be given priority when adding new transmission facilities, and which promote the use of existing ROW for new transmission facilities. Given the outage constraints for the Project, rebuilding in the existing ROW for the entirety of the Project is not feasible and paralleling the existing ROW was considered. In assessing the suitability of using the existing Fieldale – Dan River 138 kV Transmission Line ROW (the “Rebuild Segments”), the Company undertook the following activities:

- Company planners determined that an extended outage to rebuild the existing transmission line within the existing ROW is feasible in the spring and fall outage windows.

- The Siting Team undertook desktop and field examinations and concluded that largely rebuilding the Fieldale – Dan River 138 kV Transmission Line in or parallel to the existing ROW is reasonable and the best route where feasible.
- Company ROW agents reviewed the existing ROW easements and determined that they generally permit line rebuilds and upgrades.
- The Siting Team undertook field reconnaissance of the existing ROW to determine any existing development in or near the ROW.
- Using the existing or paralleling the existing ROW minimizes impacts on the human, visual, and natural environments. Furthermore, new routes would result in more impacts, given that new ROW and associated access roads would be needed.
- Meetings with local officials and stakeholders were conducted. Additionally, a virtual open house was held on March 17, 2021 and the Company requested input on the Project by April 19, 2021. The virtual open house provided similar content to that of in-person public open houses. Affected landowners and adjacent landowners were contacted by phone and letter concerning the Project. No opposition to using the existing ROW for the Project has been identified. The public involvement process is further discussed in Section 5.0.

4.1 Fieldale to Sheffield Rebuild Section

Between the Fieldale and Sheffield substations, the Siting Team considered rebuilding on and off centerline (Attachment B, Map 3). Study Segment 1 uses the existing Fieldale – Dan River 138 kV Transmission Line ROW as it exits the Fieldale Substation. An off-centerline option was not possible at this location due to space constraints, such as other transmission line infrastructure entering the Fieldale Substation and concentrated residential development. Study Segment 1 uses the existing 138 kV ROW for about two miles to avoid impacts to residences, NRHP architectural resources, a recreational trail, and the Smith River, and uses an existing crossing location.

South of the Smith River crossing, Study Segment 1 shifts southwest to parallel the existing 138 kV ROW for approximately three miles across large, forested and undeveloped tracts of land. A western parallel crosses more constructible terrain and avoids residences before crossing A.L. Philpott Highway.

The Siting Team reviewed the existing A.L. Philpott Highway and William F. Stone Highway crossing locations. Due to terrain on either side, the existing transmission line spans ridgetops across the highways. The Siting Team determined a western parallel option to cross A.L. Philpott Highway and a slight western offset from the existing centerline to cross William F. Stone Highway is more suitable terrain for constructability. Study Segment 1 returns to the existing centerline for a short span and crosses to the northeastern side of the existing ROW (see Figure 1).



Figure 1. Study Segment 1 at A. L. Philpott Highway and William F. Stone Highway Crossings

Study Segment 1 crosses Cameron Road and deviates from the existing centerline to avoid residential outbuildings and a pond adjacent to the existing ROW (about 0.5 mile). Study Segment 1 parallels the existing ROW to the northeast for approximately 0.8 miles to the Commonwealth Crossing 138 kV Extension (Figure 2). The eastern parallel avoids a residence located on the western side of the existing ROW and crosses predominantly forested and undeveloped lands.

Near the Sheffield Substation, the Company’s recently built Commonwealth Crossing 138 kV Extension taps the Fieldale – Dan River 138 kV Transmission Line. Study Segment 1 includes an approximately 0.3-mile section of the 138 kV transmission line between existing structures 28-38A and 28-41A (located near the Sheffield Substation), which will be reconducted (Figure 2 and Map 3).

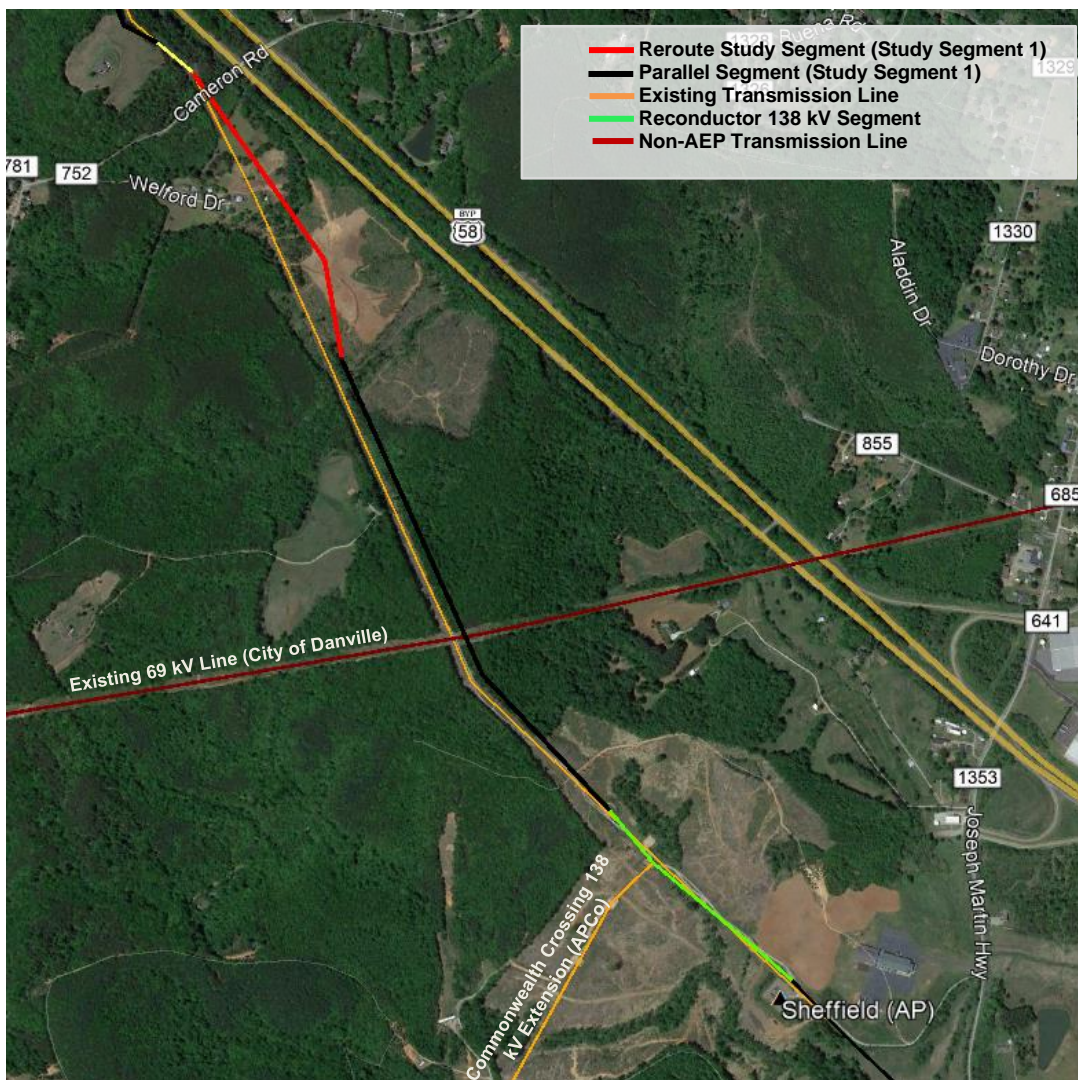


Figure 2. Study Segment 1 near Sheffield Substation

Study Segment 1, including the 0.3-mile portion of the 138 kV line to be recondored, is 6.6 miles long. Approximately two miles of Study Segment 1 is located on centerline and approximately four miles is built parallel to or near the existing ROW, on new ROW. No comments were received regarding Study Segment 1 during the virtual open house (Map 3).

4.2 Sheffield to Ridgeway Rebuild Section

As described in Section 3.0, the Siting Team considered several off-centerline Reroute Segments to minimize impacts to the development that has occurred in and around the existing ROW. Discussions with Company planners, engineers, and outage coordinators determined that an outage on this rebuild section of line was possible and avoids a new 100-foot wide ROW.

Study Segment 2 is on the existing centerline and ROW between Sheffield and Ridgeway substations for 3.7 miles (Map 3). The input received during the virtual open house for Study Segment 2 noted the preferred use of existing ROW; the Project Team received other input related to general project information questions, such as structure type and viewshed around Owsley Drive, Greensboro Road, and Old Sand Road.

4.3 Ridgeway to Structure 28-103 Rebuild Section

Between the Ridgeway Substation and existing structure 28-103 near the VA/NC border, the Siting Team considered paralleling the existing ROW. The land use in this rebuild section consists largely of undeveloped, timbering lands with some scattered residential development at roadways such as Mitchell Road, Morgan Ford Road, and Keeling Drive. At the Ridgeway Substation, Study Segment 3 parallels the existing ROW to the south for approximately four miles to Keeling Drive. A northern parallel was not considered as it results in impacts to several residences on Mitchell Road and Morgan Ford Road.

The Siting Team developed two study segment options at Keeling Drive where a direct parallel on the south side of the existing ROW was not feasible due to a residence and cemetery. One option (Study Segment 4) uses the existing ROW and crosses through a cemetery (see Figure 3). Another option (Study Segment 5) creates a small northern diversion to avoid the cemetery. Study Segment 5 deviates from the existing centerline for approximately 0.5 mile and requires an additional heavy angle to the northeast to avoid the cemetery and residential structures south of the existing ROW (Figure 3). The diversion on Study Segment 5 moves the centerline closer to a residence on Morgan Ford Road, but habitable structures are approximately 165 feet from the centerline and not crossed by the ROW.

No input was received during the virtual open house for Study Segments 4 and 5. In an attempt to gain input in this area, Company ROW representatives tried to individually contact the owner

of the residence near Study Segment 5 but did not receive a response after multiple attempts. Study Segment 4 could span across the cemetery to avoid placing a structure in the cemetery fence but is a constructability challenge and an operations and maintenance risk. To minimize possible impacts to the cemetery during construction and to further minimize outages on the line, Study Segment 4 was dismissed after the virtual open house and Study Segment 5 was carried forward (Map 3).

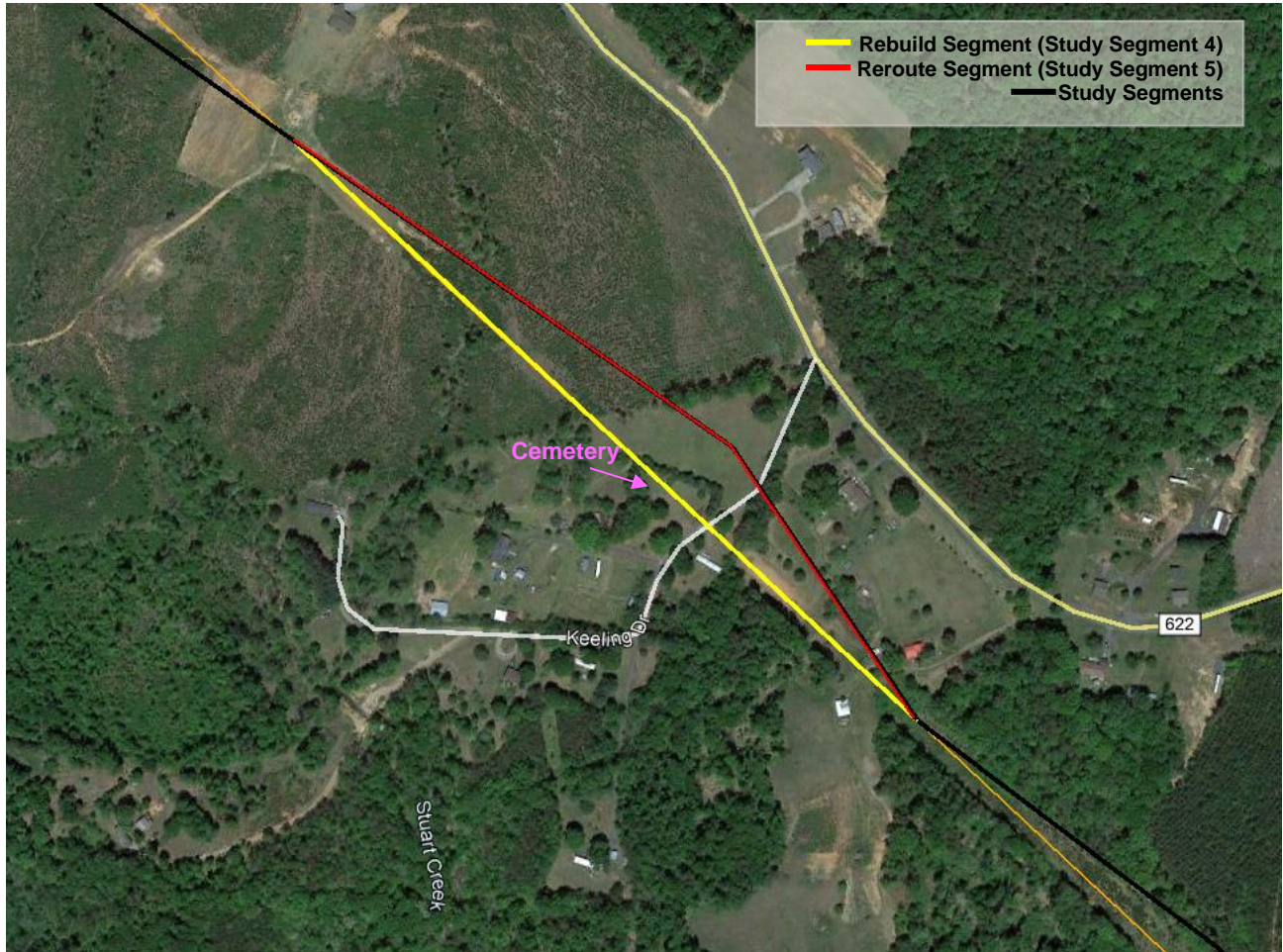


Figure 3. Study Segments 4 and 5

South of Keeling Drive and to the end of the rebuild at structure 28-103, the land use consists largely of timbering tracts of land near the VA/NC border. Study Segment 6 parallels east of the existing ROW to structure 28-103, avoids an existing pipeline corridor, and avoids several

residential structures along Powell Road. A parallel west of the existing centerline was not considered as it would impact several residences and overlap an existing gas pipeline ROW, which currently parallels the 138 kV ROW. Study Segment 6 was presented during the virtual open house and no comments or future plans were noted.

5.0 PUBLIC INVOLVEMENT

An in-person public open house was not advisable during the COVID-19 pandemic given the travel restriction and social distancing recommendations and requirements of the Centers for Disease Control and Prevention and the Executive Orders issued by the Governor of the Commonwealth. In lieu of an in-person public meeting, a virtual open house was created on the Project website (www.AppalachianPower.com/Fieldale-Ridgeway). The Project was publicly announced with a news release and virtual open house on March 17, 2021. The content provided during the virtual open house was made similar to that of in-person public open houses. The virtual open house provided content related to engineering and design of the structures, Project need, ROW, and construction. In addition, the virtual open house allowed landowners and the public to submit comments to the Siting Team and identify properties through an address search tool.

Aerial maps at a scale of one-inch equals 200 feet were provided on the Project website during the virtual open house and were available to download. Features on the maps included existing infrastructure and the 138-kV transmission line to be rebuilt. Participants were encouraged to identify the location of their houses, places of business, properties of concern, or other sensitive resources on the mapping and submit comments to the Siting Team. Comments received through the virtual open house were digitized and entered into a GIS database.

The Project website includes updates and news releases, an interactive map, fact sheet information, and Project timeline. In addition to the comments submitted through the virtual open house, questions and comments were also welcomed on the website through the contact page. A total of 41 comment cards were either returned to the Company or received through the Project website.

Landowners within a 1,000-foot corridor (500 feet on either side of a route centerline) of the transmission line to be rebuilt were notified of the March 2021 virtual open house. Landowner addresses were obtained from Henry County's publicly available parcel database. The notification included the following means:

1. A news release was distributed by the Company on March 17, 2021 to announce the Project and virtual open house. Appalachian Power representatives requested input on the Project by April 19, 2021.

2. Three separate Project mailings were sent to 466 landowner addresses on March 17, March 23, and April 1, 2021. The outreach mailings included a letter, fact sheet, detailed flyer about transmission line routing, and a comment card with a prepaid postage return envelope.
3. Advertisements were circulated in the greater Fieldale and Ridgeway areas to introduce the Project and announce the virtual open house. An advertisement was published in the Martinsville Bulletin on March 23 and March 28, 2021 and another advertisement was published in the Henry County Enterprise on March 20 and March 27, 2021.
4. Two automated telephone notifications from the Company were made on March 24 and March 31, 2021 to notify landowners about the virtual open house. A total of 78 available contacts were attempted for each notification.

The phone calls and comment cards returned to the Company or received through the Project website were entered into the Project public comment database, and generally related to how the rebuild will differ from the existing line, whether it will affect landowner property in the vicinity, and general Project information. The Project will largely be rebuilt within or parallel to the existing ROW, and input from stakeholders and landowners did not indicate major concerns to use or parallel the existing ROW. The Company will continue to coordinate with landowners and stakeholders throughout the duration of the Project.

6.0 REBUILD ROUTES REVIEW

The Siting Team carried forward Study Segment 1 as the Fieldale to Sheffield Rebuild Route between the Fieldale and Sheffield substations (Attachment B, Map 4). The Fieldale to Sheffield Rebuild Route uses the existing ROW for about two miles then parallels or is near the existing ROW for about four miles. South of the highway crossing locations, the Fieldale to Sheffield Rebuild Route deviates about 285 feet east of the existing centerline to avoid impacts to residences and outbuildings near the existing ROW, and then continues to parallel the existing ROW. The Fieldale to Sheffield Rebuild Route includes an approximately 0.3-mile section of the existing 138 kV line, which will be reconducted at the Sheffield 138 kV Loop and Sheffield Substation.

The Siting Team carried forward Study Segment 2 as the Sheffield to Ridgeway Rebuild Route (Attachment B, Map 5). The Sheffield to Ridgeway Rebuild Route uses the existing ROW for the entire four-mile rebuild section to avoid significant impacts resulting from a new ROW in a developed area.

The Siting Team carried forward Study Segments 3, 5, and 6 as the Ridgeway to Structure 28-103 Rebuild Route (Attachment B, Map 6). The Ridgeway to Structure 28-103 Rebuild Route is parallel to the existing ROW for about four miles and deviates about 190 feet east of the existing centerline at Keeling Drive to minimize impacts to residences and a cemetery.

Potential impacts associated with rebuilding in the existing ROW include residential buildings close to the existing ROW, construction impacts such as noise and traffic control, and additional clearing of danger trees. However, abandoning the entire existing ROW for a new greenfield route is neither practical nor necessary for the Project and therefore, alternative routes were not developed. The Siting Team determined that the above Rebuild Routes, which largely parallel or use the existing ROW, are feasible for construction and minimize impacts to the extent possible.

7.0 REBUILD ROUTES COMPARISON

Table 1 and the following route comparison includes the Rebuild Routes for the Project. The estimates provided below are based on the typical 100-foot-wide ROW on the centerline of the Rebuild Routes. The Fieldale to Sheffield, Sheffield to Ridgeway, and Ridgeway Substation to Structure 28-103 Rebuild Routes are not compared against each other but provide a summary along each rebuild section.

Table 1. Project Evaluation Criteria

Criteria	Unit	Fieldale to Sheffield Rebuild Route	Sheffield to Ridgeway Rebuild Route	Ridgeway to Str. 28-103 Rebuild Route
Length	miles	6.6	3.7	4.5
Natural Environment				
Section 10 river crossing	count	1	0	0
Total streams crossed (NHD)	count	9	5	5
Total wetlands in ROW (NWI)	count	0	1	0
High/Exceptional/Special Protection Streams Crossed	count	1	0	0
Approximate tree clearing required in the ROW (digitized based on aerial photography)	acres	43	0	37
Human Environment				
Prime and unique farmland soil ¹ in the ROW (based on SSURGO data)	acres	2	4	0
Farmland of statewide importance ² in the ROW (SSURGO)	acres	5	30	43
Number of parcels ³ crossed by ROW	count	53	96	41
Unique landowners ⁴ within ROW	count	32	59	33
Pasture/rangeland crossed in ROW (SSURGO)	acres	6	10	14
Cropland crossed in ROW (SSURGO)	acres	0	1	0
Barns, outbuildings, shed, garages, and silos ⁵ in the ROW	count	0	4	7

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).

³ The number of parcels crossed refers to the number of individual plots of owned land recorded by Henry County.

⁴ The number of landowners within the ROW represent the number of individual landowners, who each may own one or more parcels, including the Company.

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

Table 1. Project Evaluation Criteria				
Criteria	Unit	Fieldale to Sheffield Rebuild Route	Sheffield to Ridgeway Rebuild Route	Ridgeway to Str. 28-103 Rebuild Route
Residences/single-family dwellings within ROW ⁶	count	0	3	0
Residences/single-family dwellings within 100 feet of centerline	count	2	15	2
Residences/single-family dwellings within 250 feet of centerline	count	7	50	13
Residences/single-family dwellings within 500 feet of centerline	count	30	130	38
Multi-family dwellings within 500 feet of centerline	count	4	0	0
Businesses/commercial buildings within 250 feet of centerline	count	2	0	0
Businesses/commercial buildings within 500 feet of centerline	count	3	5	1
Schools within 1,000 feet of centerline	count	0	1	0
<i>No businesses/commercial buildings or multi-family dwellings are located within the ROW of any Rebuild Route.</i>				
<i>No hospitals or assisted living facilities are within 250 feet of any route centerline</i>				
Cultural Resources				
Designated places of worship within 1,000 feet of centerline	count	1	4	0
Cemetery within the ROW	count	0	0	0
Cemeteries within 250 feet of centerline	count	0	0	1
Table 1. Project Evaluation Criteria				

⁶ Three residences have encroached on the existing ROW. Based on preliminary engineering analysis, the Company expects the Project can be designed and constructed as to avoid the affected buildings in the conductor zone. Subject to final engineering and ROW negotiations with affected landowners, the Company does not expect any residences to be removed to accommodate the rebuilt line.

