

# Greenfield Lee District Station

## General Information

Proposing entity name	Redacted to protect business sensitive information.
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Redacted to protect business sensitive information.
Company proposal ID	Redacted to protect business sensitive information.
PJM Proposal ID	298
Project title	Greenfield Lee District Station
Project description	Construct greenfield Lee District 500 kV station with 6-breaker ring bus. Tap Loudoun – Meadow Brook 500 kV line into Lee District. Tap Front Royal – Morrisville 500kV line into Lee District. Install two 500/230 kV transformers at Lee District. Tap Lucky Hill-Batna 230 kV line: Connect Lucky Hill 230 kV line directly into 500/230 kV XF #1 and Batna 230 kV line directly into 500/230 kV XF #2. Install a 3%, 13 ohm series reactor on Lee District – Batna 230 kV line. (hereinafter, "the Project")
Email	Redacted to protect business sensitive information.
Project in-service date	06/2024
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Redacted to protect business sensitive information.

## Project Components

1. Greenfield Substation Component 1
2. Transmission Line Upgrade Component 1
3. Substation Upgrade Component 1

- 4. Transmission Line Upgrade Component 2
- 5. Transmission Line Upgrade Component 3

## Greenfield Substation Component

Component title	Greenfield Substation Component 1
Project description	Redacted to protect business sensitive information.
Substation name	Lee District Station
Substation description	Construct a new 500/230KV greenfield station having a 6-CB 500KV ring bus that will interconnect the existing 500KV Meadow Brook line, the existing 500KV Front Royal line, the existing 500KV Loudoun line, the existing 500KV Morrisville line, a new 500/230KV transformer and 230KV line position that will interconnect the 230KV Batna line (Note: Batna is a station Dominion intends to construct in the future), and a new 500/230KV transformer and 230KV line position that will interconnect the existing 230KV Lucky Hill line (Note: Lucky Hill is a station Dominion intends to construct in the future). The station will be established on approximately 1822ft x 866ft of property roughly located at GPS coordinates (38.540103, -77.796700) and have a fenced area of 490ft x 785ft. It is assumed that this property will be available for purchase. The Proposing Entity reviewed suitable station locations within 2 miles of the intersection of the existing Lucky Hill-Batna 230kV and Front Royal – Morrisville 500kV lines. Identified constraints within the study area include multiple conservation easements, the Warrenton Military Training Reservation, residential subdivisions, FEMA 100-year floodplains, the proposed Remington Technology Park, expansive woodlots, and the Town of Remington. In addition to avoiding the constraints in the study area above, the proposed location minimizes new visual impacts to the community with existing vegetative screening surrounding the station to the west, south, and east, and a proposed industrial park to the north. In addition, a railroad is located just west of the proposed station and existing 230 and 500kV transmission lines are located to the north, south, and east of the proposed station. The Proposed Lee District Station location also minimizes the length of new transmission line required due to the location being adjacent to the two 500kV existing transmission lines being tapped and 0.4 miles away from the 230kV line tap for the Project.
Nominal voltage	AC
Nominal voltage	500/230

## Transformer Information

	<b>Name</b>	<b>Capacity (MVA)</b>
Transformer	500/230 kV Transformer #1	750

	<b>High Side</b>	<b>Low Side</b>	<b>Tertiary</b>
Voltage (kV)	500	230	13.8
	<b>Name</b>	<b>Capacity (MVA)</b>	
Transformer	500/230 kV Transformer #2	750	
	<b>High Side</b>	<b>Low Side</b>	<b>Tertiary</b>
Voltage (kV)	500	230	13.8
Major equipment description	<p>Construct a new 500/230KV greenfield station having a 6-CB 500KV ring bus and consisting of 6-500KV, 5000A, 63KA CB's; 36-500KV, 5000A, 1-phase motor-operated CB disc. sw. &amp; steel str.; 6-500KV, 4000A, 1-phase motor-operated transf. disc. sw. &amp; steel str.; 12-500KV line CCVT's &amp; steel str.; 6-500KV bus CCVT's &amp; steel str.; 5-500KV, 5000A line traps &amp; steel str.; 5-line tuners; 36-500KV CB arresters &amp; steel str.; 2-500/230KV, 750MVA autotransformers with a 13.8KV tertiary, arresters, and oil containment; 2-230KV, 3000A, 63KA CB's; 4-230KV, 3000A group-operated CB disc. sw. &amp; steel str.; 2-sets of 3-230KV line CCVT's &amp; steel str.; 2-sets of 3-230KV line arresters; 3-230KV, 2000A, 13.04 ohm (3%) air-core reactors &amp; str.; 13.8KV-120/240V AC power system consisting of grounding transformers, PT's, arresters, CB's, disc. sw., fused disc. sw., power cables, transformers, service centers, and AC cabinets; 125VDC power system consisting of 2-700AH batteries, 3-75ADC chargers, and DC cabinets; 4-500KV A-frame style exterior take-off towers; 4-500KV A-frame style interior take-off towers; 29-500KV, 1-phase vertical strain bus support str.; 32-500KV, 1-phase low single insulator bus support str.; 12-500KV, 1-phase low double insulator bus support str.; 46-500KV, 1-phase high single insulator bus support str.; 12-230KV, 1-phase low bus support str.; 12-230KV, 1-phase high bus support str.; 2-230KV phase-over-phase take-off towers; 2-13.8KV, 3-phase tertiary PT str.; 2-13.8KV, 3-phase CB bus tie switch str.; 2-13.8KV, 3-phase dual power cable support str.; 4-13.8KV, 3-phase EHV service center transf. support str.; 1-100ft tall shield wire pole; 12-shield wires; and associated bus jumpers, bus tubing &amp; dampening cable/connectors, insulators, foundations, yard lighting, control cables, conduits, cable trench, and equipment grounding. Install associated relay equipment in a new 16ft x 60ft control house. The station will be established on approx. 1822ft x 866ft of property roughly located at GPS coordinates (38.540103, -77.796700) on agricultural land. The property will be graded for a fenced area of 490ft x 785ft and include 2,502ft of fence, 2-24ft gates, station stone, ground grid, and fence grounding. One (1) access road will be established. It is assumed that this property will be available for purchase and all necessary permits will be available. It is assumed that all necessary outages will be available.</p>		

**Normal ratings**

**Emergency ratings**

Summer (MVA)	3397.000000	3984.000000
Winter (MVA)	3984.000000	4018.000000

Environmental assessment

Land use at the proposed Lee District Station is undeveloped/residential. Based on review of the National Hydrology Dataset and aerial photographs, no streams are located near the proposed station footprint. Upon reviewing aerial photographs, terrain, and NWI wetland layers, wetlands are estimated within the proposed station footprint. The 100-year FEMA floodplain associated with an unnamed tributary of Tinpot Run stream is located on the proposed Lee District Station parcel, but not impacted by the proposed station footprint. Should suitable habitat be identified for the federally threatened Northern Long Eared Bat, time of year restrictions for tree clearing will be adhered to. The proposed site is located within the potential national register boundary for the Rappahannock Station II Battlefield site. A railroad west of the proposed station is shown as a resource deemed eligible for listing on historic register by the Virginia Department of Historic Resources (DHR). Other houses/residences were surveyed around the site but not on the subject property. Archaeological and Architectural surveys will be performed for the Project and coordinated with the DHR. An accompanying .kmz shows the study area and collected environmental constraints in the study area. The Proposing Entity would establish communication with agencies and stakeholders and complete the required environmental field studies including historic (e.g., archaeological and architectural) and natural resources (e.g., protected species and wetlands). The Proposing Entity would comply with all federal, state, and local requirements including storm water regulations (e.g., erosion and sediment control approvals). In addition, the Proposing Entity would file for a Certificate of Public Convenience and Necessity (CPCN) with the Virginia State Corporation Commission (SCC) and obtain all necessary federal, state, and local permits. Since the Project is subject to SCC approval, agency coordination letters will be prepared to solicit input from federal, state, and local agencies or groups that may have interest in the Project. The responses will be reviewed and applied to the preparation of the Siting Study, the Virginia Department of Environmental Quality (VDEQ) Supplement and the SCC Application. Post-construction storm water controls will be implemented for the station as required.