Criteria	Unit	Fieldale to Sheffield Rebuild Route	Sheffield to Ridgeway Rebuild Route	Ridgeway to Str. 28-103 Rebuild Route
NRHP-listed sites within one mile of the centerline	count	3	2	0
NRHP-eligible sites within one mile of the centerline	count	2	0	0
Historic Districts within one mile of the centerline	count	1	0	0
Local conservation easements crossed by 100-foot ROW	count	1	0	0
<i>No known state conservation easements are crossed by the ROW of any Rebuild Route. No National Landmarks are located within 1.5 mile and no known listed archaeological sites are located within 250 feet of any Rebuild Route centerline.</i>				
Constructability				
U.S. highways crossed	count	2	1	0
State highways crossed	count	1	0	0
Local roads and streets crossed	count	5	11	5
Railroads crossed	count	1	1	0
Oil and gas pipelines crossed	count	0	0	2
Existing 69-kV Transmission Line Crossed	count	1	0	0
Steep slopes crossed by ROW (>20%), percent of total length	percent	12%	2%	6%
Oil and Gas Pipeline Paralleled	miles	0	0	0.7
Existing 138 kV transmission line to be reconducted	miles	0.3	0	0
Total length rebuilt on existing centerline, in existing ROW	miles	2.1	3.7	0
Total length rebuilt parallel to or near the existing ROW	miles	4.2	0	4.5

7.1 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 uses the existing ROW to cross the Smith River, a United States Army Corps of Engineers (USACE) and Virginia Marine Resources Commission-designated navigable waterway. In a letter received from the USACE on May 10, 2021, the potential result of discharges of dredged and/or fill material into waters of the United States (WOTUS) may require additional permitting and coordination related to Section 404 of the Clean Water Act (CWA). As such, permitting under Section 10 of the Rivers and Harbors Act of 1899 will be required for the river crossing. The three Rebuild Routes, for all three sections of the Project, cross 19 National Hydrography Dataset (NHD) features at or near existing crossings and one National Wetland Inventory (NWI) feature at the existing location. The Project does not cross any designated state scenic rivers; however, the Project crosses a section of the Smith River that is designated as a potential qualified scenic river approximately one mile south of the existing Fieldale Substation. The Rebuild Routes will largely be built in existing ROW or parallel to the existing ROW and will have minimal impacts on water resources. No comments or concerns were noted by the Virginia Department of Health (VDH) in their letter received on April 23, 2021.

In a letter received on April 23, 2021, the Virginia Department of Conservation and Recreation (VDCR) provided input and made recommendations about the Project, particularly in the area surrounding the Smith River crossing. The Project is located in the Smith River – Jordan Creek Stream Conservation Unit (SCU), which has been given a biodiversity significance ranking of B2 and represents a site of very high significance due to potential endangered habitat for the Roanoke logperch and the Virginia Department of Wildlife Resources (VDWR) designation of a “Threatened and Endangered Species Water” for the Smith River. Near the Smith River, the Smith River Rt. 682 Slopes Conservation Site is crossed and is a natural heritage resource designated by the VDCR with a “general significance” of biodiversity. In addition, multiple highly categorized ecological core areas with significant integrity (C3, C4, and C5), as determined by the VDCR, were identified within the Project Study Area and around the Smith River crossing. The Project will be rebuilt in the existing ROW in the areas noted by the VDCR, including the Smith River crossing, in order to minimize various natural environment impacts including tree clearing to sensitive ecological areas and heavily forested areas.

The Project crosses rolling terrain with grasslands, forested areas, and open fields that could be habitat for various species. No response was received from the VDWR regarding the Project. The Siting Team used an United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) project planning tool to determine one threatened mammal species, the northern long-eared bat (*Myotis septentrionalis*), and one endangered fish species, Roanoke logperch (*Percina rex*), could potentially occur in 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 more than 40 miles north of the Project area. No critical habitat areas were identified in the USFWS and VDWR databases.

The Virginia Outdoors Foundation (VOF) noted three open-space conservation easements in proximity to the Project area in their letter received on April 15, 2021. The VOF easements are located more than 1.5 miles from the existing transmission line and will not be crossed by any Rebuild Route. The Virginia Department of Forestry (VDFO) did not indicate concerns for the Project in a letter dated April 30, 2021 due to the use of existing ROW and recommended mitigation measures for tree clearing. No VDFO easements were identified in the Project area.

Overall, the Project will minimize tree clearing and potential loss of ecological areas and habitats by using the existing ROW when feasible and rebuilding adjacent to the existing ROW. The responses received from the VOF, VDH, VDCR, VDFO, and USACE are included in Attachment F. Coordination and review with the VDWR, Virginia Department of Environmental Quality (VDEQ), USACE, and other federal and state organizations will be conducted during the Project's environmental studies.

7.2 Human Environment

The human environment includes use 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 ROW, minimizes conflicts with 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 for the Project, areas outside the existing centerline must be reviewed to minimize construction outages and thus the Rebuild Routes consider paralleling the existing ROW to minimize human environment impacts.

Members of the Siting Team met with and updated Henry County staff throughout the Project; no concerns for future land use conflicts were noted. The County's comprehensive planning document encourages development, including transmission and utility developments. The transmission line has operated since the 1940s and predates much of the development and

planned growth areas, including the Fieldale and Ridgeway communities. According to Henry County, no planned developments were identified or impacted by the Project.

The Siting Team contacted the Virginia Department of Transportation (VDOT) and reviewed the Martinsville Southern Connector Study, which evaluated a corridor for improving U.S. Route 220 from the North Carolina state line to the William F. Stone Highway (U.S. Route 58/220 Bypass). The preferred alternative presented by VDOT crosses the Project near the Sheffield Substation; however, discussions with VDOT staff determined the final road alignment will not impact the Sheffield Substation and their project is pending funding. Given the discussions with VDOT, the Siting Team determined rebuilding in or near the existing ROW south of Route 58 and near Sheffield Substation minimizes potential future relocation needs. Additionally, the Siting Team obtained input from the VDOT Martinsville and Salem residencies on April 7 and 12, respectively, and noted their designated road crossings and recommended traffic plans for construction. The Company will continue to coordinate with VDOT throughout the Project to minimize impacts.

The Rebuild Routes largely consider using the existing ROW or paralleling the ROW. For the entire Project, no viable alternative routes were identified, as they would add significant impacts to the human environment, such as potential conflicts with existing and proposed land uses, residential buildings, or require a new ROW across recreational areas. Members of the Siting Team attempted to contact landowners along the ROW parallel areas through several outreach efforts. Input during the open house did not indicate concerns for off-centerline areas and no future development plans were identified. Three residences have encroached on the existing 100-foot-wide transmission line ROW between the Sheffield and Ridgeway substations. Based on preliminary engineering analysis, the Company expects the Project can be designed and constructed as to avoid the affected buildings in the conductor zone. Accordingly, and subject to completion of final engineering and ROW negotiations with affected landowners, the Company does not expect that any residences located within the ROW will need to be removed to accommodate the rebuilt line. The Company will continue to coordinate with landowners where new ROW is proposed or easements need to be supplemented.

Agricultural and forestry resources are abundant in the Project area given the largely agriculturally-zoned and timbering properties based on available county data. Additional tree clearing will be required in areas where paralleling the existing ROW is considered, which is generally on timbering properties to minimize impacts to residential communities and known sensitive ecological resources. No concerns were noted by the VDOF regarding timbering resources in their letter dated April 30, 2021. Input was received from the United States Department of Agriculture's National Resources Conservation Service (NRCS) on March 30, 2021.

noting the Farmland Protection Policy Act form 1006 or 106 was not required, as the Project will be located in or adjacent to existing ROW. The Rebuild Routes cross a total of approximately 84 acres of farmland of statewide importance or prime and unique farmland soil, but at or near the existing ROW. Based on NRCS data, approximately 30 acres of pasture/rangeland or cropland is crossed by the Rebuild Routes, and at or near the existing ROW. The Rebuild Routes cross agricultural areas in or near existing ROW locations and avoid significant diversions on properties; therefore, it is not expected that the Project will permanently impact farmland.

The responses received from VDOT and NRCS are included in Attachment F. Coordination and review with the VDWR, VDEQ, USACE, and other federal and state organizations will be conducted during the Project's environmental studies.

7.3 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 Virginia Department of Historic Resources' (VDHR) Virginia Cultural Resource Information System (VCRIS) database. In a letter received on April 26, 2021, the VDHR noted 233 recorded historic architectural resources within 1.5 miles of the existing transmission line and 23 previously recorded archaeological sites within 1.5 miles of the Project. Between the Fieldale and Ridgeway substations, there are five NRHP-listed sites within one mile of the Rebuild Routes: Fieldale Historic District (VDHR# 044-5173), Virginia Home (VDHR# 044-5010), Fieldcrest Lodge (VDHR# 044-5166), Belleview (VDHR# 044-0002), and Ingleside Place (VDHR# 044-0013). Between the Fieldale and Sheffield substations, there are two NRHP-eligible resources within 0.5 mile of the Rebuild Routes: Fieldale Elementary School (VDHR# 044-5168), and Copeland House (VDHR# 044-5179). There is one potentially NRHP-eligible resource located within 0.5 mile of the Rebuild Route between the Ridgeway Substation and existing structure 28-103, the Odell Farm (VDHR# 044-5490). There are no National Historic Landmarks located within 1.5 miles of the Project and no previously recorded archaeological sites are located within the proposed ROW. Between the Ridgeway Substation and structure 28-103, there is one cemetery located in the existing transmission line ROW which is avoided by the ROW of the Rebuild Route in which the centerline was shifted east.

In September and October 2021, POWER conducted background research in a VDHR Pre-Application Analysis with the goal of identifying all previously recorded historic resources according to VDHR's guidance in the Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (2008), or "Guidelines". 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 as a result of the Project. The existing transmission line structures average approximately 58 feet in height and the proposed transmission line structures average approximately 67 feet in height (excluding the lattice tower structures). Given the Project will largely be rebuilt within or near the existing ROW and proposed structures will be approximately 10 feet taller than the existing structures, it is anticipated the Project will have no more than a minimal impact on historic properties, as discussed in the Pre-Application Analysis. The responses received from VDHR are included in Attachment F.

7.4 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 communities and fenceline 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 EPA EJSCREEN (2020) tool, developed by the Environmental Protection Agency (EPA), and data from the American Community Survey (ACS) from the United States Census Bureau.

The EPA 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 ACS data, there are 15 CBGs located in Virginia within one mile of the Project. The results of the dataset are provided in Table 2. The CBGs identified within one mile of the Project in Virginia are depicted in Attachment G.

All of the CBGs located within one mile of the Project (excluding one CBG in the second rebuild section) meet the threshold of at least one "EJ community" as defined by the Act, namely communities of color and low-income communities, and exceed the state average. Of these 15 CBGs, three CBGs also include communities of color and are crossed by the Fieldale to Sheffield Rebuild Route. Overall, the Project will largely be rebuilt within or parallel to the existing 100-foot-wide ROW. The Project is not anticipated to have a disproportionately high or adverse impact on Environmental Justice Communities as defined in the Act. Relocating the Project from its current general location would result in additional ROW impacts by crossing other similar EJ Communities, and was not considered a feasible alternative for the Project (Attachment G).

As discussed in Section 5.0, the Company engaged and provided notification to landowners within a 1,000-foot corridor (500 feet on either side of the route centerlines) using multiple methods of contact and news releases for a virtual open house in March 2021. Input received during the virtual open house noted the use of existing ROW and general project information

questions. The Company's ROW agents attempted to reach landowners where rebuilding parallel to the existing centerline or deviations were proposed, includes areas that meet the threshold of at least one "EJ community". The Company will continue to engage all affected landowners, including Environmental Justice Communities as defined in the Act throughout the duration of the Project.

Table 2. EJ SCREEN Data Table								
CBG within one 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		8,631,393	38	25	3	11	5	23
510890107001	Yes	1,212	42%	50%	2%	21%	8%	23%
510890107002	Yes	699	46%	37%	0%	18%	0%	22%
510890108002	Yes	881	46%	66%	0%	25%	2%	26%
510890101001	Yes	2,084	25%	42%	6%	18%	2%	19%
510890101003	Yes	367	43%	28%	0%	0%	0%	20%
510890105002	Yes	1,228	10%	58%	0%	17%	3%	19%
510890106012	Yes	1,567	25%	25%	0%	10%	5%	23%
510890106022	Yes	1,942	23%	39%	2%	22%	3%	19%
510890101002	No	1,011	31%	74%	5%	35%	10%	20%
510890105003	No	1,071	55%	43%	0%	20%	3%	24%
510890106011	No	1,048	25%	55%	0%	27%	5%	22%
510890106021	No	849	49%	53%	2%	21%	1%	25%
510890106023	No	1,191	23%	35%	3%	25%	6%	23%
510890108001	No	812	49%	67%	0%	11%	13%	15%
510890108003	No	871	74%	54%	0%	18%	6%	38%

¹ Per 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 the comparative analysis.

² Virginia 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 EJSCEEN, which exceed the state average, but not defined in Virginia Environmental Justice Act.

7.5 Constructability

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

Given the constraints and outage limitations for the Project, rebuilding the entire Company-owned portion of the 15-mile Fieldale – Dan River 138 kV Transmission Line within the existing ROW is not feasible. The Rebuild Route largely parallels or uses the existing ROW, which minimizes construction risks as crews can largely use existing access roads and minimize disturbance to areas and tree clearing activities. As with paralleling existing infrastructure, crossing over transmission lines, distribution lines, and pipelines may require specialized construction techniques and scheduled outages.

Between the Fieldale and Sheffield substations, the multiple linear corridors such as railroads, roadways, and transmission lines are crossed by the existing ROW. The Fieldale to Sheffield Rebuild Route crosses a state highway, Appalachian Drive, exiting the Fieldale Substation at its existing location. At the Smith River crossing, the Rebuild Route crosses Appalachian Drive a second time and a Norfolk Southern Railroad corridor at its existing crossing location to minimize impacts and permitting requirements. At the A.L. Philpot Highway, William F. Stone Highway, and Greensboro Road crossings, the Rebuild Route crosses the highways at or near the existing locations to take advantage of constructible terrain and minimize the risk of slides. South of the William F. Stone Highway crossing, an additional heavy angle is required for the approximate 285-foot deviation from the existing centerline to avoid buildings in the ROW off Welford Drive, near Cameron Road. In order to minimize the amount of on-centerline construction, the Rebuild Route crosses an existing City of Danville 69 kV transmission line in a feasible location east of the existing crossing. Appalachian will continue to coordinate with the City of Danville during the Project.

The 3.7-mile section between the Sheffield and Ridgeway substations will require an outage to use the existing centerline in order to avoid development in and around the existing ROW. The Rebuild Route uses the existing ROW to minimize overall impacts to areas not already impacted or crossed by the existing ROW. It was confirmed by the Company's planners, this section can be rebuilt in the existing ROW during the spring and fall outage windows.

Between the Ridgeway Substation and existing structure 28-103, the majority of the Rebuild Route is parallel to the existing ROW through undeveloped areas and largely timbering land uses. At Keeling Drive, an additional heavy angle is required to avoid a cemetery. Two pipelines are located in the southeastern extents of the Rebuild Route. The Plantation Pipeline Company crossing occurs south of the existing location, additional protection measures may be needed during construction if heavy machinery will need to cross the pipeline. The existing transmission line is immediately adjacent next to an East Tennessee Natural Gas Company pipeline near existing structure 28-103 for less than one mile. The Rebuild Route parallels the north side of the existing ROW and further increases the distance from the pipeline ROW, thus minimizing potential future impacts or additional protection studies. Additional coordination with the pipeline companies will occur throughout the Project to determine constructability requirements and mitigation, as applicable.

A letter received from the Virginia Department of Aviation on April 22, 2021 indicated that no portion of the Project is located within 20,000 linear feet of a public use airport. No response letter was received from the Federal Aviation Administration; however, no airports are located within one mile of the Project centerline. 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.

7.6 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 average approximately 58 feet in height and the proposed transmission line structures average 67 feet in height (excluding the lattice towers). The existing Fieldale – Dan River 138 kV Transmission Line crosses a mix of rural and forestry land uses and developed areas (Attachment C – Study Area Photographs). No scenic byways are crossed by the Project, but the Fieldale to Sheffield Rebuild Route crosses U.S. and state highways including A.L. Philpott Highway, William F. Stone Highway, and Greensboro Road, which have contributed to populous areas around Fieldale and Ridgeway. At A.L. Philpott Highway and William F. Stone Highway, the Rebuild Route maximizes more constructible terrain for structure placement but visual impacts are minimized due to the line spanning high and above the highway and near the existing crossing.

The majority of the Rebuild Routes parallel existing ROW across large, undeveloped and forested tracts of land (Attachment B, Maps 4 and 6) or use existing ROW in areas constrained by residential development (Map 5). Replacing infrastructure where it already exists avoids new

visual impacts to the surrounding community and landscape. In areas where residences are in close proximity to the ROW, the Company intends to use monopole structures to reduce the structure footprint and maximize the distance between the transmission line conductors and existing residences. In addition, sections of the Rebuild Route that parallel the existing ROW or deviate from the existing centerline are largely located in forested areas or timbering lands where a vegetative cover can minimize visual impacts.

The Rebuild Route between the Fieldale and Sheffield substations crosses the Smith River and Henry County's Fieldale Trail and River Access easement area (Attachment C, Photos 1 – 3). At the Smith River crossing, the Rebuild Route proposes to use two modern lattice tower structures that are 119 feet tall, which will replace the existing lattice towers (Attachment C, Photo 3). As such, additional visual impacts to the river and recreational trail are not expected as the line will span high above the resources and have a similar character as the existing facilities (Figure 4).



Figure 4. Comparable Existing and Proposed Lattice Tower Structure at the Fieldale Trail and Smith River Access Easement

Existing and Proposed Steel Lattice Tower Structures

The Sheffield to Ridgeway Rebuild Route uses existing ROW and crosses rolling terrain and multiple land use types including agricultural, commercial, and residential development around the Greensboro Road corridor (Attachment C, Photos 5 and 6). The ROW predates the majority of development in this part of the Project. Proposed structure heights will increase marginally by approximately 10 feet to meet current standards. Given the use of the existing centerline and minimal height increases significant additional visual impacts are not anticipated as the overall character will not change within the existing ROW (Figure 5).



Figure 5. Comparable Existing and Proposed Transmission Structure (Sheffield to Ridgeway Rebuild Route)

Existing Wood H-frame (top) and Proposed Steel Monopole (bottom)

From the Ridgeway Substation to existing structure 28-103, forested and timbering lands are predominant (Attachment C, Photos 7 and 8). The Rebuild Route requires a deviation from the existing centerline to avoid a cemetery and requires a new ROW on landowners crossed by the existing infrastructure. Future plans of development were not identified and rebuilding parallel to the ROW minimizes new, significant impacts to communities. Overall, the Project uses or parallels the existing ROW for a majority of the length and visual impacts are minimized.

8.0 PROPOSED ROUTE

The Proposed Route includes the three Rebuild Routes, which use existing ROW or parallel the existing ROW for the majority of the rebuilt line, and minimizes outage durations and overall impacts to the human and natural environment.

The Proposed Route for the Project is approximately 15 miles long and is largely within or parallel to the existing transmission line ROW. The Proposed Route begins at the Company's existing Fieldale Substation (4645 Appalachian Drive) located in the central extents of Henry County and on the east side of the Smith River. The Proposed Route exits the Fieldale Substation within the existing right-of-way (ROW) for about two miles and crosses State Route 57 (Appalachian Drive), Daniels Creek Road, Longview Drive, S. River Road and the Smith River. South of the Smith River crossing, the Proposed Route shifts to parallel the existing ROW to the west for 1.8 miles and then crosses Lookout Mountain Road. Continuing parallel for one mile, the Proposed Route crosses U.S. Routes 58 (A. L. Philpott Highway) and 58 and 220 Bypass (William F. Stone Highway). After the highway crossings, the Proposed Route crosses Cameron Road and the existing centerline to continue near or parallel to the existing ROW.

The Proposed Route continues on the east side of the existing ROW for 1.3 miles to existing structure 28-38A. At this point, approximately 0.3 mile of the existing line will be reconducted on three existing structures near the Sheffield Substation (1986 Joseph Martin Highway). Past the Sheffield Substation, the Proposed Route is located within the existing ROW for approximately four miles and continues southeast crossing several residential roads including, Joseph Martin Highway, New Light Church Road, Owsley Drive, Ken Lane and Steve Drive. After Steve Drive, the Proposed Route continues in the existing ROW across U.S. Route 220 (Greensboro Road), Mica Road, Phospho Springs Road and Old Mill Road before entering the Ridgeway Substation (2689 Old Mill Road). After the Ridgeway Substation, the Proposed Route parallels the southwest side of the existing ROW for about two miles crossing Mitchell Road, Flanagan Branch Road, and Morgan Ford Road, before crossing to the northeast side of the existing ROW at Keeling Drive. The Proposed Route continues southeast paralleling the existing ROW for 1.1 miles crossing Powell Road and continues for 0.6 mile to an existing transmission

line structure near the Virginia/North Carolina border, and southeastern extents of the Company's service territory.

The Proposed Route includes two minor deviations from the existing centerline to avoid constraints immediately adjacent to and within the existing ROW. Between the Fieldale and Sheffield substations, the first deviation occurs at proposed structure 28-34A where the centerline of the Fieldale – Dan River 138 kV transmission line will be shifted approximately 285 feet to the east in order to avoid residential buildings in the existing ROW. After the Ridgeway Substation, the second deviation occurs at proposed structure 28-88A where the centerline of the Fieldale – Dan River 138 kV transmission line will be shifted approximately 190 feet east to avoid a cemetery in the existing ROW.