## Outreach plan

Public outreach is a critical component to the Proposing Entity's siting process, so efforts will include properly informing the public; federal, state and local agencies; local governments; and other key stakeholders on the need for, and benefits of, the Project. The Proposing Entity's approach to public outreach is to always be candid and transparent, and to offer a variety of tools and means for impacted parties to engage with our staff. Public outreach also will involve collecting information about landowner properties, which will be considered during the final siting process. Proactive and interactive communication strategies and tools will assist siting efforts by soliciting comments and concerns from persons and entities affected by the Project. These strategies and tools also will assist in garnering support for the line siting process, as well as promote clear communication to landowners during land/ROW acquisition. The Proposing Entity will host one (1) public open house meeting in Remington, Fauquier County, Virginia to engage with the community and collect feedback on the Project. Each landowner within 1,000' of the proposed station and three (3) transmission tap lines will be invited to attend an open house and will be given the opportunity to review detailed Project area maps and provide comment as it relates to the Project and their property. These comments are a key component on refining the Project. The Proposing Entity will also advertise in local newspaper so that community members may participate in the open house. Also, the Proposing Entity will host an interactive website so the public can obtain the same information that's provided at the open house, submit their comments, and receive regular and timely Project updates. Open houses will consist of multiple informational stations set as a workshop-style event, designed to educate the public on different aspects of the Project, including: purpose, need, engineering, structure type, and the Land/ROW acquisitions process. While the Proposing Entity is confident in the route selected, it is important before beginning the Project to obtain public vetting before initiating land/ROW acquisition. This process can identify unique items such as wells, geological formations, and other features which must be considered in selecting the route to acquire land/ROW upon.

Land acquisition plan

The proposed Lee District Station will be sited southeasterly of the Norfolk Southern's parallel railroad tracks running along Remington Road in Fauquier County, Virginia on undeveloped agricultural lands. The tabletop analysis found there were no public lands required for the Project. The private land use is undeveloped agricultural as tabletop analysis found and was verified through the Fauquier County Clerk's Office classification/assessment. The private land requirements include approximately 36.06 acres for the new station site/detention pond/grading and 0.19 of an acre of access road just north of a proposed County road to the new station site. The total acreage for the Project is 36.25 acres to be purchased in fee. Station site and access road placement were chosen to minimize impacting present land uses in the area. The Proposing Entity will use proven land acquisition processes and approaches that have been successfully employed on projects over the years. The Proposing Entity's initial land acquisition step is to verify current ownership by an examination of title, current property tax status, as well as document any liens, and or mortgages. The Proposing Entity will also research the status of the subsurface estate, whether or not it is severed from the surface. Once ownership is established, the Proposing Entity will negotiate with property owners based on the fair market value of the property needed for the station site and access road (both fee purchases). Market data studies and appraisals, both general and for specific tracts, will be conducted to establish values and a basis for acquisition negotiations. Good Faith negotiations must be made with all landowners. Negotiations will be done in an ethical, non-confrontational and non-threatening manner with the landowners. The long term relationship with the landowners is paramount and will be kept in mind in all negotiations and honesty, integrity and professionalism will be displayed at all times. Negotiations will continue as long as practical to reach a voluntary agreement. If, and only if, it becomes evident that a voluntary fee purchase agreement between the Proposing Entity and the property owner cannot be reached, and other viable alternatives do not exist, the Proposing Entity may exercise the right of eminent domain to secure required property through condemnation proceedings.

Construction responsibility

Redacted to protect business sensitive information.

Benefits/Comments

Redacted to protect business sensitive information.

**Component Cost Details - In Current Year \$**

Engineering & design

Redacted to protect business sensitive information.

Permitting / routing / siting

Redacted to protect business sensitive information.

ROW / land acquisition

Redacted to protect business sensitive information.

Materials & equipment

Redacted to protect business sensitive information.

Construction & commissioning

Redacted to protect business sensitive information.

Construction management

Redacted to protect business sensitive information.

Overheads & miscellaneous costs	Redacted to protect business sensitive information.
Contingency	Redacted to protect business sensitive information.
Total component cost	\$62,393,857.00
Component cost (in-service year)	\$68,179,451.26

**Transmission Line Upgrade Component**

Component title	Transmission Line Upgrade Component 1
Project description	Redacted to protect business sensitive information.
Impacted transmission line	Loudoun (DVP)-Meadow Brook (APS) 500 kV
Point A	Loudon 500 kV
Point B	Lee District 500 kV
Point C	Meadow Brook 500 kV
Terrain description	The Project terrain is flat vacant land in Fauquier County, Virginia to tap the existing Loudoun – Meadow Brook 500kV line and connect it to the proposed Lee District Station. Elevation along the proposed route ranges from approximately 281’ to 291’ above sea level, with an average elevation of 285’.

**Existing Line Physical Characteristics**

Operating voltage	500
Conductor size and type	Unknown
Hardware plan description	No existing hardware would be used. The cut-in would deadend near existing lattice towers and turn the 500kV line in/out of proposed Lee District station. Assuming there is OPGW on the existing line, the fiber could be terminated with a splice box at each tower location. The length of OPGW would match the proposed line length of 0.23 miles.
Tower line characteristics	The condition of the existing line is assumed to be in good working order based on the age determination from aerial imagery (less than 20 years). Structure loading at adjacent structures would remain unchanged due to proposing structure locations on centerline and near existing tower locations.

## Proposed Line Characteristics

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	500.000000	500.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	4678.000000	4678.000000
Winter (MVA)	4925.000000	4925.000000
Conductor size and type	2 bundled – 1272 kcmil 54/19 Strand “Pheasant” ACSS	
Shield wire size and type	0.646” diameter 96 ct. OPGW. 159 kcmil 12/7 Strand “Guinea” ACSR (second shield).	
Rebuild line length	The Project requires a 0.23 mile cut-in of the existing 500kV AC overhead transmission line.	
Rebuild portion description	<p>The Proposing Entity reviewed locations for the two (2) 500kV loops in and out of the proposed Lee District Station. The proposed tap line routes are direct 0.1 mile routes (0.23 miles total) tapping the existing Loudon – Meadow Brook 500kV line adjacent to the proposed Lee District Station along undeveloped residential land. The locations of the tie lines were evaluated with respect to potential impacts on the surrounding community, environment, constructability, operations and maintenance considerations, and cost effectiveness. No streams or FEMA floodplain impacts are shown along the Proposed Route. The tap lines cross portions of National Wetlands Inventory (NWI) wetlands. Following field studies, wetland data will be digitized and provided to engineering so that pole locations are sited to maximize avoidance of sensitive resources. For example, poles will be placed outside of or span wetlands to the greatest extent possible. Tree clearing is anticipated to be minimal and mostly consist of low growth/shrub vegetation. Impacts to the federally threatened Northern Long Eared bat are not anticipated. However, should suitable habitat be identified, time of year restrictions for tree clearing will be adhered to. The proposed site is located within the potential national register boundary for the Rappahannock Station II Battlefield site. A railroad west of the proposed station is shown as a resource deemed eligible for listing on historic register by the Virginia Department of Historic Resources (DHR). Other houses/residences were surveyed around the site but not on the subject property. Archaeological and Architectural surveys will be performed for the Project and coordinated with the DHR. No electric transmission line or pipeline crossings were identified. An accompanying .kmz shows the study area and collected environmental constraints in the study area.</p>	



Right of way

The Project will be sited northeast of the proposed Lee District Station located southeasterly of Norfolk Southern's parallel railroad tracks running along Remington Road in Fauquier County, Virginia on undeveloped residential lands. The tabletop analysis found there were no public lands required for the Project. The private land use is undeveloped residential as tabletop analysis found and was verified through the Fauquier County Clerk's Office classification/assessment. The private land requirements accommodate two new 500kV lines to loop in & out of the proposed Lee District Station off of the incumbent's existing 500kV Line. The two new 500kV lines will require 0.03 of a mile of 175' (87.5'/87.5') wide ROW (0.06 miles total) each in Fauquier County, Virginia where the land use is undeveloped residential with flat/rolling terrain. The Proposing Entity will use proven land acquisition processes & approaches that have been successfully employed on projects over the years. The Proposing Entity's initial land acquisition step is to verify current ownership by an examination of title, current property tax status, as well as document any liens, & or mortgages. The Proposing Entity will research the status of the subsurface estate, whether or not it is severed from the surface. Once ownership is established, the Proposing Entity will negotiate with landowners based on the fair market value of the property needed for the ROW easements. Market data studies & appraisals, both general & for specific tracts, will be conducted to establish values & a basis for acquisition negotiations. The Proposing Entity will pay for any crop damage &/or physical damage to property resulting from the construction &/or maintenance of the transmission line. Good Faith negotiations must be made with landowners. Negotiations will be done in an ethical, non-confrontational and non-threatening manner with the landowners. The long-term relationship with the landowners is paramount & will be kept in mind in all negotiations and honesty, integrity & professionalism will be displayed at all times. Negotiations will continue as long as practical to reach a voluntary agreement. If, & only if, it becomes evident that a voluntary fee purchase agreement between the Proposing Entity & the property owner cannot be reached, & other viable alternatives don't exist, the Proposing Entity may exercise the right of eminent domain to secure required property through condemnation proceedings.