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 H-frame and monopole structures with a low-reflective finish for the Project. The anticipated heights of the proposed structures (excluding the lattice structures) on the Project range between 55 and 85 feet, with an average proposed structure height of 67 feet, excluding the proposed lattice tower structures. There are two lattice structures proposed for the Project and they will be 119 feet tall. The proposed structures for the rebuilt line will be approximately 10 feet taller to meet current engineering requirements but will be constructed near their existing locations in ROW or close to the existing ROW.

Three residences have encroached on the existing 100-foot-wide transmission line ROW between the Sheffield and Ridgeway substations. Based on preliminary engineering analysis, the Company expects the Project can be designed and constructed as to avoid the affected buildings in the conductor zone.. Accordingly, and subject to completion of final engineering and ROW negotiations with affected landowners, the Company does not expect that any residences located within the ROW will need to be removed to accommodate the rebuilt line.

The Proposed Route minimizes impact to human and natural environments, including agricultural and forestry landscapes. Approximately six miles of the Proposed Route will be built on existing ROW due to residential and commercial constraints limiting the ability to build in the clear and on new ROW. The Proposed Route primarily crosses landowners with existing easements, though supplemental easements may be required where the route will be parallel to or near the existing ROW. The Proposed Route crosses 190 parcels and 124 unique landowners within the ROW. The two deviations from the existing centerline near Cameron Road and Keeling Drive do not require ROW from new landowners not already crossed by the current 138 kV ROW. In addition, the

Company and Siting Team believe that the Proposed Route will not 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).

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 7).

Attachment A: Outreach Fact Sheet

FIELDALE-RIDGEWAY

TRANSMISSION LINE REBUILD PROJECT



Appalachian Power representatives plan to increase electric reliability in Henry County by updating the local electric transmission system. The Fieldale - Ridgeway Transmission Line Rebuild Project involves upgrading approximately 15 miles of transmission line. Company representatives expect to file an application with the Virginia State Corporation Commission in fall 2021, with approval expected within one year. If approved, construction begins in fall 2023 and concludes in summer 2025.



WHAT

This project involves rebuilding approximately 15 miles of 138-kilovolt transmission line in or near existing right-of-way.

WHY

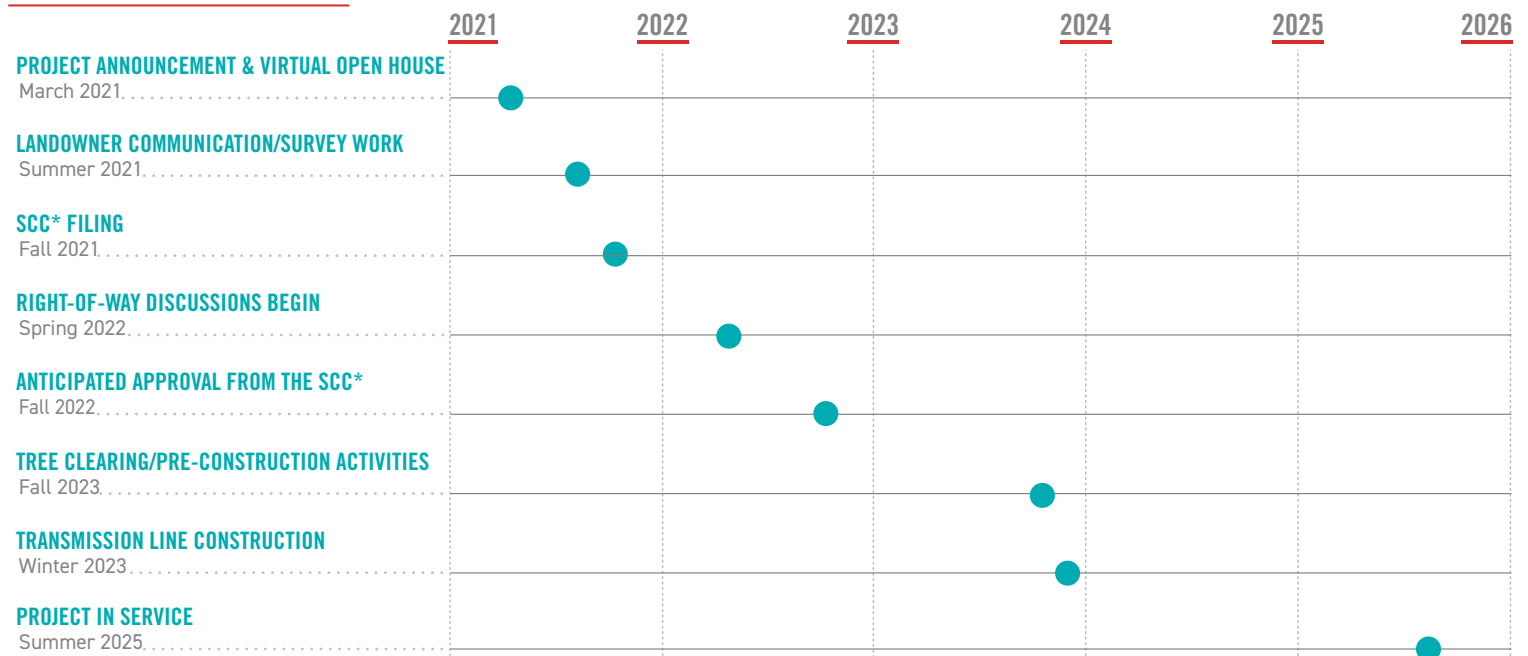
- The improvements:
- Upgrade equipment that caused multiple service interruptions in the last few years for customers served by Appalachian Power's Sheffield and Ridgeway substations.
 - Replace deteriorating 1940s wooden poles with steel poles.
 - Increase electric reliability in the area.

WHERE

The existing transmission line begins at the Fieldale Substation along Appalachian Drive and exits the substation to the east. The line continues south, crosses Route 220 at two separate points and travels through Sheffield Substation off Joseph Martin Highway. The upgrades travel through Ridgeway Substation on Old Mill Road and conclude at a pole near the Virginia-North Carolina border.



PROJECT SCHEDULE



*SCC: Virginia State Corporation Commission.

**Timeline subject to change.

TYPICAL STRUCTURES

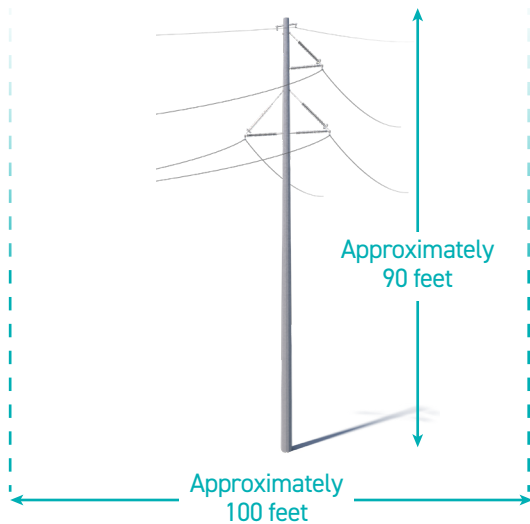
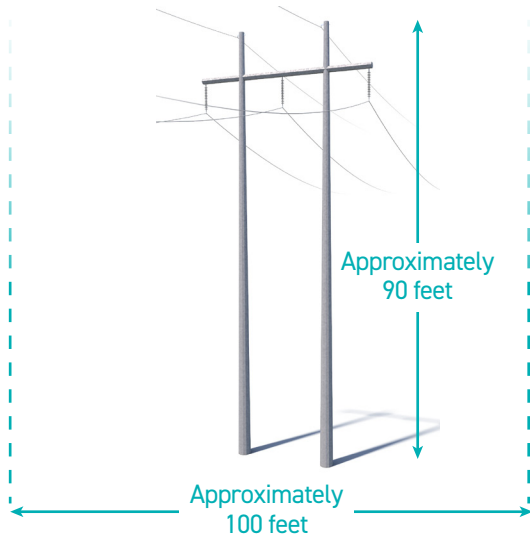
Crews plan to rebuild the power line using primarily steel H-frame poles and single poles depending on the location.

Structure Height: **Approximately 90 feet***

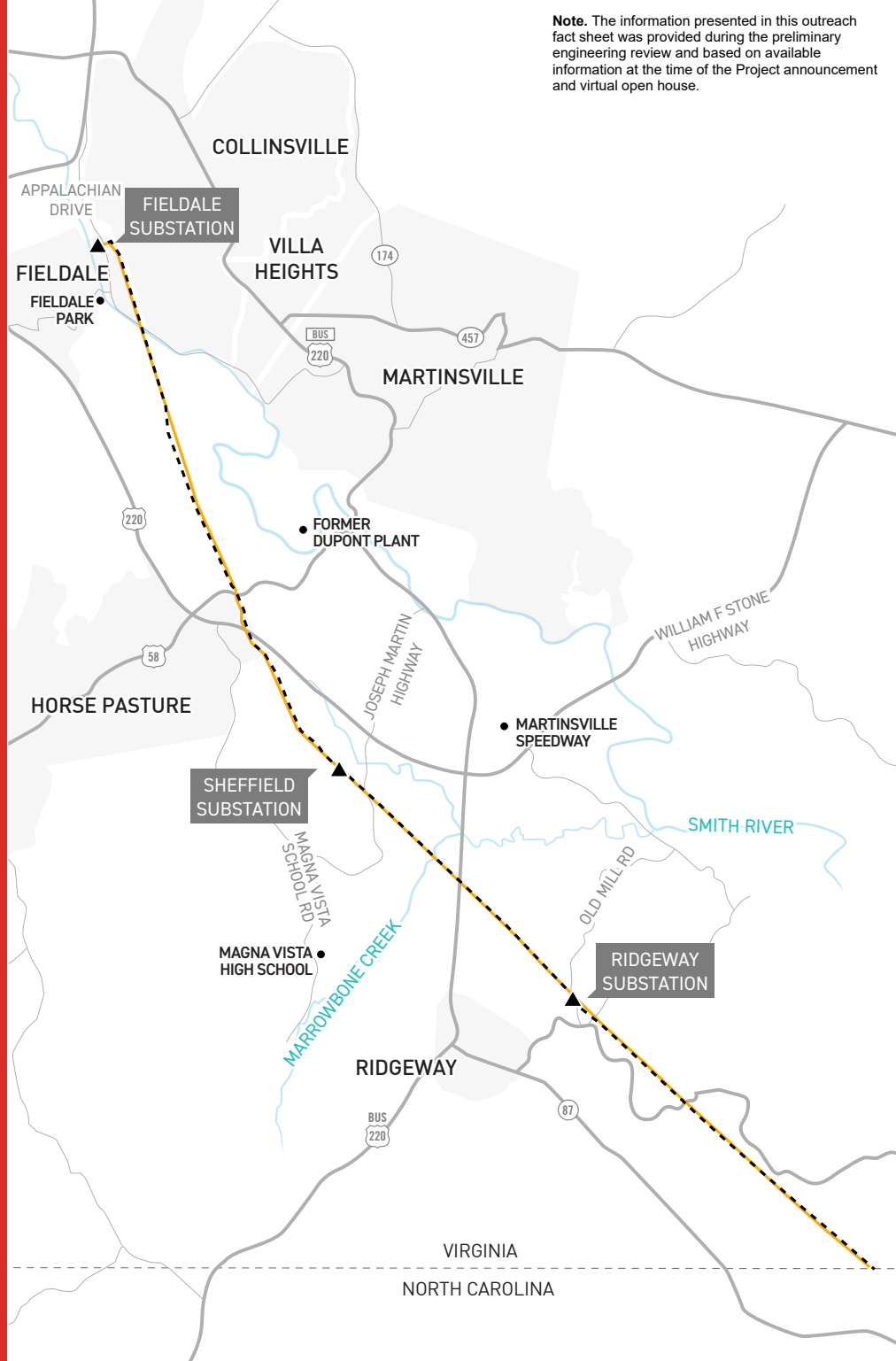
Right-of-Way Width: **Approximately 100 feet***

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

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



Note. The information presented in this outreach fact sheet was provided during the preliminary engineering review and based on available information at the time of the Project announcement and virtual open house.



FIELDALE-RIDGEWAY TRANSMISSION LINE REBUILD PROJECT

- EXISTING TRANSMISSION LINE TO BE REBUILT (IN OR NEAR EXISTING RIGHT-OF-WAY)
- SUBSTATION

*VISIT APPALACHIANPOWER.COM/FIELDALE-RIDGEWAY TO VIEW AN INTERACTIVE MAP



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

CORTNEY MUSTARD

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833-313-3743

Apco_Outreach@aep.com

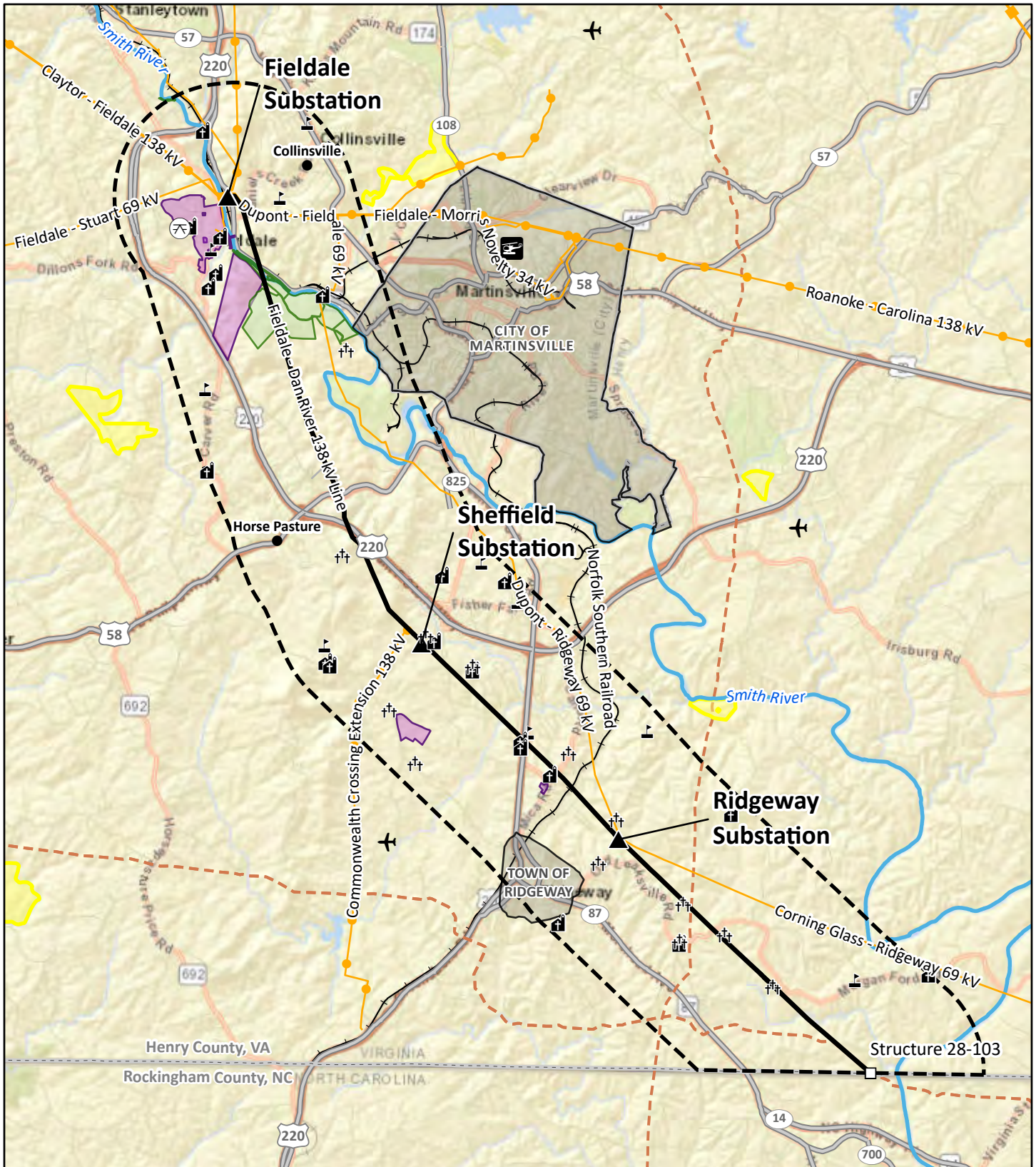
AppalachianPower.com/Fieldale-Ridgeway



An AEP Company

BOUNDLESS ENERGY™

Attachment B: Route Development Maps



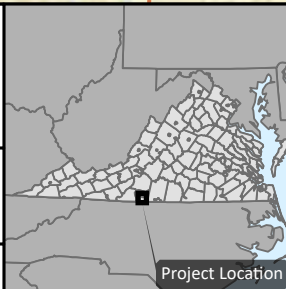
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|--|---|
| <ul style="list-style-type: none"> Study Area Existing AEP Substation Existing AEP Structure Existing Transmission Line to be Rebuilt Existing AEP Transmission Line (69 kV or lower) Existing AEP Transmission Line (115-230 kV) Existing AEP Transmission Line (345 kV +) Populated Place Fieldale Park School | <ul style="list-style-type: none"> Place of Worship Cemetery Airport Helipad Highway Railroad Pipeline Smith River (Section 10) VOF-Easement Fieldale Trail and River Access NRHP Resource (Eligible and Listed) Town/City Limits County/State Boundary |
|--|---|

**Henry County,
Virginia**

Author: jhumiston
Project: 159105

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

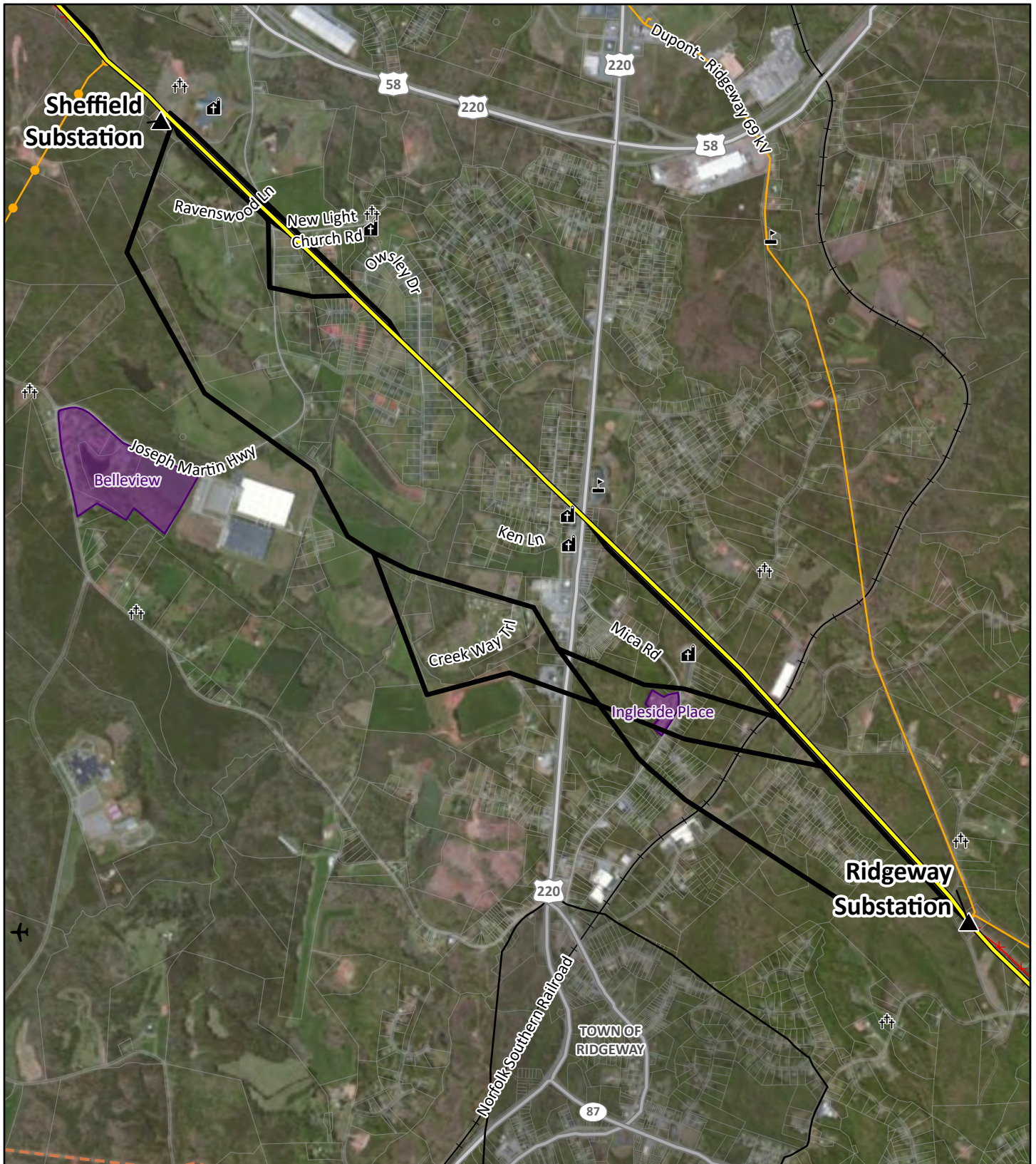
October 12, 2021



**Map 1:
Study Area**

**Fieldale to Ridgeway 138 kV
Rebuild Project**

0 1.5 3
Miles



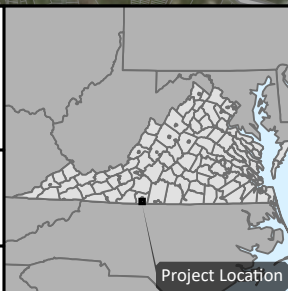
- ▲ Existing AEP Substation
- Rebuild Segment
- Reroute Segments
- Existing Transmission Line to be Retired
- Existing AEP Transmission Line (69 kV or lower)
- Existing AEP Transmission Line (115-230 kV)
- ⚡ School
- ⛪ Place of Worship
- ⚡ Cemetery
- ✈ Airport
- Highway
- Railroad
- Pipeline
- NRHP Resource (Eligible and Listed)
- ▭ Town/City Limits
- ▭ County/State Boundary