Construction responsibility

Redacted to protect business sensitive information.

Benefits/Comments

Redacted to protect business sensitive information.

**Component Cost Details - In Current Year \$**

Engineering & design

Redacted to protect business sensitive information.

Permitting / routing / siting

Redacted to protect business sensitive information.

ROW / land acquisition

Redacted to protect business sensitive information.

Materials & equipment

Redacted to protect business sensitive information.

Construction & commissioning

Redacted to protect business sensitive information.

Construction management

Redacted to protect business sensitive information.

Overheads & miscellaneous costs	Redacted to protect business sensitive information.
Contingency	Redacted to protect business sensitive information.
Total component cost	\$3,888,471.85
Component cost (in-service year)	\$4,249,038.17

### **Substation Upgrade Component**

Component title	Substation Upgrade Component 1
Project description	Redacted to protect business sensitive information.
Substation name	Morrisville 500 kV
Substation zone	Dominion
Substation upgrade scope	On the existing 500KV line to be interconnected with the new greenfield Lee District Station, install a new 500KV line trap and line tuner and replace line relaying.

### **Transformer Information**

None	
New equipment description	On the existing 500KV line to be interconnected with the new greenfield Lee District Station, install 1-500KV, 5000A line trap & steel str.; 2-500KV line trap bus jumpers; 1-line tuner; 1-500KV CCVT bus jumper; and associated insulators, foundations, control cables, conduits, and equipment grounding. Install associated relay equipment in the existing control house. Remove 1-500KV line bus jumper and 1-500KV CCVT bus jumper to accommodate installing the new 500KV line trap. Remove existing line relaying.
Substation assumptions	The Project assumes that all necessary outages will be available, the existing control house has space for the new relay equipment, ground grid resistivity test data are available, ground grid upgrades will not be needed, the existing cable trench has space for the new control cables, soil boring logs and geotechnical report are available, the existing yard station equipment does not need to be replaced, and space will be available to install the equipment outlined in this description.
Real-estate description	The incumbent's existing Morrisville Station fences will not require expansion or any additional real estate to be purchased for the project.
Construction responsibility	Redacted to protect business sensitive information.

Benefits/Comments	Redacted to protect business sensitive information.
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	Redacted to protect business sensitive information.
Permitting / routing / siting	Redacted to protect business sensitive information.
ROW / land acquisition	Redacted to protect business sensitive information.
Materials & equipment	Redacted to protect business sensitive information.
Construction & commissioning	Redacted to protect business sensitive information.
Construction management	Redacted to protect business sensitive information.
Overheads & miscellaneous costs	Redacted to protect business sensitive information.
Contingency	Redacted to protect business sensitive information.
Total component cost	\$318,139.14
Component cost (in-service year)	\$347,639.23
<b>Transmission Line Upgrade Component</b>	
Component title	Transmission Line Upgrade Component 2
Project description	Redacted to protect business sensitive information.
Impacted transmission line	Front Royal (DVP)-Morrisville (DVP) 500 kV
Point A	Front Royal 500 kV
Point B	Lee District 500 kV
Point C	Morrisville 500 kV
Terrain description	The Project terrain is flat vacant land in Fauquier County, Virginia to tap the existing Front Royal – Morrisville 500kV line and connect it to the proposed Lee District Station. Elevation along the proposed route ranges from approximately 280' to 300' above sea level, with an average elevation of 286'.

### Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	Unknown
Hardware plan description	No existing hardware would be used. The cut-in would deadend near existing lattice towers and turn the 500kV line in/out of proposed Lee District station. Assuming there is OPGW on the existing line, the fiber could be terminated with a splice box at each tower location. The length of OPGW would match the proposed line length of 0.27 miles.
Tower line characteristics	The condition of the existing line is assumed to be in good working order based on the age determination from aerial imagery (less than 20 years). Structure loading at adjacent structures would remain unchanged due to proposing structure locations on centerline and near existing tower locations.

### Proposed Line Characteristics

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	500.000000	500.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	4678.000000	4678.000000
Winter (MVA)	4925.000000	4925.000000
Conductor size and type	2 bundled – 1272 kcmil 54/19 Strand “Pheasant” ACSS.	
Shield wire size and type	0.646” diameter 96 ct. OPGW. 159 kcmil 12/7 Strand “Guinea” ACSR (second shield).	
Rebuild line length	The Project requires a 0.27 mile cut-in of the existing 500kV AC overhead transmission line.	

## Rebuild portion description

The Proposing Entity reviewed locations for the two (2) 500kV loops in and out of the proposed Lee District Station. The locations of the tie lines were evaluated with respect to potential impacts on the surrounding community, environment, constructability, operations and maintenance considerations, and cost effectiveness. The proposed tap line routes are direct 0.1 mile routes (~0.2 miles total) tapping the existing Front Royal – Morrisville 500kV line adjacent to the proposed Lee District Station along undeveloped residential land. No streams or FEMA floodplain impacts are anticipated by the route. The tap lines cross portions of National Wetlands Inventory (NWI) wetlands. Following field studies, wetland data will be digitized and provided to engineering so that pole locations are sited to maximize avoidance of sensitive resources. For example, poles will be placed outside of or span wetlands to the greatest extent possible. Tree clearing is anticipated to be minimal and mostly consist of low growth/shrub vegetation. Impacts to the federally threatened Northern Long Eared bat are not anticipated. However, should suitable habitat be identified, time of year restrictions for tree clearing will be adhered to. The proposed site is located within the potential national register boundary for the Rappahannock Station II Battlefield site. A railroad west of the proposed station is shown as a resource deemed eligible for listing on historic register by the Virginia Department of Historic Resources (DHR). Other houses/residences were surveyed around the site but not on the subject property. Archaeological and Architectural surveys will be performed for the Project and coordinated with the DHR. No electric transmission line or pipeline crossings were identified. An accompanying .kmz shows the study area and collected environmental constraints in the study area.

Right of way	<p>The Project will be sited northeast of the proposed Lee District Station located southeasterly of Norfolk Southern's parallel railroad tracks running along Remington Road in Fauquier County, Virginia on undeveloped residential lands. The tabletop analysis found there were no public lands required for the Project. The private land use is undeveloped residential as tabletop analysis found and was verified through the Fauquier County Clerk's Office classification/assessment. The private land requirements include two new 500kV lines to loop in &amp; out of the proposed Lee District Station off of the incumbent's existing 500kV Line. The two new 500kV lines will require 0.1 of a mile of 175' (87.5'/87.5') wide ROW (~0.2 miles total) each in Fauquier County, Virginia where the land use is undeveloped residential with flat/rolling terrain. The Proposing Entity will use proven land acquisition processes &amp; approaches that have been successfully employed on projects over the years. The Proposing Entity's initial land acquisition step is to verify current ownership by an examination of title, current property tax status, and document any liens, &amp; or mortgages. The Proposing Entity will research the status of the subsurface estate, whether or not it is severed from the surface. Once ownership is established, the Proposing Entity will negotiate with landowners based on the fair market value of the property needed for the ROW easements. Market data studies &amp; appraisals, both general and for specific tracts, will be conducted to establish values &amp; a basis for acquisition negotiations. The Proposing Entity will pay for any crop damage and/or physical damage to property resulting from the construction and/or maintenance of the transmission line. Good Faith negotiations must be made with all landowners. Negotiations will be done in an ethical, non-confrontational and non-threatening manner with the landowners. The long-term relationship with the landowners is paramount &amp; will be kept in mind in all negotiations and honesty, integrity &amp; professionalism will be displayed at all times. Negotiations will continue as long as practical to reach a voluntary agreement. If, &amp; only if, it becomes evident that a voluntary fee purchase agreement between the Proposing Entity &amp; the property owner cannot be reached, &amp; other viable alternatives don't exist, the Proposing Entity may exercise the right of eminent domain to secure required property through condemnation proceedings.</p>
Construction responsibility	Redacted to protect business sensitive information.
Benefits/Comments	Redacted to protect business sensitive information.
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	Redacted to protect business sensitive information.
Permitting / routing / siting	Redacted to protect business sensitive information.
ROW / land acquisition	Redacted to protect business sensitive information.
Materials & equipment	Redacted to protect business sensitive information.
Construction & commissioning	Redacted to protect business sensitive information.
Construction management	Redacted to protect business sensitive information.