Henry County,
Virginia

Author: jhumiston
Project: 159105

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

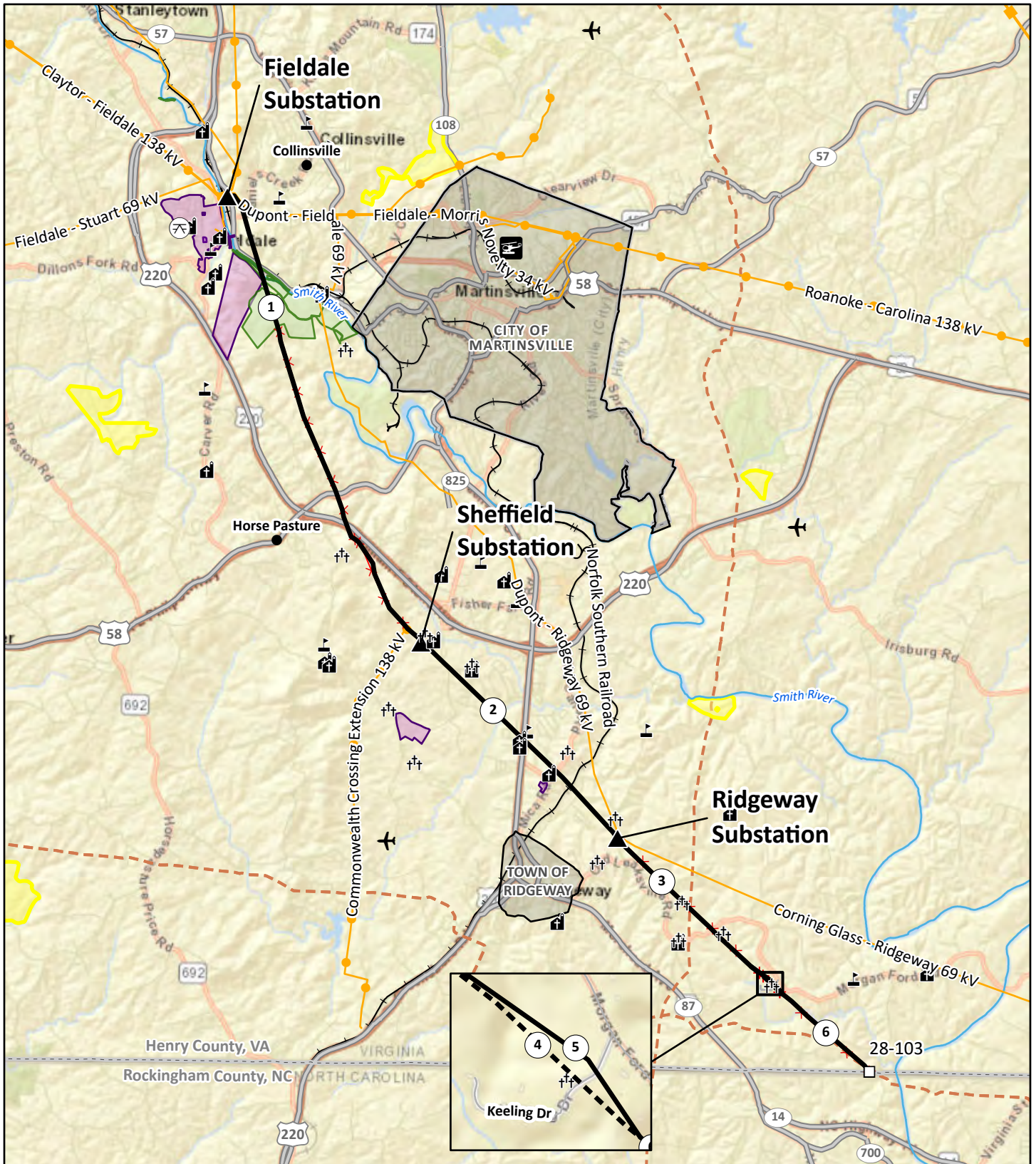
November 04, 2021



Map 2:
Farmingdale Focus Area
Reroute Segments
(Sheffield to Ridgeway)

Fieldale to Ridgeway 138 kV
Rebuild Project

0 2,000 4,000
Feet



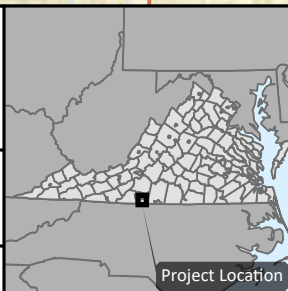
- | | |
|---|---------------------------------------|
| ▲ Existing AEP Substation | ▲ Place of Worship |
| □ Existing AEP Structure | ⚓ School |
| — Study Segments | ✈ Airport |
| — Study Segment (Dismissed) | Ⓜ Helipad |
| — Existing Transmission Line to be Retired | ⚡ Highway |
| — Existing AEP Transmission Line (69 kV or lower) | ⚡ Road |
| — Existing AEP Transmission Line (115-230 kV) | ⚡ Railroad |
| — Existing AEP Transmission Line (345 kV +) | — Pipeline |
| — Existing AEP Transmission Line (Retired) | — Smith River |
| ● Populated Place (345 kV +) | — VOF-Easement |
| ● Fieldale Park | — Fieldale Trail and River Access |
| ⊕ Cemetery | — NRHP Resource (Eligible and Listed) |
| | — Town/City Limits |
| | — County/State Boundary |

Henry County, Virginia

Author: jhumiston
Project: 159105

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

November 04, 2021

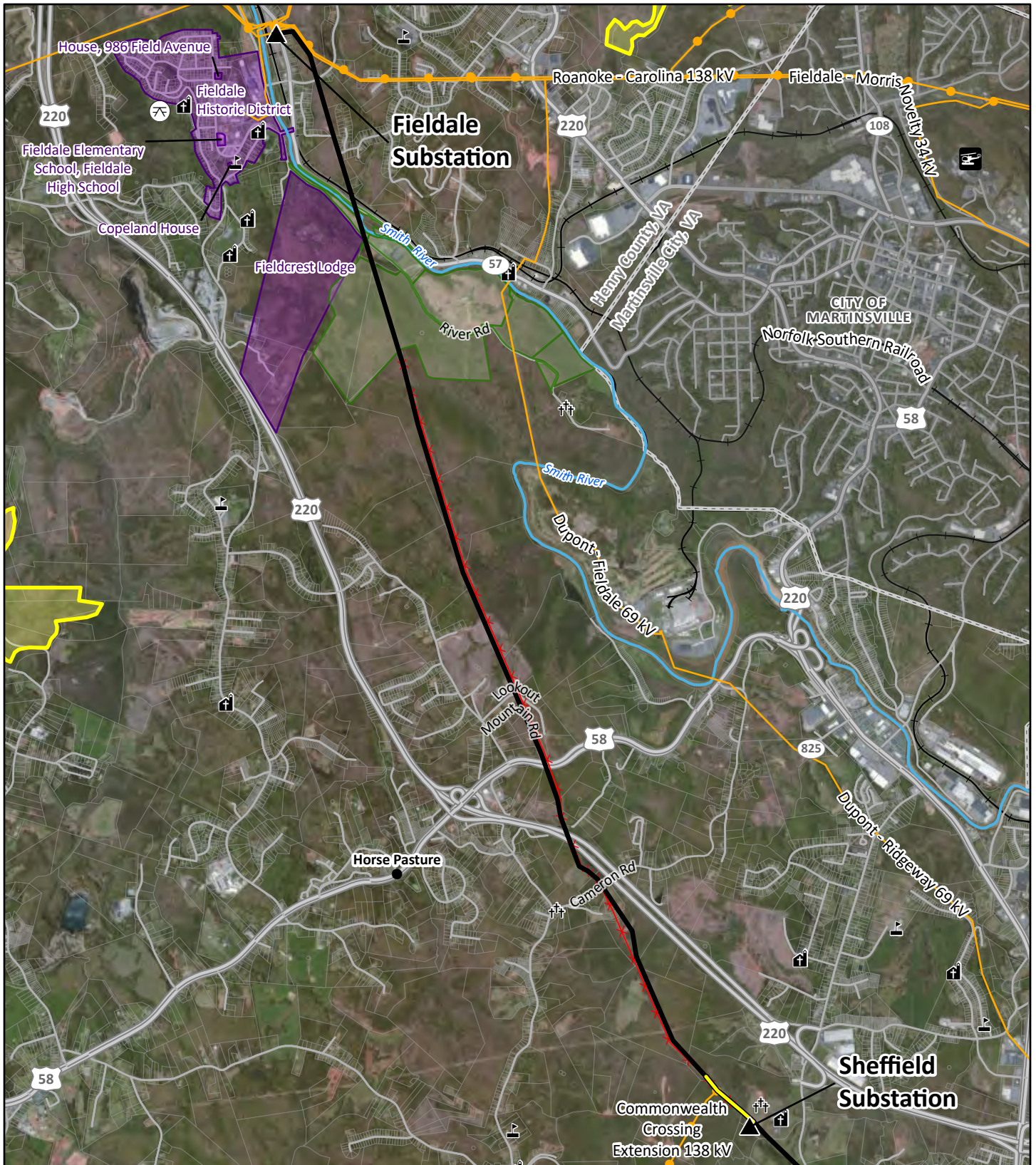


**Map 3:
Study Segments**

**Fieldale to Ridgeway 138 kV
Rebuild Project**

APPALACHIAN POWER

0 1.5 3
Miles



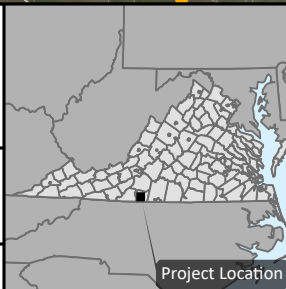
- ▲ Existing AEP Substation
- 138 kV Rebuild Route
- 138 kV to be Reconstructed
- ✗ Existing Transmission Line to be Retired
- Existing AEP Transmission Line (69 kV or lower)
- Existing AEP Transmission Line (115-230 kV)
- Populated Place
- ⊙ Fieldale Park
- ⊕ Cemetery
- ⊖ Place of Worship
- ⚡ School
- ⊠ Helipad
- Highway
- Highway
- Road
- Railroad
- Smith River
- VOF-Easement
- Fieldale Trail and River Access
- NRHP Resource (Eligible and Listed)
- Town/City Limits
- County/State Boundary
- Parcel Boundary

Henry County,
Virginia

Author: jhumiston
Project: 159105

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

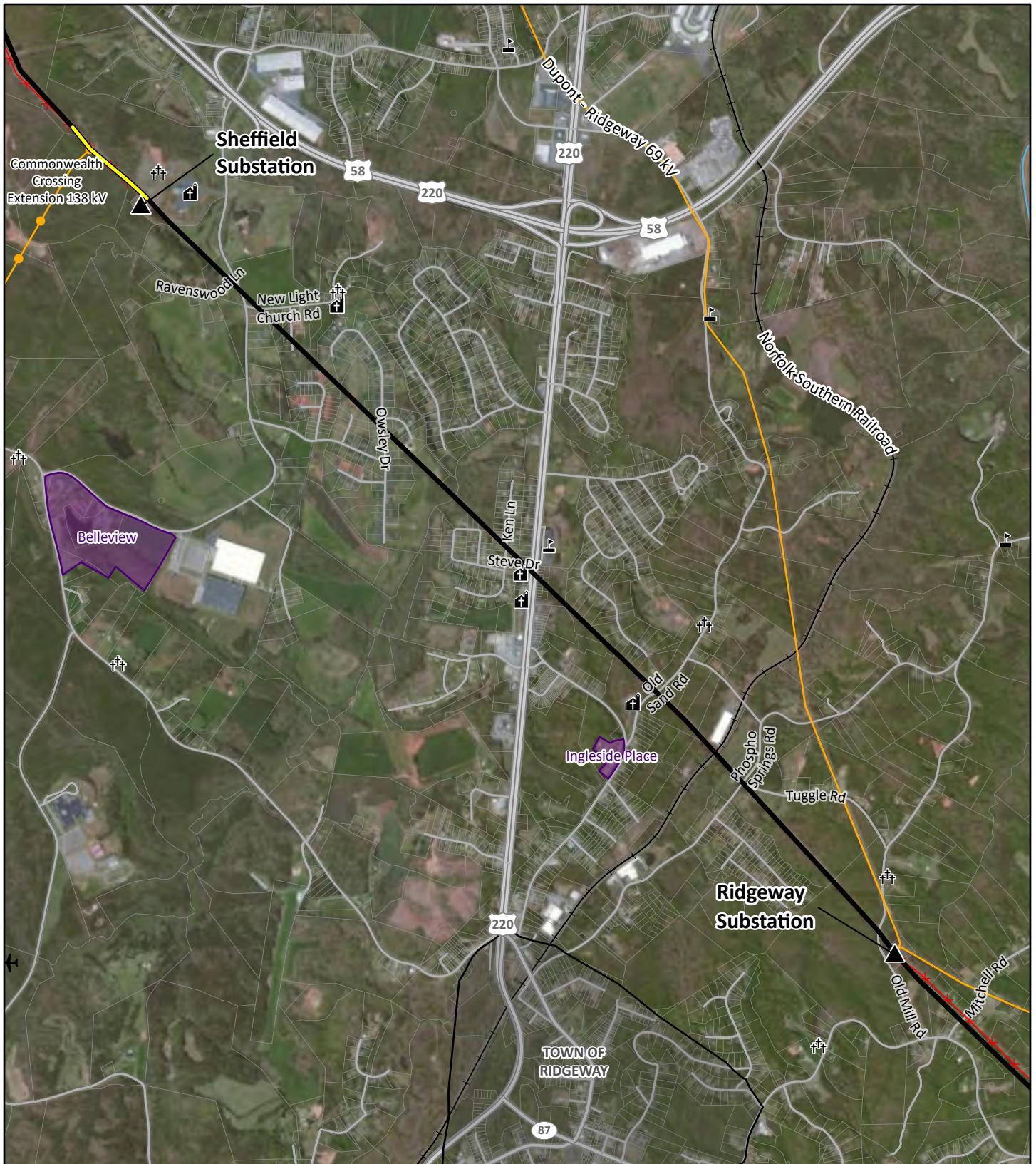
October 12, 2021



**Map 4:
Fieldale to Sheffield
Rebuild Route**

Fieldale to Ridgeway 138 kV
Rebuild Project

0 0.5 1
Miles



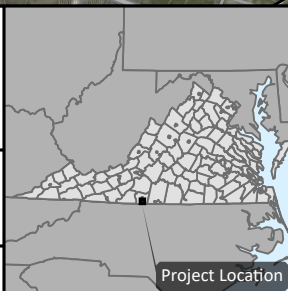
- ▲ Existing AEP Substation
- 138 kV Rebuild Route
- 138 kV to be Reconstructed
- Existing Transmission Line to be Retired
- Existing AEP Transmission Line (69 kV or lower)
- Existing AEP Transmission Line (115-230 kV)
- ▲ School
- ▲ Place of Worship
- ✚ Cemetery
- ✚ Airport
- Highway
- Road
- Railroad
- Pipeline
- Smith River
- NRHP Resource (Eligible and Listed)
- Town/City Limits
- Parcel Boundary

Henry County,
Virginia

Author: jhumiston
Project: 159105

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

October 12, 2021

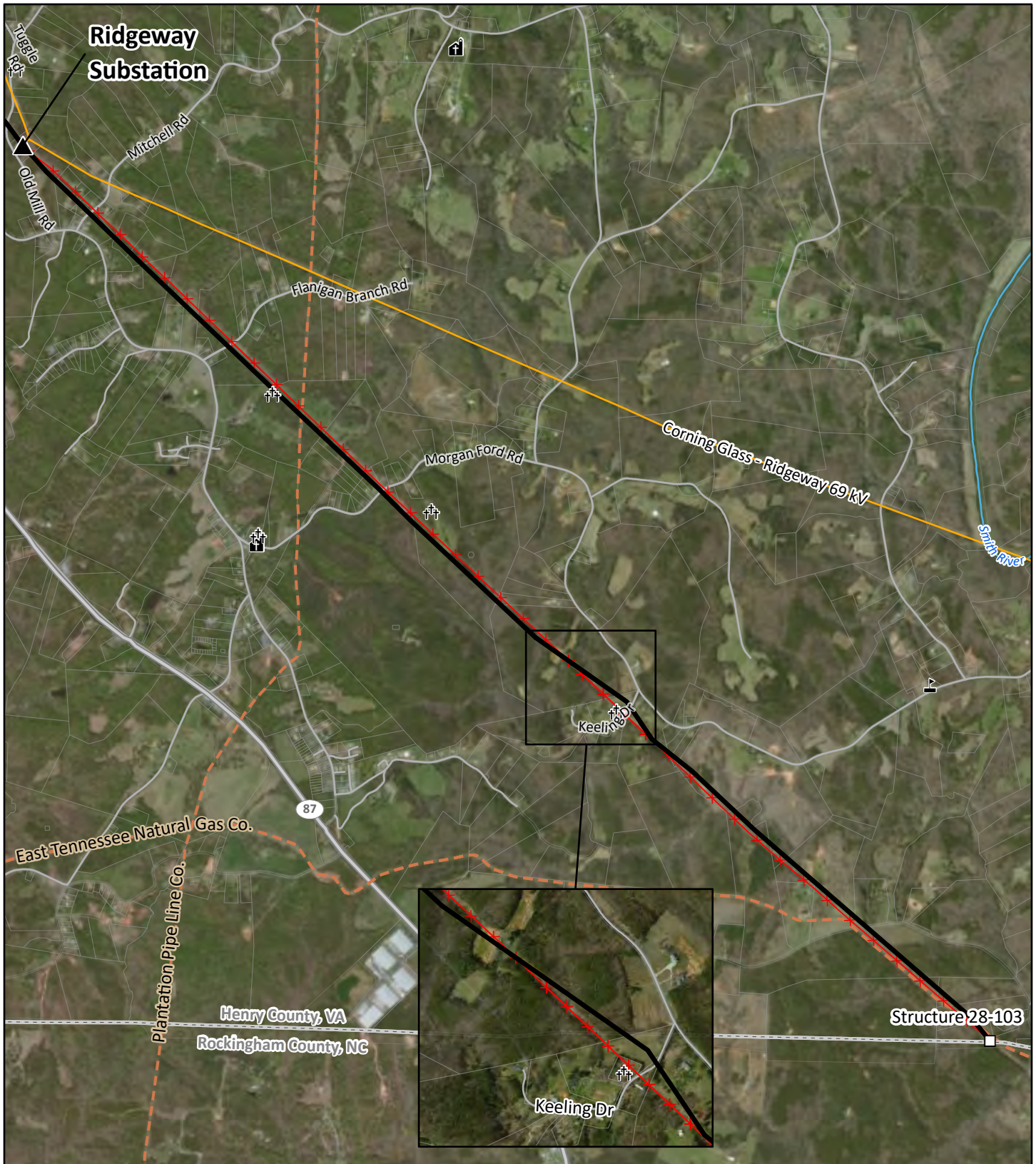


**Map 5:
Sheffield to Ridgeway
Rebuild Route**

**Fieldale to Ridgeway 138 kV
Rebuild Project**

APPALACHIAN POWER

0 0.25 0.5
Miles



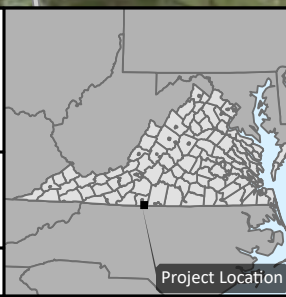
- ▲ Existing AEP Substation
- Existing AEP Structure
- 138 kV Segment Rebuild Route
- ✂ Existing Transmission Line to be Retired
- Existing AEP Transmission Line (69 kV or lower)
- ▲ School
- ⛪ Place of Worship
- ⛦ Cemetery
- Highway
- Road
- - Pipeline
- Stream (NHD)
- ▭ County/State Boundary
- ▭ Parcel Boundary

Henry County,
Virginia

Author: jhumiston
Project: 159105

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

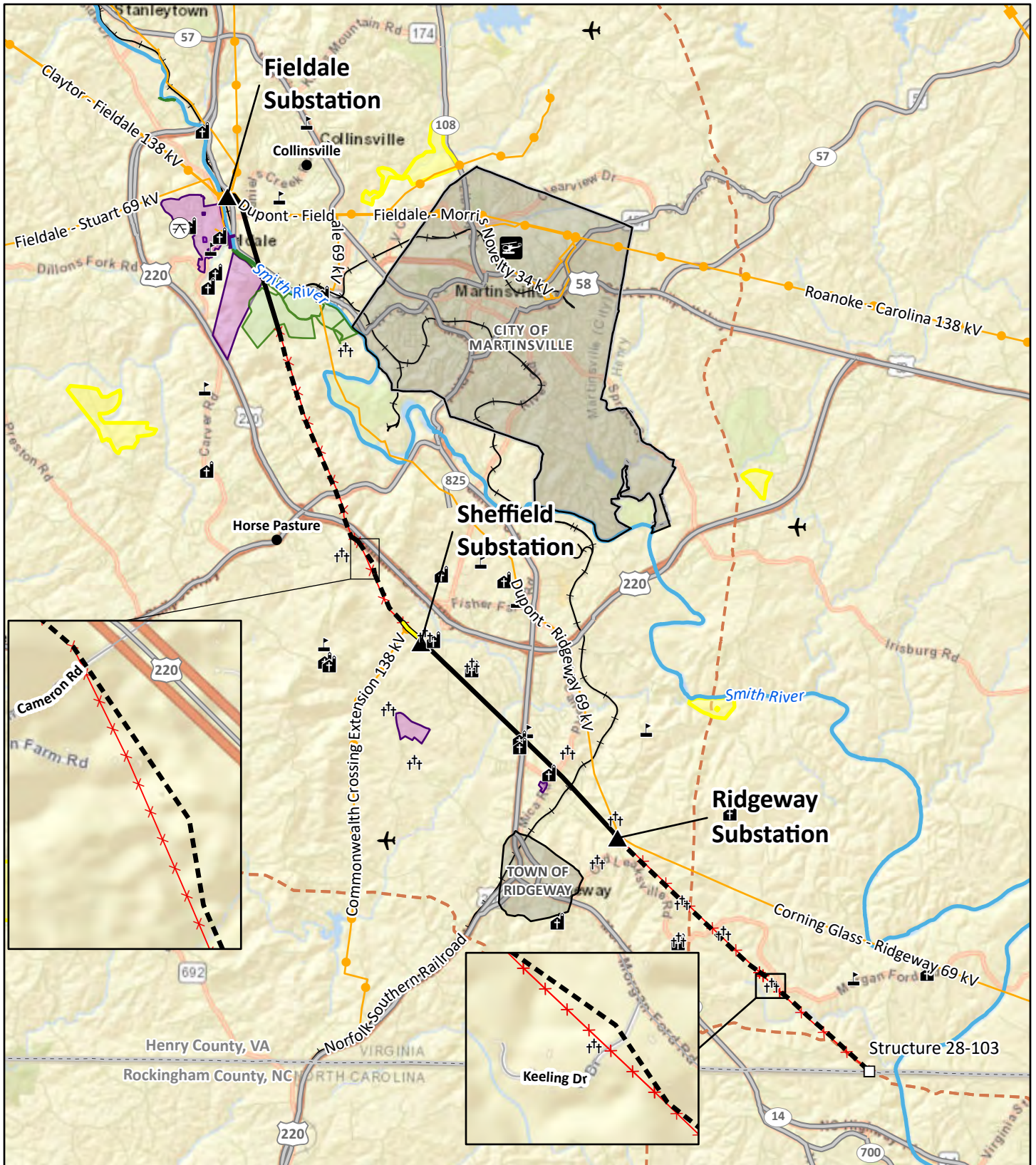
October 12, 2021



Map 6:
Ridgeway Substation to
Structure 28-103

Fieldale to Ridgeway 138 kV
Rebuild Project

0 0.25 0.5
Miles



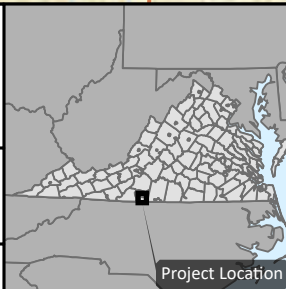
- | | |
|---|---------------------------------------|
| ▲ Existing AEP Substation | ⚓ School |
| □ Existing AEP Structure | ⛪ Place of Worship |
| — 138 kV Rebuild on New ROW | ⚰ Cemetery |
| — 138 kV Rebuild on Existing Centerline | ✈ Airport |
| — 138 kV to be Reconstructed | 🚁 Helipad |
| — Existing AEP Transmission Line (69 kV or lower) | 🛣 Highway |
| — Existing AEP Transmission Line (115-230 kV) | 🚂 Railroad |
| — Existing AEP Transmission Line (345 kV +) | 🛢 Pipeline |
| — Existing Transmission Line to be Retired | 🌊 Smith River |
| ⊗ Populated Place | 🟡 VOF-Easement |
| 🌳 Fieldale Park | 🟢 Fieldale Trail and River Access |
| | 🟣 NRRP Resource (Eligible and Listed) |
| | 🏠 Town/City Limits |
| | 🗺 County/State Boundary |

Henry County, Virginia

Author: jhumiston
Project: 159105

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

November 04, 2021



**Map 7:
Proposed Route**

**Fieldale to Ridgeway 138 kV
Rebuild Project**

0 1.5 3
Miles

Attachment C: Study Area Photographs

Fieldale to Sheffield Rebuild Section Study Area



Photo 1. Appalachian Drive and Fieldale Substation



Photo 2. Rolling Terrain Near Sheffield Substation



Photo 3. Fieldale Trail and River Access Easement

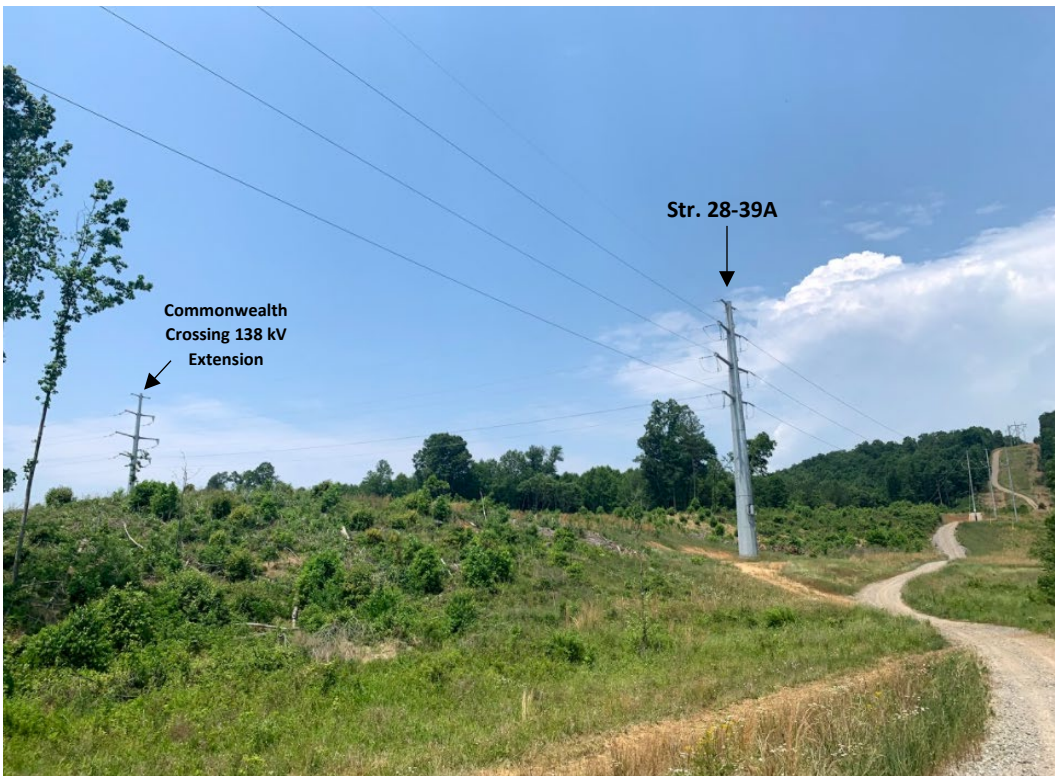


Photo 4. Commonwealth Crossing 138 kV Extension (Structures 28-39A to 28-36)

Sheffield to Ridgeway Rebuild Section Study Area



Photo 5. Farmingdale Community



Photo 6. Greensboro Road

Ridgeway to Structure 28-103 Rebuild Section Study Area



Photo 7. Timbering Uses Near Ridgeway



Photo 8. Forested, Rolling Terrain

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 August 2019, May 2021, and August 2021.
Federal Agencies	<ul style="list-style-type: none"> • USFWS using the IPaC tool [July 2021] • USGS NHD and USFWS NWI databases • Agency letters sent on March 17, 2021.
State Agencies	<ul style="list-style-type: none"> • VDHR’s Virginia Cultural Resources Information System (VCRIS) database review [2021] • VDEQ databases [2021] • VDWR online databases for sensitive species and habitats [2021] • Virginia Department of Transportation contacted to check on future improvements, [August 2019] • Agency letters sent on March 17, 2021 and responses compiled in Attachment F.
Local Agencies/Officials	<ul style="list-style-type: none"> • Henry County Officials – virtual presentation to officials by Siting personnel beginning in 2019 and throughout duration of Project. • Henry County GIS • Agency letters sent on March 17, 2021
Outreach Efforts	<ul style="list-style-type: none"> • Three Project mailings were sent to 466 landowner addresses on March 17, March 23, and April 1, 2021 and included the following: <ul style="list-style-type: none"> ○ A postcard (March 17, 2021 mailing) ○ A fact sheet, letter, detailed flyer about transmission line routing, and a comment card with a prepaid postage return envelope (March 23, 2021 mailing) ○ A trifold letter with a detachable comment card • Advertisements were posted in the Martinsville Bulletin (Richmond, VA) on Wednesday, March 23, 2021 and Sunday, March 28, 2021 and the Henry County Enterprise (Stuart, VA) on Saturday, March 20, 2021 and Saturday, March 27, 2021 to introduce the Project and virtual open house • Two automated telephone notification from the Company were made on March 24 and March 31, 2021 to notify landowners of the virtual open house. 78 available contacts were attempted for each notification.
Open House(s)	March 17, 2021 Virtual Open House with interactive overview map, fact sheet, updates and news releases, schedule information, and photographs of representative structures. An in-person public open house was not advisable during the COVID-19 pandemic given the travel restriction and social distancing recommendations and requirements of the Centers for Disease Control and Prevention and the Executive Orders issued by the Governor of the Commonwealth.
Website and Mailed-In Comments	Received 41 public comments. AEP representatives reviewed the comments to address in the route planning process, and reached out to the authors to address concerns or discuss the Project further.

Attachment E: GIS Data Sources

Attachment E. GIS Data Sources		
Siting Criteria	Source	Description
Land Use		
Number of parcels crossed by the ROW	Virginia Geographic Information Network (2021)	Count of the number of parcels crossed by the ROW
Number of residences within 100, 250, and 500 feet of the route centerline	Digitized from LiDAR (2020), Virginia Geographic Information Network (2019), and field verified from points of public access, as available	Count of the number of residences within the ROW and within 100, 250, and 500 feet of potential routes
Number of commercial buildings within 250 and 500 feet of the route centerline	Digitized from LiDAR (2020), Virginia Geographic Information Network (2019), Microsoft Building Footprint data (2020), and field verified from points of public access, as available	Count of the number of commercial buildings within the ROW and within 250 and 500 feet of potential routes
Land use acreage and distance crossed by the ROW	National Land Cover Database [NLCD] (2016)	The NLCD 2016 (NLCD 2016) 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
Number of archeological resources within the ROW and within 250 feet of route centerline	Virginia Department of Historic Resources (VDHR) Virginia Cultural Resources Information System (VCRIS) (2021)	Previously identified archeological resources listed or eligible on the National Register of Historic Places (NRHP) acquired through VCRIS (2021)
Number of historic architectural resources within the ROW, within 0.5 mile of centerline	Virginia Department of Historic Resources (VDHR) Virginia Cultural Resources Information System (VCRIS) (2021)	Previously identified historic architectural resource sites and districts listed or eligible on the NRHP acquired through VCRIS (2021)
Institutional uses (schools, places of worship and cemeteries) within 250 and 1,000 feet of the route centerline	U.S. Geological Survey's GNIS (2020)	This dataset includes the locations of cemeteries, churches, hospitals, parks, and schools. Features within 250 and 1,000 feet of potential routes were field verified.
Natural Environment		
Forest clearing within the ROW	Digitized based on Aerial imagery from Virginia Geographic Information Network	Acres of forest within the ROW

Attachment E. GIS Data Sources		
Siting Criteria	Source	Description
	(2019)	
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) (2020)	Miles of federal, state and local lands crossed by the ROW
Technical		
Route length	Measured in GIS	Length of route in miles
Number of road crossings	ESRI road file (2018), Virginia Geographic Information Network (VGIN) (2021)	Count of federal, state and local roadway crossings
Number of pipeline crossings	S&P Global Platts NGL Refined Product Pipelines (2019)	Number of known pipelines crossed by the transmission ROW
Number of transmission line crossings	Latest AEP TGIS (2021)	Number of high voltage (100 kV or greater) transmission lines crossed by the ROW
Percentage of steep slopes crossed	Derived from seamless Digital Elevation Models (DEMs) obtained from the U.S. Geologic Survey (2021)	Percentage of slope greater than 20 percent crossed by the routes, percent of total length
Length of transmission line parallel	Latest AEP TGIS (2021)	Miles of the route parallel to existing high voltage transmission lines
Length of pipeline parallel	U.S. Department of Transportation National Pipeline Mapping System (2021)	Miles of the route parallel to existing pipelines
Length of road parallel	ESRI road file (2021)	Miles of the route parallel to existing roadways

Attachment F: Agency Correspondence

Fieldale - Ridgeway Transmission Line Rebuild Project Agency Letter Contact List

Jurisdiction	Notes	Response Received	Prefix	Last Name	First Name	Title	Organization	Telephone Number	Email Address	Street Address	Address 2	City	State	Zipcode
Local			Mr.	Clark	Lee	Director of Planning, Zoning and Inspection	Henry County Department of Planning, Zoning & Inspection	276-634-4620	leclark@co.henry.va.us	3300 Kings Mountain Road		Martinsville	Virginia	24112
State			Ms.	Ewing	Amy	Biologist Manager	VA Department of Wildlife Resources (DWR) Wildlife Information and Environmental Services Section	804-367-2211	Amy.Ewing@dwr.virginia.gov	P. O. Box 90778		Henrico	Virginia	23228
	Send via email		Mr.	Orndorff	Wil	Karst Protection Coordinator	Virginia Department of Conservation and Recreation Natural Heritage Program	540-230-5960	wil.orndorff@dcr.virginia.gov	600 E Main Street	24th Floor	Richmond	Virginia	24073
	No mailed letter - online project review process to be submitted		Mr.	Hypes	René	Environmental Review Coordinator	Virginia Department of Conservation and Recreation Natural Heritage Program	804-371-2708	Rene.Hypes@dcr.virginia.gov	600 East Main Street	24th Floor	Richmond	Virginia	23219
			Mr.	Wilson	Irvine	Natural Area Protection Specialist	Virginia Department of Conservation and Recreation Planning and Recreation	804-786-6745	irvine.wilson@dcr.virginia.gov	600 East Main Street	24th Floor	Richmond	Virginia	23219
			Mr.	Weld	Robert	Regional Director	Virginia Department of Environmental Quality - Blue Ridge Regional Office	540-562-6870	Robert.Weld@deq.virginia.gov	901 Russell Drive		Salem	Virginia	24153
			Ms.	Henicheck	Michelle	Senior Wetland Ecologist	Virginia Department of Environmental Quality - Central Office	804-698-4007	michelle.henicheck@deq.virginia.gov	1111 East Main Street	Suite 1400	Richmond	Virginia	23219
			Ms.	Rayfield	Bettina	Manager, Environmental Impact Review	Virginia Department of Environmental Quality - Office of Environmental Impact Review	804-698-4204	Bettina.Rayfield@deq.virginia.gov	1111 East Main Street	Suite 1400	Richmond	Virginia	23219
			Mr.	Roberts	Jay	VWP Permit Manager	Virginia Department of Environmental Quality - Office of Wetland and Stream Protection - Blue Ridge Regional Office	540-562-6785	jesse.Roberts@deq.virginia.gov	901 Russell Drive		Salem	Virginia	24153
			Mr.	Watkinson	Tony	Chief of Habitat Management	Virginia Marine Resources Commission Habitat Management Division	757-247-2250	Tony.Watkinson@mrc.virginia.gov	2600 Washington Avenue	Third Floor	Newport News	Virginia	23607
			Ms.	Atkins	Jennifer	Region 3	Virginia Department of Agriculture and Consumer Services-Southside Regional Office	804-839-9003	Jennifer.Atkins@vdaacs.virginia.gov	P.O. Box 1163		Richmond	Virginia	23218
			Mr.	Kirchen	Roger	Director, Review & Compliance Division	Virginia Department of Historic Resources- Review and Compliance Division (RCD)	804-482-6091	roger.kirchen@dhr.virginia.gov	2801 Kensington Avenue		Richmond	Virginia	23221
			Ms.	Little	Martha	Deputy Director of Stewardship	Virginia Outdoors Foundation	804-577-3337	mlittle@vof.org	600 East Main Street	Suite 402	Richmond	Virginia	23219
			Mr.	Hibbitts	Harry	Assistant Director of Stewardship	Virginia Outdoors Foundation	540-430-0392	hhibbitts@vof.org	401 Commerce Rd	Suite 411	Staunton	Virginia	24401
			Mr.	Santucci	Mike	Manager	Virginia Department of Forestry		mike.santucci@dof.virginia.gov	900 Natural Resources Drive		Charlottesville	Virginia	22903
			Mr.	Kevin	Keith	Senior Area Forester	Virginia Department of Forestry	276-634-8046	kevin.keith@dof.virginia.gov	285 South Main Street	Suite B	Rocky Mount	Virginia	24151
			Mr.	Denny	Scott	Senior Aviation Planner	Virginia Department of Aviation	804-236-3638 ext. 63638	Scott.Denny@doav.virginia.gov	5702 Gulfstream Road		Richmond	Virginia	23250
			Mr.	Spears	David	Director, Division of Geology and Mineral Resources	Virginia Department of Mines, Minerals, and Energy	434-951-6310	dcmrinfo@dmme.virginia.gov	900 Natural Resources Drive	Suite 400	Charlottesville	Virginia	22903
			Mr.	Wells	Jeffrey	Office of Drinking Water	Virginia Department of Health, Danville Field Office	434-836-8416	jeff.wells@vdh.virginia.gov	211 Nor Dan Drive	Suite 1040	Danville	Virginia	24540
			Ms.	Aymond	Angel	Location Studies Project Manager	Virginia Department of Transportation	254-592-7912	angel.aymond@vdot.virginia.gov	1401 E Broad Street		Richmond	Virginia	23219
			Mr.	King	Ken	District Engineer	Virginia Department of Transportation - Salem District	540-387-5320	Ken.King@VDOT.virginia.gov	731 Harrison Avenue		Salem	Virginia	24153
Federal			Ms.	Frye	Jennifer	Chief, Western Virginia Regulatory Section	US Army Corps of Engineers - Norfolk District, Western Section	540-344-1498	jennifer.s.frye@usace.army.mil	210 Franklin Road SW		Roanoke	Virginia	24011
			Ms.	Esher	Diana	Acting Regional Administrator	U.S. Environmental Protection Agency Region 3	215-814-2706	R3_RA@epa.gov	1650 Arch Street		Philadelphia	Pennsylvania	19103
	Send via email		Ms.	Schulz	Cindy	Field Supervisor	US Fish and Wildlife Service Virginia Ecological Services	804-654-1842	cindy_schulz@fws.gov	6669 Short Lane		Gloucester	Virginia	23061
	Send via email		Mr.	Andersen	Troy	Supervisory Fish & Wildlife Biologist	US Fish and Wildlife Service Virginia Ecological Services	804-654-9235	troy_andersen@fws.gov	6669 Short Lane		Gloucester	Virginia	23061
			Mr.	Martinez-Martin	Edwin	State Conservationist	U.S. Department of Agriculture; Natural Resources Conservation Service Virginia	804-287-1691	edwin.martinez@usda.gov	1606 Santa Rosa Road	Suite 209	Richmond	Virginia	23229
			Mr.	Simkins	John	Planning and Environment Team Lead	USDOT Federal Highway Administration Virginia Division	804-775-3347	john.simkins@dot.gov	400 North 8th Street	Suite 750	Richmond	Virginia	23219
			Mr.	Slaughter	Jeff	Manager	USDOT-Federal Aviation Administration Flight Standards District Office	804-222-7494	N/A	5707 Huntsman Road	Suite 100	Richmond	Virginia	23250
			Ms.	Solomon	Jennifer	Regional Administrator	Federal Aviation Administration Eastern Region Planning and Programming Branch - Roanoke	540-265-2290	jennifer.solomon@faa.gov	5815 Airport Road	Suite B	Roanoke	Virginia	24012

March 17, 2021

[Name]
[Title, company]
[Address 1]
[Address 2]

Subject: Appalachian Power Company: Fieldale – Ridgeway Transmission Line Rebuild Project, Henry County, Virginia

[Insert Greeting Line]:

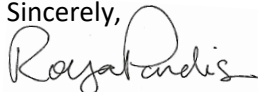
Appalachian Power Company is proposing the Fieldale – Ridgeway Transmission Line Rebuild Project (Project) in Henry County, Virginia. Appalachian Power Company contracted POWER Engineers, Inc. (POWER) to conduct a siting study and prepare the Certificate of Public Convenience and Necessity application for filing the Project with the Virginia State Corporation Commission (SCC). On behalf of Appalachian Power Company, POWER is requesting your input on the Project.

The Project will address electric reliability by rebuilding aging infrastructure. The existing Fieldale – Dan River 138 kilovolt (kV) Transmission Line will be rebuilt between the Fieldale, Sheffield, and Ridgeway substations and near the Virginia-North Carolina state border (approximately 15 miles) in or near the existing right-of-way.

Appalachian Power Company and POWER have identified a study area for the existing 138 kV transmission line to be rebuilt, as shown in Attachment 1. Appalachian Power Company is interested to know if your agency has any specific concerns about the Project. We appreciate your input, and your comments will be incorporated into the filing with the SCC. Please distribute this notification to staff members who may be involved with this Project for review and comment.

Should you have questions, please contact me via email at roya.pardis@powereng.com or by phone at 281-765-5548. If you wish to speak to an Appalachian Power Company representative, please contact Emily Larson via email at eslarson@aep.com or by phone at 804-592-7317.