Overheads & miscellaneous costs	Redacted to protect business sensitive information.
Contingency	Redacted to protect business sensitive information.
Total component cost	\$3,888,471.85
Component cost (in-service year)	\$4,249,038.17

### **Transmission Line Upgrade Component**

Component title	Transmission Line Upgrade Component 3
Project description	Redacted to protect business sensitive information.
Impacted transmission line	Lucky Hill-Batna 230 kV
Point A	Lucky Hill 230 kV
Point B	Lee District 500/230 kV
Point C	Batna 230 kV
Terrain description	The Project terrain is relatively flat vacant land in Fauquier County, Virginia to tap the existing Lucky Hill – Batna 230kV line and connect it to the proposed Lee District Station. Elevation along the proposed route ranges from approximately 280' to 322' above sea level, with an average elevation of 291'.

### **Existing Line Physical Characteristics**

Operating voltage	230
Conductor size and type	Unknown
Hardware plan description	No existing hardware would be used. The cut-in would start near the proposed tap point of (38°32'10.83"N, 77°47'20.78"W) and turn the 230kV line in/out of proposed Lee District station. Assuming there is OPGW on the existing line, the fiber could be terminated with a splice box at each pole location. The length of OPGW would need to extend into and out of the proposed Lee District station with an estimated total length of 5,190 feet.
Tower line characteristics	The condition of the existing line is assumed to be in good working order based on the age determination from aerial imagery (less than 20 years). Structure loading at adjacent structures would remain unchanged or decrease due to proposing structure locations on centerline to split an existing span.

## Proposed Line Characteristics

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	230.000000	230.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1076.000000	1076.000000
Winter (MVA)	1133.000000	1133.000000
Conductor size and type	1 – 1272 kcmil 54/19 Strand ACSS	
Shield wire size and type	0.646” diameter 96 ct. OPGW	
Rebuild line length	The proposed extension into Lee District would be 0.50 miles.	



## Rebuild portion description

The Proposing Entity reviewed locations for the 230kV line to loop in & out of the proposed Lee District Station off of the incumbent's existing 230kV Line. The location of the Proposed Route was evaluated with respect to potential impacts on the surrounding community, environment, constructability, operations and maintenance considerations, and cost effectiveness. Given the short route length and preference to parallel existing transmission line ROW, no alternative routes were considered. The Proposed Route begins as a double-circuit line tapping the existing Lucky Hill-Batna 230 kV Line for ~0.3 miles traversing undeveloped residential land. The Route was chosen to minimize new visual impacts, maximize space for future residential development, and avoid bisecting existing parcels. The Proposed Route parallels an existing 500kV transmission line for a total of ~0.3 miles then turns southwest onto the proposed station parcel for ~0.2 miles to enter the proposed Lee District Station. No FEMA floodplain impacts, electric transmission line crossings, or pipeline crossings were identified along the Proposed Route. One unnamed tributary to Tinpot Run stream is crossed by the Proposed Route. The Proposed Route crosses portions of National Wetlands Inventory (NWI) wetlands. Following field studies, wetland data will be digitized and provided to engineering so that pole locations are sited to maximize avoidance of sensitive resources. For example, poles will be placed outside of or span wetlands to the greatest extent possible. Mature tree clearing is anticipated along approximately 0.1 miles of the Proposed Route with an additional 0.3 miles of low growth/shrub vegetation clearing. Should suitable habitat be identified for the federally threatened Northern Long Eared Bat, time of year restrictions for tree clearing will be adhered to. The proposed site is located within the potential national register boundary for the Rappahannock Station II Battlefield site. A railroad west of the proposed station is shown as a resource deemed eligible for listing on historic register by the DHR. Other houses/residences were surveyed around the site but not on the subject property. Archaeological and Architectural surveys will be performed for the Project and coordinated with the DHR. An accompanying .kmz shows the study area and collected environmental constraints in the study area.