Sincerely,

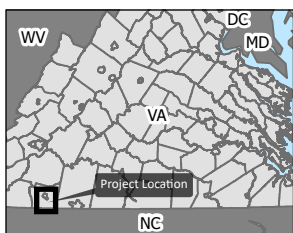
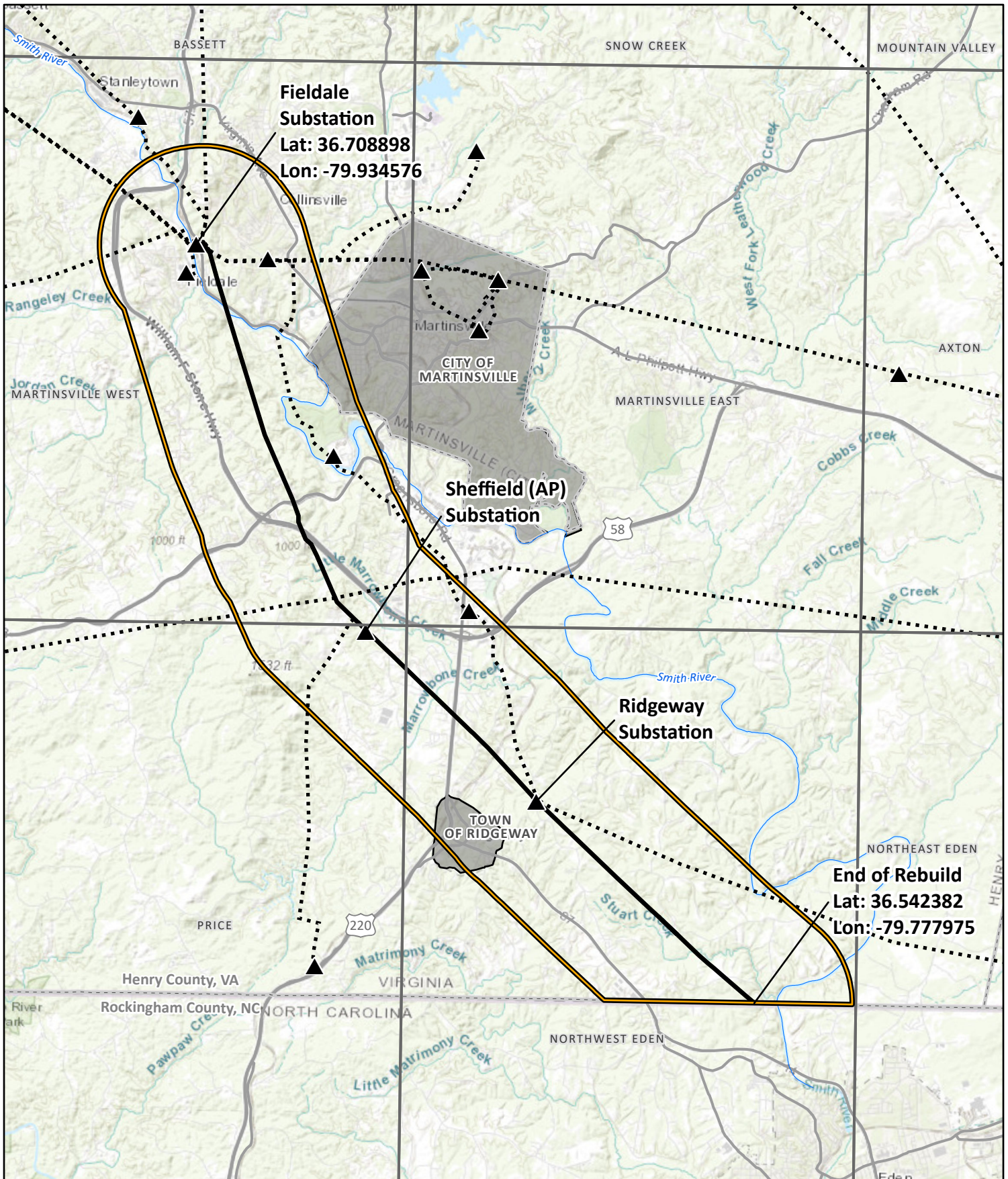


Roya Pardis
POWER Engineers, Inc.

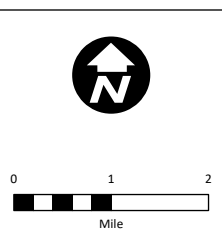
Enclosures: Attachment 1 – Project Study Area and Transmission Line to be Rebuilt

ATTACHMENT 1

**PROJECT STUDY AREA AND
TRANSMISSION LINE TO BE REBUILT**



- ▲ Existing AEP Substation
- Transmission Line to be Rebuilt
- Existing Transmission Line
- ▭ Project Study Area
- ▭ County/State Boundary
- ▭ USGS 24k Topo Map Boundary
- ▭ Town/City Limits
- ▭ Highway





Henry County
Virginia

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

Date: 3/4/2021
Author: AW
Project: 159105

**Fieldale – Ridgeway
Transmission Line
Rebuild Project**

From: Harper, John - NRCS, Richmond, VA <john.harper@usda.gov>

Sent: Tuesday, March 30, 2021 9:35 AM

To: Pardis, Roya <roya.pardis@powereng.com>

Subject: [EXTERNAL] Mail piece from Appalachian Power, for you from Edwin

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

Dear Roya Pardis,

As an existing right a way, there's no requirement for FPPA form 1006 or 106.

J. David Harper

State Soil Scientist

State Resource Inventory Coordinator

1606 Santa Rosa Road, Suite 209

Richmond, Virginia 23229

804-287-1647

Good afternoon, David H. and Chad,

Please see the attached letter from the Appalachian Power Company regarding a Fieldale-Ridgeway Transmission Line Rebuild Project in Henry County, Virginia.

Edwin has reviewed it and wants it to go to you for your attention.

Respectfully,

Kathleen Anderson

Executive Assistant to the State Conservationist

Natural Resources Conservation Service

1606 Santa Rosa Road, Suite 209

Richmond, VA 23229

804-287-1638

Telework: Monday, Tuesday, Friday

Office: Wednesday, Thursday

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From: Ledford, Dave <charles.ledford@vdot.virginia.gov>
Sent: Wednesday, April 7, 2021 10:29 AM
To: Pardis, Roya <roya.pardis@powereng.com>
Cc: Kenneth King <ken.king@vdot.virginia.gov>; Lisa Hughes <lisa.hughes@vdot.virginia.gov>;
Phillips, Stephen <stephen.phillips@vdot.virginia.gov>
Subject: [EXTERNAL] Appalachian Power Fieldale-Ridgeway Transmission Line Rebuild Project

<p>CAUTION: This Email is from an EXTERNAL source. STOP. THINK before you CLICK links or OPEN attachments.</p>

Roya

Good morning, I'm Dave Ledford the Land Use Engineer for Martinsville Residency.
Thank you for reaching out and allowing the department to comment and assist with your project.

The department has reviewed your proposal sketch and determined the project will include 22 crossings of VDOT roadways. Included four crossings of primary routes, one within limited access. The remaining 18 crossings are over secondary routes. The proposed sketch did not include whether the project will include new poles or towers, the location of proposed temporary or permanent entrances, or the method or crossing the roadways. The items VDOT will be most concerned with include the Maintenance of Traffic and the location of any proposed entrances.

I am sure as the project details develop these issues can be resolved. The department is looking forward to assisting you with this upgrade.

--

Assistant Resident Engineer / Martinsville Residency
Virginia Department of Transportation
276-266-1449
charles.ledford@VDOT.Virginia.gov



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
731 HARRISON AVENUE
SALEM, VIRGINIA 24153

Stephen Brich, P.E.
COMMISSIONER

April 12, 2021

To: Roya Pardis
POWER Engineers, Inc.

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

Subject: RE: Fieldale-Ridgeway Transmission Line Rebuild

VDOT received a request to review transportation impacts of the above referenced project. The project will rebuild approximately 15 miles of the existing Fieldale – Dan River 138 kilovolt (kV) transmission line between Fieldale, Sheffield, and Ridgeway substations and near the Virginia-North Carolina state border in or near the existing right-of-way (see Attachment 1).

Comments:

- 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.
- All circumstances where the proposed project may impact transportation operations should be coordinated with VDOT prior to any construction.
- Activities requiring detours or other modifications to transportation operations should be conducted at times during which impacts will be minimized.
- 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
Lisa Hughes – Martinsville Resident Engineer
James Keene – Land Development Engineer
Charles Ledford – Asst. Martinsville Resident Engineer
David Kiser – Asst. Martinsville Resident Engineer
Donald DeBerry – Salem District Environmental Manager
EIR Coordination Listserv

Attachement (1)



April 15, 2021

VIA Email

Roya Pardis
Power Engineers, Ins.
11 S. 12th Street
Suite 315
Richmond, VA 23219
roya.pardis@powereng.com

RE: Appalachian Power Company: Fieldale – Ridgeway Transmission Line Rebuild Project, Henry County, Virginia

Dear Roya Pardis:

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 electric transmission corridor running through Henry County, Virginia.

Based on the correspondence received on March 17, 2021, Appalachian Power Company is proposing to rebuild the current Fieldale – Dan River 138 kilovolt (kV) Transmission Line, due to aging infrastructure, between the Fieldale, Sheffield, and Ridgeway substations and near the Virginia-North Carolina state boarder in or near the existing right-of-way. It is understood that the approximate length of the project from the Fieldale substation to the state border is about 15 miles, and POWER Engineers, Inc., on behalf of Appalachian Power Company, has asked VOF for input on the project. 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 three properties within 2.0 miles of the transmission line. These easements, 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 proposed replacement structures and associated project components.

While recognizing engineering constraints, we strongly advocate for the replacement structures and the associated project components to be minimized in their presence on the landscape, or at the least, mimic the characteristics of the existing towers in height, size, and reflectivity to the greatest extent possible.

Thank you for the notice, and we look forward to working with POWER Engineers, Inc. and Appalachian Power Company in the continued planning and development of this project. If you have any further questions or comments, please feel free to contact me at (804) 577-3337 or mlittle@vofonline.org.

Sincerely,



Martha Little
Deputy Director

CC:

- Brett Glymph, VOF Executive Director
- Emily Larson, Appalachian Power Company

From: Scott Denny <scott.denny@doav.virginia.gov>
Sent: Thursday, April 22, 2021 9:20 AM
To: Pardis, Roya <roya.pardis@powereng.com>
Subject: [EXTERNAL] Re: Appalachian Power Company: Fieldale - Ridgeway Transmission Line Rebuild Project

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

Ms Pardis

The Virginia Department of Aviation has reviewed the information package you supplied in your March 17, 2021 letter. It appears as though the projects boundaries are greater than 20,000 linear feet from a public use airport. Therefore unless any of the support structures, be they temporary or permanent, reach 200' above ground level, no 7460 form is required to be submitted to the Federal Aviation Administration.

I encourage you to confirm with the applicable locality to ensure grant no local permits are required.

Please feel free to contact me if you have any questions.

Sincerely

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

On Wed, Apr 21, 2021 at 5:47 PM roya.pardis@powereng.com <roya.pardis@powereng.com> wrote:

Good afternoon Scott,

We recently mailed you a copy of the attached letter regarding Appalachian Power Company's Fieldale – Ridgeway Transmission Line Rebuild Project in Henry County, Virginia. We wanted to know if you or your agency has any comment or feedback to include into our siting process and upcoming filing with the Virginia State Corporation Commission later this year. Please let me know if you have any questions or require additional information on the project.

We look forward to hearing from you!

Thank you,

ROYA PARDIS
ENVIRONMENTAL PLANNER

11 S. 12TH STREET
SUITE 315
RICHMOND, VA 23219

281-765-5548
804-822-6659 cell
POWER Engineers, Inc.
www.powereng.com

From: Wells, Jeffrey <jeff.wells@vdh.virginia.gov>
Sent: Friday, April 23, 2021 8:39 AM
To: Pardis, Roya <roya.pardis@powereng.com>
Cc: eslarson@aep.com
Subject: [EXTERNAL] Re: Appalachian Power Company: Fieldale - Ridgeway Transmission Line Rebuild Project

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

Good Morning,

Yes we received the attached letter and I have reviewed it. Our Office does not have any comments or concerns about the project as it relates to waterworks.

Please let me know if you have any questions.

Jeff

Jeffrey S. Wells, P.E.

Field Director

VDH-Office of Drinking Water

211 Nor Dan Drive, Suite 1040

Danville, Virginia 24540

(434) 836-8416

FAX (434) 836-8424

Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of
Administration and Finance

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

Nathan Burrell
Deputy Director of
Government and Community Relations

Thomas L. Smith
Deputy Director of
Operations

April 23, 2021

Roya Pardis
Power Engineers, Inc.
11 South 12th Street, Suite 315
Richmond, VA 23219

Re: Fieldale - Ridgeway Transmission Line Rebuild Project

Dear Ms. Pardis:

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.

Martinsville West Quadrangle

According to the information currently in our files, the Smith River - Jordan Creek Stream Conservation Unit (SCU) is located 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 given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Smith River – Jordan Creek SCU has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resource of concern associated with this site is:

<i>Percina rex</i>	Roanoke logperch	G1G2/S1S2/LE/LE
--------------------	------------------	-----------------

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, the Smith River has been designated by the VDWR as a "Threatened and Endangered Species Water" for this species and occurs both within the **Martinsville West and East Quadrangles**.

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. DCR Due to the legal status of the Roanoke logperch, DCR recommends avoiding impacts to the Smith River and coordination with the USFWS and the VDWR to ensure compliance with protected species legislation.

According to information currently in our files, the Smith River Rt. 682 Slopes is also within the project area. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Smith River Rt. 682 Slopes Conservation Site has been given a biodiversity significance ranking of B5, which represents a site of general significance. The natural heritage resource of concern associated with this site is:

Central Appalachian /Piedmont Basic Mesic Forest (Twinleaf – BlueCohosh Type) G4G5/S4/NL/NL

Basic Mesic Forests are represented by forests occurring in fertile, mesic, low-elevation habitats of the Coastal Plain, Piedmont and major valleys of the Central Appalachian region. Typical sites are deep ravines and sheltered north- or east-facing slopes subtending large streams and rivers, extending onto toe slopes bordering well-drained floodplains. Soils are usually weathered from carbonate or mafic bedrock, or from calcareous, shell-rich deposits in the Coastal Plain. The term "basic," as applied by DCR-DNH ecologists, refers high levels of base cation saturation rather than to soil pH, which analysis has proven to be a less reliable indicator of fertility and parent material. Slopes subtending stream cutting through limestone and other calcium-rich substrates of the Piedmont support a distinctive community type characterized by lush growth of twinleaf, dwarf larkspur (*Delphinium tricorne*), broad-leaved waterleaf (*Hydrophyllum canadense*), and other spring ephemerals (Fleming et al., 2021).

DCR recommends avoiding this conservation site and associated natural heritage resource.

Price Quadrangle

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

Northeast Eden Quadrangle

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. Please note, a predictive model identifying potential habitat for a natural heritage resource does intersect the project boundary. However, based on DCR biologist's review of the proposed project a survey is not recommended for the resource.

In addition, if tree removal is proposed for the project, it will fragment Ecological Cores (C3,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.

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). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

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. Guidance on native plant species can be found here: <https://www.dcr.virginia.gov/natural-heritage/native-plants-finder>.

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.

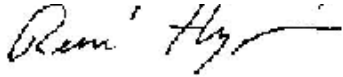
New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

A fee of \$395.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 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 Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@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: Ernie Aschenbach, VDWR
Troy Andersen, USFWS

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).

Fleming, G.P., K.D. Patterson, and K. Taverna. 2021. The Natural Communities of Virginia: a Classification of Ecological Community Groups and Community Types. Third approximation. Version 3.3. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. www.dcr.virginia.gov/natural-heritage/natural-communities/ [Accessed: 23-April-2021]



COMMONWEALTH of VIRGINIA

Matthew J. Strickler
Secretary of Natural Resources

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

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

April 26, 2021

Ms. Roya Pardis
POWER Engineers
11 S. 12th Street, Suite 315
Richmond, VA 23219

Re: Appalachian Power Company: Fieldale – Ridgeway Transmission Line Rebuild Project
Henry County, Virginia
DHR File No. 2021-0090

Dear Ms. Pardis:

Thank you for initiating consultation with the Virginia Department of Historic Resources (DHR) on the project referenced above. DHR understands the project to consist of rebuilding approximately 15 miles of the existing Fieldale – Dan River 138 kilovolt (kV) Transmission Line between the Fieldale, Sheffield, and Ridgeway substations and near the Virginia-North Carolina border. Work is proposed to be conducted in or near the existing right-of-way (ROW). Our comments are provided as assistance to Appalachian Power Company (Appalachian) in the preparation of an application to the State Corporation Commission (SCC). We reserve the right to provide additional comment through the Federal Section 106 process, if applicable.

A preliminary search of our Archives shows 51 recorded historic architectural resources within one-half (1/2) mile of the line, including four (4) properties listed in the Virginia Landmarks Register (VLR) and/or National Register of Historic Places (NRHP), one (1) property determined potentially eligible for listing in the VLR/NRHP, and 10 properties that have not been evaluated.

A preliminary search of our Archives shows 233 recorded historic architectural resources within the 1.5-mile Project Study Area delineated in the map submitted with your request for comment. Among these, four (4) properties are listed in the VLR and/or NRHP, one (1) property has been determined potentially eligible for listing in the VLR/NRHP, and 10 properties have not been evaluated. Additionally, 23 previously recorded archaeological sites have been identified within the 1.5-mile Project Study Area including the Kohler Site (44HR0006; DHR ID No. 044-5165) which is adjacent the existing ROW.

To aid in your assessment of potential impacts to historic resources and prior to finalizing Appalachian's application to the SCC, we recommend that a pre-application analysis be prepared and submitted to DHR in accordance with Section I of the DHR's *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia*. Once an alternative is

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

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

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

approved by the SCC, we are likely to recommend full architectural and archaeological studies and mitigation of all moderate to severe impacts to VLR/NRHP-eligible resources.

We look forward to working with Appalachian throughout this project. If you have any questions, please do not hesitate to contact me at tim.roberts@dhr.virginia.gov.

Sincerely,



Timothy Roberts, Project Review Archaeologist
Review and Compliance Division

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
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5357 Main Street
PO Box 519
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2801 Kensington Avenue
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Rob Farrell
State Forester



COMMONWEALTH of VIRGINIA

Department of Forestry

900 Natural Resources Drive, Suite 800 • Charlottesville, Virginia 22903
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April 30, 2021

Roya Pardis
POWER Engineers, Inc.
11 S. 12th St.
Suite 315
Richmond, VA 23219

SUBJECT: Appalachian Power Company: Fieldale – Ridgeway Transmission Line Rebuild Project, Henry County, Virginia

Dear Roya Pardis:

Thank you for the opportunity to review and comment on the Environmental Impact Review for the rebuilding of the Fieldale-Ridgeway Transmission Line described in your letter from March 17, 2021.

To the degree that the project is restricted to the existing right-of-way and does not clear existing forest, the Department of Forestry has no major concerns. If existing forest need to be cleared, we recommend establishing new trees, forests, or forest vegetation on site or in the general vicinity (e.g., in unused portions of the right-of-way) in such a way as to maintain or improve overall water quality and ecosystem function.

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

Sincerely,

A handwritten signature in blue ink that reads "Karl Didier".

Karl Didier
KD/kd

cc:

Enclosure(s) (0)



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

May 10, 2021

Western Virginia Regulatory Section
Action ID Number: NAO-2021-00813

Ms. Roya Pardis
Power Engineers, Inc.
11 S. 12th Street, Suite 315
Richmond, Virginia 23219

Dear Ms. Pardis:

This letter is in response to your request for an environmental review of the Fieldale-Ridgeway Transmission Line Rebuild Project, dated March 17, 2021. The proposed project includes rebuilding the existing Fieldale-Dan River 138 kilovolt (kV) Transmission Line between the Fieldale, Sheffield, and Ridgeway substations. The project area is in and near the right-of-way of the existing line in Henry County, Virginia. This project has been assigned Action ID Number: NAO-2021-00813; 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 may 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.

Western Virginia Regulatory Section
NAO-2021-00813

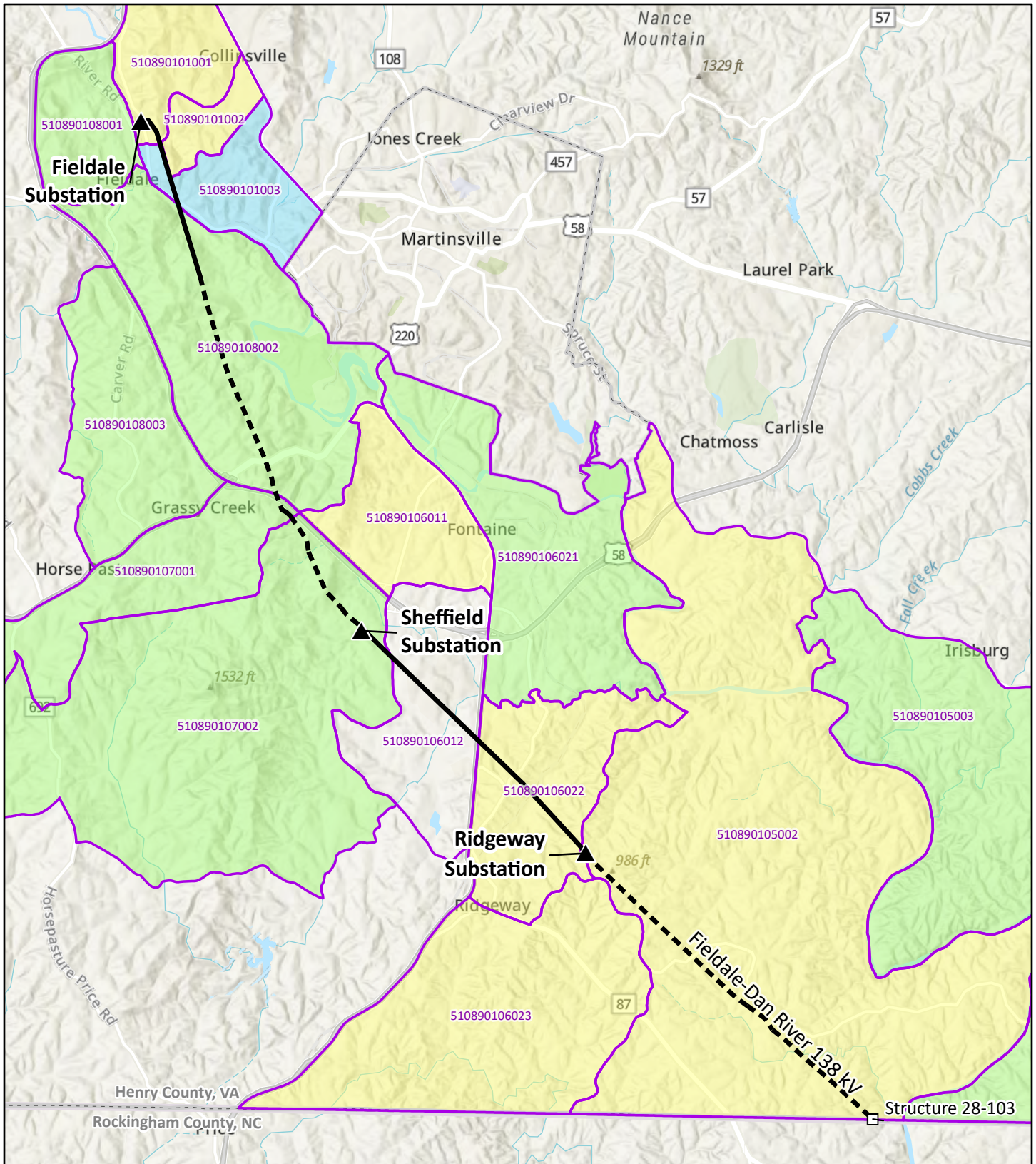
Sincerely,

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

Dana Heston
Environmental Scientist
Western Virginia Regulatory Section

cc: Shawn Crist, Virginia Department of Environmental Quality

Attachment G: Environmental Justice Communities



Identified EJ Populations

- CBG with Persons of Color Population >38%
- CBG with Low-Income Population >= 30%
- CBG with Low-Income Population >= 30% and Persons of Color Population >38%
- Census Block Group (CBG) Within 1 Mile

- ▲ Existing AEP Substation
- Existing AEP Structure
- Fieldale-Dan River 138 kV Rebuild Parallel to or Near the Existing ROW, on New ROW
- Fieldale-Dan River 138 kV Rebuild on Existing Centerline
- County/State Boundary

Henry County, Virginia

Author: jhumiston
Project: 159105

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

October 28, 2021

Project Location

Environmental Justice Communities
Siting Study Attachment G

Fieldale to Ridgeway 138 kV Rebuild Project
PUR-2021-00219

Appalachian Power

0 1.5 3
Miles

VDEQ SUPPLEMENT

Fieldale to Ridgeway 138 kV Rebuild Project

SCC Case No. PUR-2021-00219

Henry County, Virginia

Prepared For:

Appalachian Power Company

Prepared by:

POWER Engineers, Inc.

November 2021

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 Fieldale to Ridgeway 138 kilovolt Rebuild Project by the VDEQ and other relevant agencies.

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1. PROJECT DESCRIPTION

Appalachian Power Company (Appalachian or the “Company”) is planning to rebuild an existing 138 kilovolt (kV) transmission line due to the deteriorated condition, performance, and risk associated with the asset, which was originally built in the 1940’s. The Fieldale to Ridgeway 138 kV Rebuild Project (the “Project”) consists of rebuilding approximately 15 miles of the existing Fieldale – Dan River 138 kV Transmission Line between the Fieldale, Sheffield, and Ridgeway substations and to structure 28-103 near the Virginia/North Carolina (VA/NC) border. The Project is in the southeastern extents of the Company’s service territory and is an interconnection with Duke Energy Carolinas, LLC or Duke Energy. The Project will end at the VA/NC border and will not extend into Duke Energy’s service territory.

The existing 138 kV line was constructed as a single-circuit transmission line in 1949 primarily using a combination of wood H-frame and wood three-pole structures, which are now over 70 years old. The transmission line will be rebuilt primarily using single-circuit steel H-frame structures and single-circuit monopole structures; however, final structure types will be dependent on final engineering and additional studies. The anticipated heights of the proposed structures (excluding the lattice tower structures) on the Project range between 55 and 85 feet, with an average structure height of 67 feet. Lattice towers are currently used across the Smith River and modern lattice towers will be used for the rebuild in this location to accommodate longer spans. The transmission line will be rebuilt within or near the existing 100-foot-wide right-of-way (ROW) depending on constructability and outage constraints.

Between the Company’s Fieldale Substation and existing structure 28-38A, the transmission line section to be rebuilt is approximately 6.3 miles long, of which 2.1 miles will be rebuilt within the existing ROW and 4.2 miles will be rebuilt parallel to or near the existing ROW. An approximately 0.3-mile long portion of the transmission line will be reconducted using existing structures to match the capacity of the rebuilt transmission line. Between existing structure 28-41A and the Ridgeway Substation, the 138 kV transmission line section is approximately four miles long and will be rebuilt within the existing ROW. Between the Ridgeway Substation and existing structure 28-103 near the Virginia/North Carolina border, the transmission line section is approximately 4.5 miles long and will be rebuilt parallel to or near the existing ROW. The Project will largely be rebuilt within or parallel to the existing transmission line ROW; however, there are two minor deviations from the existing centerline to avoid constraints. No alternative routes were considered for the Project and no substations are to be built or expanded as a result of the Project.

The Company’s application to the Virginia State Corporation Commission (SCC), describes the overall need and necessity for the Project (SCC Case No. PUR-2021-00219).

2. ENVIRONMENTAL ANALYSIS

The Company and POWER Engineers, Inc. (POWER) solicited input from 29 federal, state, and local agencies and/or officials regarding the Project. Responses to the Project were received from 10 representatives of various federal, state, and local agencies and are included in Attachment F to the Siting Study in Volume 2 of the Application. POWER also obtained relevant environmental data from field reconnaissance (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 would occur, but kept at a minimum. No permanent impacts on air quality are anticipated, and temporary impacts will only last the duration of the construction phase. The Company does not expect to burn cleared material but, if burning becomes necessary, the Company will coordinate with the responsible locality to obtain permits and will comply with conditions imposed by the locality. The Company's tree-clearing methods can be found in Section II.A.7 of the Response to Guidelines in Volume 1 of the Application.

B. Water Source

The Project is located in four sub-watersheds: Smith River – Beaver Creek (Hydrologic Unit Code [HUC]12 030101030801); Marrowbone Creek (HUC12 030101030802); Smith River – Mulberry Creek (HUC12 030101030803); and Smith River – Fall Creek (HUC12 030101030807). The Project is located in the Upper Dan sub-basin (HUC8 03010103). No water source is required for the transmission line operation.

The Company and POWER solicited comments from various environmental agencies in a letter and Project map dated March 17, 2021. In a letter received on April 23, 2021, the Virginia Department of Health's Office of Drinking Water noted receipt of the letter and no concerns related to the Project.

A project review request was completed by the Virginia Department of Conservation and Recreation's (VDCR) Natural Heritage Program on April 23, 2021. Per the VDCR, the Smith River – Jordan Creek Stream Conservation Unit is located in the Project area and has been given a biodiversity ranking of "very high significance" (B2). The Project does not cross Jordan Creek, but does cross the Smith River at the existing ROW location, and therefore minimal impacts are anticipated to the stream conservation unit. South of the Fieldale Substation, the Project crosses the Smith River, which is a United States Army Corps of Engineers (USACE) and Virginia Marine Resources Commission navigable waterway. A response was received from USACE on May 10, 2021 stating the Project may result in discharges of dredged and/or fill material into waters of the United States, and is subject to the permitting requirements of Section 404 of the Clean Water Act (33 Code of Federal Regulations [C.F.R.] 323). No response was received from the Virginia Department of Environmental Quality (VDEQ) Office of Wetland and Stream Protection, VDEQ Blue Ridge Regional Office, or the Virginia Marine Resources Commission regarding the Project.

Responses from the Virginia Department of Health's Office of Drinking Water, VDCR, and USACE in regard to water sources are 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 and no response was received from the VMRC. A desktop wetland and stream delineation report were prepared in November 2021 and identified potential wetlands and streams for the Project (Attachment 2.D.1). The desktop features were identified within the typical 100-foot-wide ROW for the approximately 15-mile portion of the Fieldale – Dan River 138 kV Transmission Line to be rebuilt. The results of the desktop wetland and stream delineation report are briefly summarized below.

The tables below show the criteria used to determine the wetland and stream probability within the typical 100-foot-wide ROW for the Project. The current potential streams and wetlands were assigned a probability of low potential, moderate potential, or high potential of being a regulated resource.

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 NWI wetlands, NHD streams, hydric soils, or a regulated floodplain.	Streams identified with NHD and aerial imagery (color and CIR).
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.	Streams identified with aerial imagery (color and CIR) and/or topography combined with one other indicator such as NWI wetlands, county or city stream data, or hydric soils.
Low	Areas identified as wetland with topography and aerial photography only.	Areas identified as streams with topography or aerial photography only.

The Proposed Route for the Fieldale to Ridgeway 138 kV Rebuild Project is approximately 15 miles long and is largely within or parallel to the existing transmission line ROW. The Proposed Route includes two minor deviations from the centerline in order to minimize impacts to homes, outbuildings and a cemetery. Within an assumed 100-foot-wide ROW, the desktop wetland and stream delineation identified 17 potential wetlands (2.89 acres total) and 71 potential streams (11,765 linear feet total). The results are summarized in the table below and provided in Attachment 2.D.1.

PROBABILITY	POTENTIAL WETLAND/STREAM CLASSIFICATION*	ESTIMATED NUMBER OF OCCURRENCES	ESTIMATED ACREAGE/LINEAR FEET WITHIN ROW
High	PSS, PEM/PFO	3	0.75 acre
	Streams	24	3,646 feet
Moderate			

PROBABILITY	POTENTIAL WETLAND/STREAM CLASSIFICATION*	ESTIMATED NUMBER OF OCCURRENCES	ESTIMATED ACREAGE/LINEAR FEET WITHIN ROW
	PFO, PSS, PEM	10	1.80 acres
	Streams	18	3,883 feet
Low			
	PFO, PSS, PEM	4	0.34 acre
	Streams	29	4,236 feet
	Wetland Total	17	2.89 acres
	Stream Total	71	11,765 feet

Based on a review of the desktop delineation, the Proposed Route between the Fieldale, Sheffield, and Ridgeway substations and existing structure 28-103 near the VA/NC state border will result in minimal impacts. The proposed structures will generally be located near their existing locations and away from the desktop delineated stream and wetland features, as shown in Attachment B to the desktop delineation. The Proposed Route will largely be rebuilt within or parallel to the existing 100-foot-wide ROW, so any stream or wetland features that are crossed can likely be spanned or avoided during construction. A field delineation will be required to locate jurisdictional features located in this desktop analysis.

In general, temporary and permanent impacts to wetlands and streams during construction of transmission lines can be avoided through strategic placement of transmission structures and foundations to minimize impacts to regulated resources. 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 through the use of timber mats and impacts are often temporary.

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’s) National Priority List (NPL); the USEPA’s Superfund Enterprise Management System; the USEPA’s Resource Conservation and Recovery Act Information System (RCRA); the USEPA’s Toxics Release Inventory (TRI); the VDEQ’s Solid Waste Management Facilities; and the VDEQ’s Voluntary Remediation Program. 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 August 2021) identified no NPL sites in proximity to the Project. The RCRA database (database last updated August 2021) 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 72 active RCRA facilities in Henry County; however, the closest active RCRA facility to the Project is 0.3 mile from the Proposed Route and will not be impacted by the Proposed Route ROW (RCRAInfo). The TRI database (database last updated in 2019) includes information about toxic

chemical releases and pollution prevention activities reported by industrial and federal facilities. The TRI database identified a total of 10 TRI facilities within 15 miles of the Fieldale Substation, encompassing the Project area. The closest TRI facility is located 1.5 miles from the Proposed Route and will not be impacted by the Project.

There are seven convenience centers located in Henry County and operated by the Henry County Refuse Department. The nearest convenience center site is located approximately two miles from the Proposed Route and will not be impacted by the Project. There are four Voluntary Remediation Program (VRP) sites in proximity to the Project area according to VDEQ's VRP database (last updated in July 2021). The closest VRP site is located 1.4 miles from the Proposed Route and will not be crossed or impacted by 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 VDEQ. The Proposed Route predominantly crosses forested, agricultural, recreational, residential, and commercial land uses within or parallel to 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 in October 2021. Two USFWS-listed species were identified to potentially occur within the Project area. The northern long-eared bat is listed as threatened and the Roanoke logperch is listed as endangered. The IPaC is included as Attachment 2.F.1 to this supplement.

The Company did not receive comments from the Virginia Department of Wildlife Resources (VDWR) on the Project; however, the VDWR's online mapper was used to review sensitive species potentially located within an eight-mile radius from a central location along the Proposed Route. Four USFWS-listed species (James spiny mussel, Roanoke logperch, bog turtle, and northern long-eared bat) and 12 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). 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.

According to the letter received from the VDCR on April 23, 2021, the Project will not affect any documented state-listed plants or insects. There are no State Natural Area Preserves noted under VDCR's jurisdiction in the Project vicinity. A total of 12 state-listed species could occur within the Project area based on the VDWR list. The full list can be found in Attachment 2.F.2 and in the below table.

VDWR-Listed Species within 8 miles of Project	
SPECIES NAME	STATE STATUS
Northern long-eared bat*	Threatened
Roanoke logperch*	Endangered
Bog turtle	Endangered
James spiny mussel	Endangered
Little brown bat	Endangered
Tri-colored bat	Endangered
Spirt supercoil	Endangered
Peregrine falcon	Threatened
Loggerhead shrike	Threatened
Atlantic pigtoe	Threatened
Orangefin madtom	Threatened
Migrant loggerhead shrike	Threatened

*USFWS-listed species identified in the IPaC (generated in October 2021).

Ecological core areas were identified in the Project area based on a letter received from the VDCR's Division of Natural Heritage on April 23, 2021. 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. A review of the VDCR's Natural Heritage Data Explorer identified ecological cores ranked with a biodiversity ranking of C3, C4, and C5. The Project crosses one "High" C3 area, four "Moderate" C4 areas, and a majority of "General" C5 core areas. The Project will be constructed primarily within or parallel to 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 also 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:

- Develop and implement an invasive species plan including an invasive species inventory for the Project based on the current VDCR Invasive Species List from VDCR's website and methods for treating the invasive species.
- Implement ROW restoration and revegetation practices that include native species in a mix of grasses and forbs as well as a monitoring and adaptive management plan for unsuccessful restoration efforts.

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

In September and October 2021, POWER conducted a Pre-Application Analysis of cultural resources for the Project in support of the Virginia SCC application. The background research conducted as part of this analysis was designed to identify all previously recorded cultural resources using the tiered study areas outlined within the Virginia Department of Historic Resources’ (VDHR) Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (2008). Archival research of previously recorded historic resources and field reconnaissance was part of the analysis and is summarized below.

RADIAL BUFFER (MILES)	CONSIDERED RESOURCES	PROPOSED ROUTE
0.0 to 1.5	National Historic Landmarks	None
0.0 to 1.0	Above resources, and; NRHP-listed, Battlefields, Historic Landscapes (e.g., Rural Historic District)	Fieldale Historic District (VDHR# 044-5173) Virginia Home (VDHR# 044-5010) Fieldcrest Lodge (VDHR# 044-5166) Bellevue (VDHR# 044-0002) Ingleside Place (VDHR# 044-0013)
0.0 to 0.5	Above resources, and; NRHP-eligible or potentially eligible (determined by VDHR)	Fieldale Elementary School (Contributing resource to VDHR# 044- 5173) Copeland House (Contributing resource to VDHR# 044- 5173) Odell Farm (VDHR# 044-5490)
0.0 (within ROW)	Above resources, and; Archaeological sites	None

There are five National Register of Historic Places (NRHP)-listed architectural sites located within one mile of the Proposed Route at its nearest location. Based on field reconnaissance, the existing transmission line and proposed Project is visible from various locations within the Fieldale Historic District (VDHR# 044-5173); however, multiple existing buildings, unrelated transmission and distribution lines, and a substation are in the foreground and viewshed of the district. Within the Fieldale Historic District, there is one individually NRHP-listed resource and two individually NRHP-eligible resources. The individually listed Virginia Home (NR-00000495 / VDHR #044-5010) is located approximately 0.4 mile west and is not currently in the viewshed of the existing transmission line due to intervening vegetation. After the Project is rebuilt, it is expected the transmission line would continue to not be visible and therefore no impact is anticipated to the NRHP-listed Virginia Home. The individually eligible Fieldale Elementary School (VDHR #044-5168) and individually eligible Copeland House (VDHR #044-5179) are located approximately 0.5 mile west of the Project at their nearest location. The Project is visible from the Fieldale Elementary School; however, due to the distance, existing utility infrastructure, and partial intervening vegetative cover, the proposed height increases for the Project represents a minimal change to the existing viewshed. The Project is not visible from the Copeland House and due to the distance and the intervening building and vegetation, providing partial cover, the rebuilt line will continue to not be visible from the property and thus no impact is anticipated as a result of the Project. Overall, it is anticipated the Project will have no more than a minimal impact on the NRHP-listed Fieldale Historic District and its contributing resources within, which include eligible sites.

The NRHP-listed Fieldcrest Lodge (VDHR# 044-5166) property is crossed by the Project at its existing location, but the building is located approximately 0.2 mile west of the Proposed Route. Based on field reconnaissance and available elevation data, the Fieldcrest Lodge/Marshall Field & Company Clubhouse buildings will have no view of the Project; however, the Project may be visible from the northern portion of the historical property (away from the buildings/structures) after seasonal abscission. Two NRHP-listed resources located between the Sheffield and Ridgeway substations, Belleview (VDHR# 044-0002) and Ingleside Place (VDHR# 044-0013), are located approximately 0.8 and 0.2 mile from the nearest point of the proposed Project, respectively. The Belleview is not currently visible from the Project due to the intervening distance, surrounding vegetation, and topography. A line of sight analysis determined the Project could be visible after seasonal abscission as many of the trees along the intervening land and terrain may not entirely block line of sight after seasonal abscission. No impact is anticipated on the Ingleside property given the intervening terrain and vegetation, which obstructs the view of the Project.

No National Historic Landmarks are within 1.5 miles of the Proposed Route. No previously surveyed archaeological sites or cemeteries are located within the typical 100-foot-wide ROW of the Proposed Route. In addition, the potentially NRHP-eligible Odell Farm (VDHR# 044-5490) is located approximately 0.4 mile northeast of the Project at its nearest location. The Odell Farm will not have a view of the Project due to trees and intervening topography and no impact is anticipated for the potentially eligible resource. Refer to Attachment 2.H.1 for the Pre-Application Analysis for historical resources.

I. Chesapeake Bay Preservation Areas

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

J. Wildlife Resources

As noted in Section 2.F, two USFWS-listed species (northern long-eared bat and Roanoke logperch) were identified by the USFWS to potentially occur within two miles of the Proposed Route; however, two additional USFWS-listed species (James spiny mussel and bog turtle) 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. The Company will coordinate with the appropriate agencies to determine whether surveys are necessary and to minimize impacts wildlife resources. The Project will primarily be constructed within or near the existing ROW for most of its length, minimizing habitat fragmentation and tree clearing to the extent possible. Minimal tree clearing will be required in locations where the Proposed Route is within the existing ROW to maintain the typical 100-foot-wide ROW and where 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, recreational, residential, and commercial land uses. The Project will be constructed predominantly within or parallel to the existing ROW. As a result, minimal impacts are anticipated to recreation, agricultural, and forest resources.

No federal or state parks are crossed by the Project. The Proposed Route for the Project crosses the Smith River and Henry County's Fieldale Trail and River Access easement area at the existing ROW location to minimize recreational and visual impacts. The Project does not cross any designated state scenic rivers; however, the section of the Smith River crossed by the Proposed Route, approximately one mile south of the existing Fieldale Substation, is designated as a potential qualified scenic river. As such, additional visual impacts to the river and recreational trail are not expected, as the line will span high above the resources and have a similar character as the existing facilities.

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. The Project Team solicited input from the Virginia Outdoors Foundation and determined three conservation easements are within two miles of the Project, according to a letter received on April 15, 2021. No existing and proposed Virginia Outdoors Foundation easements are crossed by the Project.

The Proposed Route has approximately 84 acres of either prime and unique farmland or farmland of statewide importance located within the ROW based on United States Department of Agriculture Natural Resources Conservation Service ("NRCS") Soil Survey Geographic Database ("SSURGO"). Based on NRCS data, approximately 30 acres of pasture/rangeland or cropland is crossed by the Proposed Route, and at or near the existing ROW. The Proposed Route crosses agricultural areas in

or near existing ROW locations and avoids significant diversions on properties; therefore, it is not expected that the Project will permanently impact farmland.

The Project will primarily be constructed within or near the existing ROW, minimizing habitat fragmentation and tree clearing to the extent possible. Minimal tree clearing will be required in locations where the Proposed Route is within the existing ROW to maintain the typical 100-foot-wide ROW and where danger trees or other vegetation that may be located within or immediately adjacent to the ROW. To minimize outage constraints, the Proposed Route parallels the existing ROW largely on timbering properties where human environment impacts can be minimized. In a letter received from the Virginia Department of Forestry (VDOF) on April 30, 2021, no major concerns or easement areas were identified with the Project and noted the use of existing ROW. 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.

L. Use of Pesticides and Herbicides

When herbicides are used to maintain the Company's transmission ROW, they are registered with the USEPA and with the VDACS. All herbicides will be used in accordance with label and manufacturer directions. Regarding herbicide applications (additionally, see Section II.A.7 of the 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 and used in accordance with herbicide label and manufacturer directions around streams, ponds, springs, wetlands, water supply wells, channelized drainage ways (perennial or intermittent), and karst features.