Right of way

The Project will be sited northeast of the proposed Lee District Station located southeasterly of Norfolk Southern's parallel railroad tracks running along Remington Road in Fauquier County, Virginia on undeveloped agricultural lands. The tabletop analysis found there were no public lands required for the Project. The private land use is undeveloped agricultural as tabletop analysis found and was verified through the Fauquier County Clerk's Office classification/assessment. The private land requirements include a new 230kV line to loop in & out of the proposed Lee District Station off of the incumbent's existing 230kV Line. The new 230kV line will require 0.5 of a mile of 130' (65'/65') wide ROW in Fauquier County, Virginia where the land use is undeveloped residential with flat/rolling terrain. The Proposing Entity will use proven land acquisition processes & approaches that have been successfully employed on projects over the years. The Proposing Entity's initial land acquisition step is to verify current ownership by an examination of title, current property tax status, and document any liens, & or mortgages. The Proposing Entity will research the status of the subsurface estate, whether or not it is severed from the surface. Once ownership is established, the Proposing Entity will negotiate with landowners based on the fair market value of the property needed for the ROW easements. Market data studies & appraisals, both general and for specific tracts, will be conducted to establish values & a basis for acquisition negotiations. The Proposing Entity will pay for any crop damage and/or physical damage to property resulting from the construction and/or maintenance of the transmission line. Good Faith negotiations must be made with all landowners. Negotiations will be done in an ethical, non-confrontational and non-threatening manner with the landowners. The long-term relationship with the landowners is paramount & will be kept in mind in all negotiations and honesty, integrity & professionalism will be displayed at all times. Negotiations will continue as long as practical to reach a voluntary agreement. If, & only if, it becomes evident that a voluntary fee purchase agreement between the Proposing Entity & the property owner cannot be reached, & other viable alternatives do not exist, the Proposing Entity may exercise the right of eminent domain to secure required property through condemnation proceedings.

Construction responsibility

Redacted to protect business sensitive information.

Benefits/Comments

Redacted to protect business sensitive information.

**Component Cost Details - In Current Year \$**

Engineering & design

Redacted to protect business sensitive information.

Permitting / routing / siting

Redacted to protect business sensitive information.

ROW / land acquisition

Redacted to protect business sensitive information.

Materials & equipment

Redacted to protect business sensitive information.

Construction & commissioning

Redacted to protect business sensitive information.

Construction management

Redacted to protect business sensitive information.

Overheads & miscellaneous costs	Redacted to protect business sensitive information.
Contingency	Redacted to protect business sensitive information.
Total component cost	\$2,387,151.52
Component cost (in-service year)	\$2,608,504.91

## Congestion Drivers

None

## Existing Flowgates

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
GD-S12	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer Gen Deliv	Included
GD-S37	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer Gen Deliv	Included
GD-S717	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer Gen Deliv	Included
GD-S715	314085	6REMNGCT	314110	6ELK RUN	1	230	345	Summer Gen Deliv	Included
GD-S17	314110	6ELK RUN	314037	6GAINSVL	1	230	345	Summer Gen Deliv	Included
GD-S30	314749	6CHARLVL	314772	6PROFFIT	1	230	345	Summer Gen Deliv	Included

## New Flowgates

Redacted to protect business sensitive information.

## Financial Information

Capital spend start date	04/2022
Construction start date	02/2023
Project Duration (In Months)	26

## Cost Containment Commitment

Cost cap (in current year)

Redacted to protect business sensitive information.

Cost cap (in-service year)

Redacted to protect business sensitive information.

### **Components covered by cost containment**

1. Greenfield Substation Component 1 - Transource

### **Cost elements covered by cost containment**

Engineering & design

Yes

Permitting / routing / siting

Yes

ROW / land acquisition

Yes

Materials & equipment

Yes

Construction & commissioning

Yes

Construction management

Yes

Overheads & miscellaneous costs

Yes

Taxes

Yes

AFUDC

Yes

Escalation

Yes

Additional Information

Redacted to protect business sensitive information.

Is the proposer offering a binding cap on ROE?

Yes

Would this ROE cap apply to the determination of AFUDC?

Yes

Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?

No

Is the proposer offering a Debt to Equity Ratio cap?

Redacted to protect business sensitive information.

## Additional Comments

None