M. Geology and Mineral Resources

According to the Division of Geology and Mineral Resources Interactive Geologic Map, the Project is located in the Piedmont physiographic province of Virginia and consists primarily of gravel and sand, granite, and metamorphic rock. The Company requested comments on the Project from the Virginia Departments of Mines, Minerals, and Energy in a letter dated March 17, 2021, but no response was received regarding karst, geology, and mineral resources. According to their interactive map, no sinkholes, active mines or stone quarries are crossed by the Project. The Company does not anticipate that the Project will result in negative impacts on the geology or mineral resources.

N. Transportation Infrastructure

The width of the existing transmission line ROW is approximately 100 feet and is currently maintained for operation of the existing transmission facilities. The Project largely uses the existing ROW or parallels the existing ROW to minimize outages and avoid impacts as necessary. Between the Fieldale and Ridgeway substations, the Project crosses three United States (U.S.) highways, including U.S. Routes 58 Business (A.L. Philpott Highway), 58 and 220 Bypass (William F. Stone Highway), and 220 (Greensboro Road) and one state highway, State Route 57 (Appalachian Drive), twice. The Proposed Route crosses highways at or near existing locations to avoid constraints or maximize constructability.

The Siting Team contacted the Virginia Department of Transportation (VDOT) and reviewed the Martinsville Southern Connector Study, , which evaluated a corridor for improving U.S. Route 220 from the North Carolina state line to the William F. Stone Highway (U.S. Route 58/220 Bypass). The preferred alternative presented by VDOT crosses the Project near the Sheffield Substation; however, discussions with VDOT staff determined the final road alignment will not impact the Sheffield Substation and their project is pending funding. Given the discussions with VDOT, the Siting Team determined rebuilding in or near the existing ROW south of Route 58 and near Sheffield Substation could minimize potential future relocation needs. Additionally, the Siting Team obtained input from the VDOT Martinsville and Salem residencies on April 7 and 12, respectively, and noted their designated road crossings and recommended traffic plans for construction. Accordingly, the Company will coordinate with VDOT during the permitting phase of the Project to determine the extent of land use permits, construction entrances, and traffic control plans needed for the Project. In addition, the Proposed Route crosses two railroads at existing ROW crossing locations between the Fieldale and Ridgeway substations. The Company will continue to coordinate with Norfolk Southern regarding the crossing locations prior to construction.

The Company utilized the Federal Aviation Administration's ("FAA") Obstruction Evaluation/Airport Airspace Analysis tool to review the proposed structure locations. Based on preliminary engineering, the Company does not expect to file Form 7460 for any structures. The FAA's website was reviewed to identify airports within 10 miles of the Project. Based on this review, five airports or heliports were identified: Sovah Health Martinsville helipad (approximately three miles); Gravelly Airport (approximately five miles); Lory Lester Airpark (approximately five miles); Blue Ridge Regional Airport (approximately six miles); and Covington Airport (approximately eight miles). A letter received from the Virginia Department of Aviation on April 22, 2021 indicated that no portion of the Project is located within 20,000 linear feet of a public use airport. The Company will continue to 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**

November 23, 2021

APPALACHIAN POWER COMPANY

Fieldale to Ridgeway 138 kV Rebuild Project

SCC Case No. PUR-2021-00219

Henry County, Virginia

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

PROJECT NUMBER:

159105

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ACRONYMS AND ABBREVIATIONS

Appalachian Power	Appalachian Power Company
CIR	Color Infrared
CPCN	Certificate of Public Convenience and Necessity
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	Fieldale to Ridgeway 138 kV 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
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VDEQ	Virginia Department of Environmental Quality
VGIN	Virginia Geographic Information Network
WOTUS	Waters of the United States

1.0 INTRODUCTION

Appalachian Power Company (Appalachian or the “Company”) is planning to rebuild an existing 138 kV (kilovolt) transmission line due to the deteriorated condition, performance, and risk associated with the asset, which was originally built in the 1940’s. The Fieldale to Ridgeway 138 kV Rebuild Project (the “Project”) consists of rebuilding approximately 15 miles of the existing Fieldale – Dan River 138 kV Transmission Line between the Fieldale, Sheffield, and Ridgeway substations and to existing structure 28-103 near the Virginia/North Carolina (VA/NC) border. The Project is in the southeastern extents of the Company’s service territory and is an interconnection with Duke Energy Carolinas, LLC. The Project will end at the VA/NC border and will not extend into Duke Energy Carolinas, LLC’s service territory. The location of the proposed Project is shown in Attachment A.

The existing 138 kV line was constructed as a single-circuit transmission line in 1949 primarily using a combination of wood H-frame and wood three-pole structures, which are now over 70 years old. The transmission line will be rebuilt primarily using single-circuit steel H-frame structures and single-circuit monopole structures; however, final structure types will be dependent on final engineering and additional studies. Lattice towers are currently used across the Smith River and modern lattice towers will be used for the rebuild in this location to accommodate longer spans. The transmission line will largely be rebuilt in or near the existing 100-foot-wide right-of-way (ROW) depending on constructability and outage constraints.

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 (CPCN), which will be filed with the Virginia State Corporation Commission (SCC), which approves or denies such applications. This report is included as Attachment 2.D.1 in the Virginia Department of Environmental Quality (VDEQ) Supplement, located in Volume 2 of the Application (SCC Case No. PUR-2021-00219).

The purpose of the Desktop Wetland and Stream Delineation Report is to identify potential federally-regulated waters of the United States (WOTUS) within the typical 100-foot-wide ROW. No alternative routes were identified for the Project (see the Fieldale to Ridgeway 138 kV 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 GIS data and mapping sources reviewed include the following:

- United States Geological Survey (USGS), National Geographic Society, i-cubed, topographic mapping (USGS 2011).
- Virginia Geographic Information Network (VGIN) Orthoimagery (VGIN 2019).
- Color Infrared (CIR) aerial imagery and orthophotography (Virginia Base Mapping Program 2018).
- Google Earth color aerial photography, including historical aerial data (Google Earth, 1995, 2002, 2017, 2018, 2021).
- National Hydrography Dataset (NHD) stream and river data (United States Geological Survey [USGS] 2021).
- Henry County, Virginia Streams, viewed on the USGS National Map viewer (Henry County 2018).
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (USFWS 2020).
- Natural Resources Conservation Service (NRCS) Soil Survey of Henry County, Virginia (NRCS 2010).
- NRCS Web Soil Survey for Henry County, Virginia (NRCS 2021).
- Federal Emergency Management Agency (FEMA) Riverine Mapping and Floodplain Boundaries Guidance (FEMA 2020).

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 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 systems – Marine, Estuarine, Riverine, Lacustrine, and Palustrine. The Palustrine system is the only type of wetland system likely to be present within the study area and is defined as including all nontidal wetlands dominated by trees, shrubs, persistent emergent herbaceous plants, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean driven-derived salts is below 0.5 percent (Cowardin et al. 1979). Cowardin wetland types likely to be encountered along the proposed ROW fall into the following four classifications:

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

2.3 Stream Definitions

Streams are described by the United States Environmental Protection Agency 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 along the proposed ROW of the transmission line route, POWER biologists utilized available desktop data for this report.

2.4.1 Aerial Imagery and Topographic Mapping

The CIR aerial imagery (VA Base Mapping Program 2018), current and historical aerial photography (Google Earth, 1995, 2002, 2017, 2018, 2021), VGIN orthoimagery (2019), and USGS topographic data (USGS 2011) were used to help determine the location and size of potential wetland and stream resources within the proposed 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 B.

2.4.2 National Wetland Inventory Dataset

POWER reviewed NWI mapping to help identify potential wetland areas. NWI maps were published by the USFWS and depict probable wetland areas based on stereoscopic analysis of high-altitude aerial photographs and analysis of infrared bands from remotely sensed imagery. Therefore, NWI mapping reflects conditions during the specific year and season the data was acquired and should not be considered precise, field-verified wetlands (USFWS 2020). 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 B.

2.4.3 National Hydrography Dataset

The USGS NHD (USGS 2021) was used to identify potential and known streams within the Project ROW. The USGS 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 USGS NHD shows the general locations of streams, rivers, and open waters, and provides insight into the general location of waters (USGS 2021). NHD mapping is included on the Desktop Wetland and Stream Delineation figures included in Attachment B.

2.4.4 Local Stream Datasets

The Henry County, VA Streams dataset (Henry County 2018) were viewed on the USGS National Map viewer and were used to help identify potential streams within the Project ROW. These datasets are a compilation of records, information, and data obtained from various sources and do not represent verified surveys and are not intended to be used as such. Although not field verified, the local stream datasets used in conjunction with aerial imagery, topographic maps, and the NHD layer provides insight into the general location of waters.

2.4.5 Federal Emergency Management Agency Floodplain Dataset

The FEMA floodplain dataset was reviewed to identify floodplains within the Project ROW. The FEMA Riverine Mapping and Floodplain Boundaries Guidance (FEMA 2020) provides digital spatial data representing floodplains associated with recorded streams (see Section 2.4.3 on USGS NHD streams) as well as riverine mapping. Floodplain boundaries are divided into flood insurance rate zones that are rated between 100-year and 500-year floodplains. Both 100-year and 500-year are considered areas of moderate flood hazard. All remaining areas fall under the terms of minimal flood hazard (FEMA 2020). Floodplain mapping is included on the Desktop Wetland and Stream Delineation figures included in Attachment B.

2.4.6 Soil Survey Mapping

NRCS digital soil survey data for Henry County, VA was used to locate areas of hydric soils, which are typically found in wetlands (NRCS 2010). The NRCS soil survey group soil map contains 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 B. There are four hydric soil areas mapped within the Project ROW, which are shown in Attachment B.

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).
Moderate	Streams identified with aerial imagery (color and CIR) and topography or combined with one other indicator such as NWI wetlands, county or city stream data, or hydric soils.
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 B.

The desktop delineation assumed a 100-foot-wide ROW on the Proposed Route (no Alternative Routes were considered for the Project) to assess potential acreage and linear feet of wetlands and streams, respectively. 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	PSS, PEM/PFO	3	0.75
Moderate	PFO, PSS, PEM	10	1.80
Low	PFO, PSS, PEM	4	0.34
Wetlands Total		17	2.89

TABLE 4 DESKTOP STREAM DELINEATION RESULTS

STREAM PROBABILITY	ESTIMATED NUMBER OF OCCURRENCES	ESTIMATED LINEAR FEET WITHIN ROW
High	24	3,646
Moderate	18	3,883
Low	29	4,236
Streams Total	71	11,765

3.1 Proposed Route Discussion

The Proposed Route is approximately 15 miles long and is largely within or parallel to the existing 100-foot-wide ROW. Between the Fieldale Substation and existing structure 28-103, the ROW of the Proposed Route crosses a total of 71 potential streams and 17 potential wetlands, based on the resources described above. The Proposed Route crosses the desktop delineated wetland and stream features at or near existing locations (Attachment B).

The most recent aerial imagery available for the Project area was from 2017 for the northern section and 2021 for the central and southern sections of the line. 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. Transmission line ROWs are typically maintained aside from steep valleys that can be spanned without clearing; as such, PEM wetlands likely predominate the existing ROW with PSS or PFO wetlands in the unmaintained valleys. 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

Three high probability wetlands, totaling 0.75 acre, were identified within the ROW of the Proposed Route and are crossed at existing locations (Map Tiles 14 and 15 – Attachment B). The high probability wetlands were determined to be likely PSS and PFO wetlands with some PEM characteristics. Given the Proposed Route uses the existing ROW at these locations, impacts to high probability PFO wetlands are minimal as the ROW currently exists; however, field verification would be necessary to confirm that forested conditions have not developed.

A total of 24 high probability streams, totaling 3,646 linear feet, were identified within the ROW of the Proposed Route. The Smith River is crossed at the existing ROW location (Map Tiles 2 and 3) to minimize impacts (approximately 170 linear feet). Other high probability streams are likely perennial channels. Other high probability streams include: Marrowbone Creek, Little Marrowbone Creek, Reds Creek, Daniels Creek, Flanigan Branch, Turkeycock Creek, Stuart Creek, Preston Branch, and Grassy Creek. The ROW of the Proposed Route largely crosses high probability streams at or near existing locations, as identified with the NHD data. Two slight deviations from the existing centerline are considered for the Proposed Route to minimize impacts; one of the deviations potentially crosses a high probability stream near the existing ROW crossing (Map Tile 10). It is expected that all high probability streams will be spanned by the transmission line without permanent impacts.

Moderate Probability

Ten moderate probability wetlands, totaling 1.8 acres, were identified within the ROW of the Proposed Route and are crossed at or near 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 near the ROW. A total of 18 moderate probability streams, totaling 3,883 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.

Moderate probability wetlands were identified around the Smith River and are crossed by the ROW of the Proposed Route (approximately 0.21 acre); however, it is not likely that trees would need to be cleared along the riverbank due to the terrain and field verification would be required (Map Tile 2). Additionally, moderate probability wetlands were identified around Grassy Creek and Marrowbone Creek, which are crossed at existing ROW locations. Based on the available aerial imagery, topography, and NWI data, one wetland within the ROW appears to be an isolated PEM wetland (Map Tile 3); however, it may have a hydrologic connection to other waters via an indistinguishable culvert under a road.

Low Probability

Four low probability wetlands, totaling 0.34 acre, were identified within the ROW of the Proposed Route and include a combination of PEM, PSS, and PFO Cowardin classifications. Given the Project will be rebuilt largely in existing ROW, impacts to low probability PFO wetlands are minimal as the ROW has previously been cleared; however, field verification would be necessary to confirm that forested conditions have not developed. A total of 29 low probability streams, totaling 4,236 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 Fieldale to Ridgeway 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	17	2.89 acres
Stream Total	71	11,765 linear feet

Based on a review of the desktop delineation, the Proposed Route between the Fieldale, Sheffield, and Ridgeway substations and existing structure 28-103 near the VA/NC state border will result in minimal impacts. The Proposed Route will largely be rebuilt within or parallel to the existing 100-foot-wide ROW, so any stream or wetland features that are crossed can likely be spanned or avoided during construction (Attachment B). High probability streams such as the Smith River, Grassy Creek and Marrowbone Creek, are crossed at their existing locations. The Proposed Route crosses a low probability stream at a new crossing location in order to avoid a cemetery (Map Tile 23). One of the slight deviations considered for the Proposed Route (Map Tile 10) crosses two low probability streams and one high probability stream (Map Tile 10) to avoid buildings within the ROW and a pond crossing. Overall, impacts to stream and wetland features can be minimized given the Proposed Route will largely be rebuilt within or parallel to the existing 100-foot-wide ROW.

In general, temporary and permanent impacts to wetlands and streams during construction of transmission lines can be avoided through strategic placement of transmission structures/foundations 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 through the use of 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.

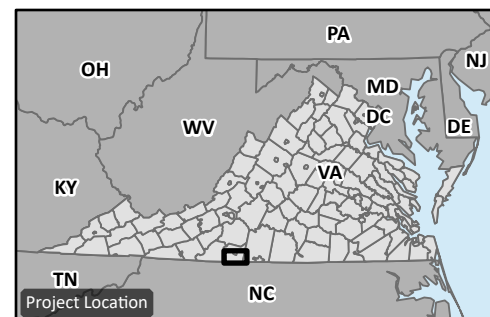
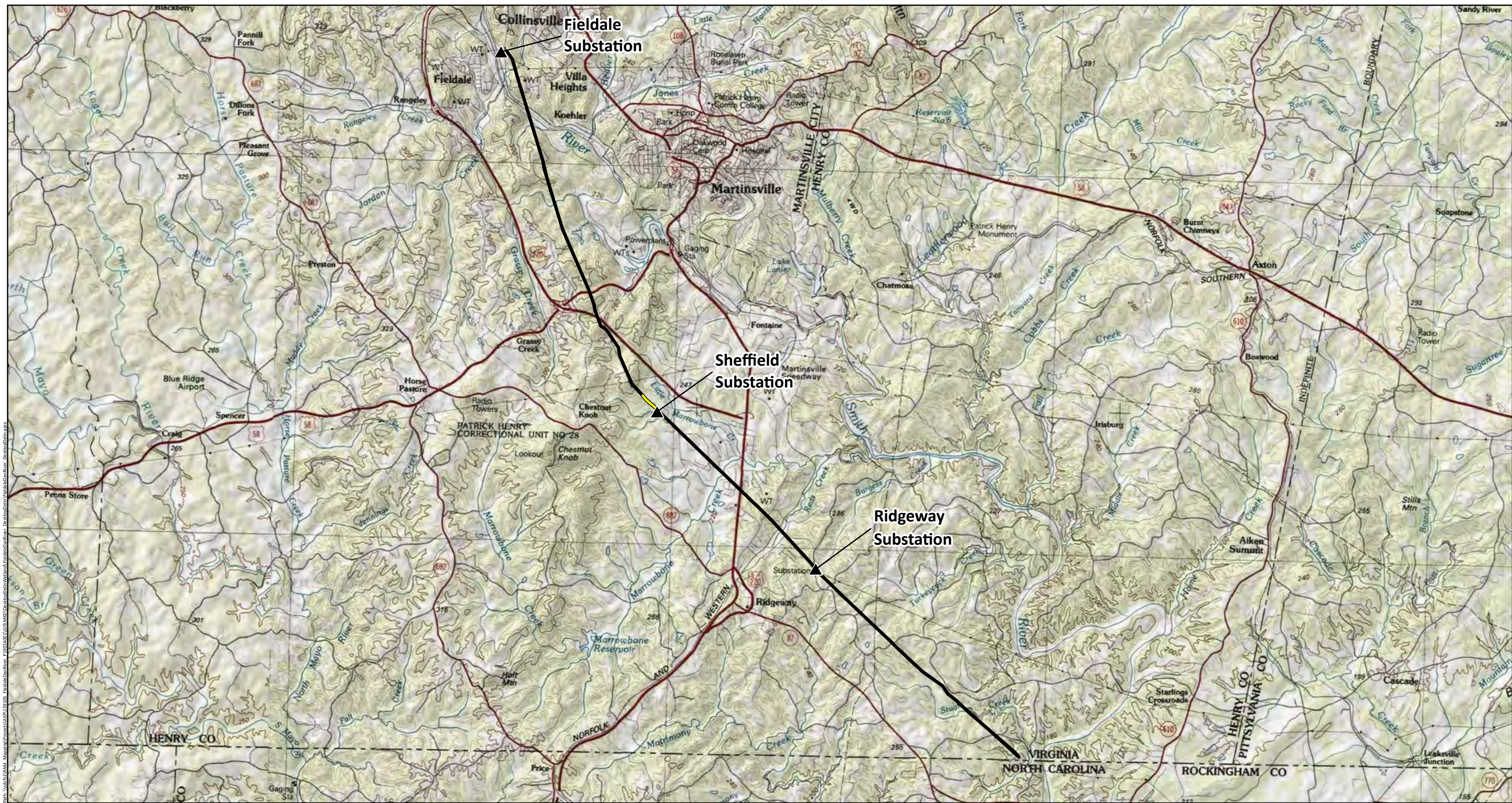
The results of this desktop wetland and stream delineation are intended solely for use as an indication of probable wetlands and streams within the proposed ROW associated with the Project. This analysis is designed for planning purposes only and does not represent the results of an on-the-ground, wetland and stream field delineation. Accurate determination of regulated resource boundaries is only possible through field delineations of wetlands and streams utilizing the USACE wetland delineation manual (Environmental Laboratory 1987), the 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). 2020. Guidance for Flood Risk Analysis and Mappings; Guidance Document 60 - Riverine Mapping and Floodplain Boundaries Guidance. Available at: <http://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping>. Accessed August 10, 2021.
- Google Earth. (1995, 2002, 2017, 2018, 2021). Imagery dates vary by location. Google Earth Pro, Version 7.3.3.7786. Available at: <https://www.google.com/earth/>. Accessed August 11, 2021.
- Henry County. 2018. Virginia Streams. 2018. Viewed on the USGS National Map viewer (<https://apps.nationalmap.gov/viewer/>). Available at: <https://usgs.maps.arcgis.com/home/item.html?id=939ba3d5d5504cd29fecec8b95c584b6>. Accessed August 11, 2021.
- 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.
- N/A. 2021. Web Soil Survey Henry County, Virginia. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed August 12, 2021.
- Natural Resource Conservation Service (NRCS). 2010. Soil Survey of Henry County, Virginia. Available at: https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/virginia/henryVA2010/Henry_VA.pdf.
- 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 Environmental Protection Agency. 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 August 11, 2021.
- United States Fish and Wildlife Service (USFWS). 2020. National Wetlands Inventory (NWI) by state. Available at: <http://www.fws.gov/wetlands/data/State-Downloads.html>. Accessed August 11, 2021.
- United States Geological Survey (USGS). 2021. 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 August 13, 2021.
- United States Geological Survey (USGS). 2011. The National Map, National Geographic Society (NGS), i-cubed. Available at: <https://www.arcgis.com/home/item.html?id=99cd5fbd98934028802b4f797c4b1732>. Accessed August 11, 2021.
- Virginia Base Mapping Program. 2018. CIR Imagery and Orthophotography. Available at: https://gismaps.vdem.virginia.gov/arcgis/rest/services/VBMP_Imagery/VBMP2018_Infrared_WGS/MapServer. Accessed August 12, 2021.
- Virginia Geographic Information Network (VGIN) Orthoimagery. 2019. Available at: <https://vgin.maps.arcgis.com/apps/Viewer/index.html?appid=cbe6a0c1b2c440168e228ee33b89cb38#>. Accessed August 12, 2021.

ATTACHMENT A: PROJECT LOCATION MAP



▲ Existing AEP Substation
 — Proposed Route (Fieldale-Dan River 138 kV Line)
 — 138 kV to be Reconducted

Henry County, Virginia
 Date: 11/5/2021; Author: jhumiston; Project: 159105

0 1.5 3
 Miles

1" = 1.5 miles OVERVIEW

Project Location
 Desktop Wetland and Stream Delineation
 Fieldale to Ridgeway 138 kV Rebuild Project

An AEP Company