Virginia Transmission Project

General Information

Proposing entity name	CONFIDENTIAL INFORMATION
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	CONFIDENTIAL INFORMATION
Company proposal ID	
PJM Proposal ID	260
Project title	Virginia Transmission Project
Project description	The Virginia Transmission Project includes two new 765/500kV substations with a 765kV connecting the two as well as various 500kV connections to strengthen the 500kV backbone in Virginia. The project also includes various 230kV connections.
Email	CONFIDENTIAL INFORMATION
Project in-service date	06/2030
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	

Project Components

1. Middle Fork Substation
2. South Fork Substation
3. Turkey Creek Substation
4. Warrenton Expansion
5. Wheeler Expansion

6. Brickyard Expansion
7. Vint Hill Expansion
8. Cunningham Expansion
9. Morrisville Expansion
10. Rawlings Expansion
11. Carson Expansion
12. Warrenton to Wheeler 230kV Overhead and Underground Transmission Line
13. Vint Hill to Brickyard 230 kV Underground Transmission Line
14. Front Royal - Vint Hill 500kV
15. Cunningham - Middle Fork #1 500kV Transmission Line
16. Cunningham - Middle Fork #2 500kV Transmission Line
17. Middle Fork - Morrisville #1 500kV Tranmission Line
18. Middle Fork - Morrisville #2 500kV Tranmission Line
19. Rawlings - South Fork

Greenfield Substation Component

Component title	Middle Fork Substation
Project description	
Substation name	Middle Fork
Substation description	The Middle Fork Substation will consist of a 4-position double breaker double bus 765kV yard, two 765/500 kV transformer, a 8 position breaker and a half 500kV yard, and two (2) 500 kV fixed series capacitors.
Nominal voltage	AC
Nominal voltage	765/500

Transformer Information

Name	Capacity (MVA)

Transformer	Transformer #1		3125
	High Side	Low Side	Tertiary
Voltage (kV)	765	500	

	Name	Capacity (MVA)
Transformer	Transformer #2	3125

	High Side	Low Side	Tertiary
Voltage (kV)	765	500	

Major equipment description	765 kV double breaker configuration with four (4) positions, eight (8) circuit breakers, two (2) 765/500 kV transformer, 500kV 8 position breaker and half with twelve (12) circuit breakers and two (2) 500 kV fixed series capacitors.

	Normal ratings	Emergency ratings
Summer (MVA)	3125.000000	4000.000000
Winter (MVA)	3500.000000	4250.000000

Environmental assessment	The Project will require a Certificate of Public Convenience and Necessity (“CPCN”) from the Virginia State Corporation Commission (“SCC”) (VA Code §§ 56-265.2, 56-46.1(B)). The proposed Project was sited to avoid and minimize impacts to areas of environmental concern, including wetlands and waters, based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways, in which case impacts will be minimized to the extent practicable. Proposer will engage a qualified consultant to conduct a delineation of wetlands and waters in order to establish jurisdictional boundaries of aquatic resources in the Project area, the results of which will be used to refine Project siting, if necessary, and determine permitting requirements. The USACE will review the Project for compliance with Section 106 of the National Historic Preservation Act (16 USC §40 et seq.) and Section 7 of the Federal Endangered Species Act [16 USC §1536(a)(2)], in coordination with the Virginia State Historic Preservation Office and U.S. Fish and Wildlife Service, respectively. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these other permits to be minor due to the more limited effort to prepare applications and the less intensive application review processes which follow. These include permits related to Federal Aviation Administration airspace clearance and stormwater/erosion and sedimentation control (i.e., Pollutant Discharge Elimination System Construction General Permit). Post-award, Proposer will consult with local jurisdictions and state and federal permitting agencies to confirm permitting requirements, discuss the types and scopes of environmental surveys and studies required for permitting, and discuss appropriate avoidance/mitigation measures.
Outreach plan	Proposer will identify and engage stakeholders, such as community officials and landowners within the Project area, early in the process and maintain an active dialogue throughout. Public meetings may be held to offer a venue for landowners and other interested community members to learn about the Project and for Proposer to learn more about specific landowner and community preferences. Proposer plans to make information available on its website and provide notification of public meetings to landowners within the Project area as required in the siting approval process.
Land acquisition plan	The Project will be located on new right-of-way to be purchased by Proposer. In addition, Proposer will procure any necessary easement required to access the site. Proposer will assign a Right-of-Way Manager to oversee all real estate related activities for the Project including appraisals, title work, surveying, land acquisition, and restoration. A right-of-way agent will contact the property owner(s) in person to explain the Project and, as necessary, secure permission to conduct surveys, archaeological studies, etc. The right-of-way agent will be the primary point of contact to negotiate with the property owner to acquire the substation site and any required easements on a mutually agreeable basis. To the extent that negotiations reach an impasse, Proposer will be able to pursue eminent domain. The right-of-way agents will continue to act as a liaison with the property owners during construction and through the restoration process.
Construction responsibility	Proposer
Benefits/Comments	

Component Cost Details - In Current Year $

Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	$294,765,938.00
Component cost (in-service year)	$327,906,148.00

Greenfield Substation Component

Component title	South Fork Substation
Project description	
Substation name	South Fork
Substation description	The South Fork Substation will consist of a 4-position breaker and a half 500 kV yard, and two (2) 500kV fixed series capacitors.
Nominal voltage	AC
Nominal voltage	500

Transformer Information

None

Major equipment description	500kV 4 position breaker and a half with six (6) circuit breakers and two (2) 500kV fixed series capacitors.	
	Normal ratings	Emergency ratings
Summer (MVA)	3125.000000	4000.000000
Winter (MVA)	3500.000000	4250.000000
Environmental assessment	The Project will require a Certificate of Public Convenience and Necessity (“CPCN”) from the Virginia State Corporation Commission (“SCC”) (VA Code §§ 56-265.2, 56-46.1(B)). The proposed Project was sited to avoid and minimize impacts to areas of environmental concern, including wetlands and waters, based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways, in which case impacts will be minimized to the extent practicable. Proposer will engage a qualified consultant to conduct a delineation of wetlands and waters in order to establish jurisdictional boundaries of aquatic resources in the Project area, the results of which will be used to refine Project siting, if necessary, and determine permitting requirements. The USACE will review the Project for compliance with Section 106 of the National Historic Preservation Act (16 USC §40 et seq.) and Section 7 of the Federal Endangered Species Act [16 USC §1536(a)(2)], in coordination with the Virginia State Historic Preservation Office and U.S. Fish and Wildlife Service, respectively. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these other permits to be minor due to the more limited effort to prepare applications and the less intensive application review processes which follow. These include permits related to Federal Aviation Administration airspace clearance and stormwater/erosion and sedimentation control (i.e., Pollutant Discharge Elimination System Construction General Permit). Post-award, Proposer will consult with local jurisdictions and state and federal permitting agencies to confirm permitting requirements, discuss the types and scopes of environmental surveys and studies required for permitting, and discuss appropriate avoidance/mitigation measures.	
Outreach plan	Proposer will identify and engage stakeholders, such as community officials and landowners within the Project area, early in the process and maintain an active dialogue throughout. Public meetings may be held to offer a venue for landowners and other interested community members to learn about the Project and for Proposer to learn more about specific landowner and community preferences. Proposer plans to make information available on its website and provide notification of public meetings to landowners within the Project area as required in the siting approval process.	

Land acquisition plan	The Project will be located on new right-of-way to be purchased by Proposer. In addition, Proposer will procure any necessary easement required to access the site. Proposer will assign a Right-of-Way Manager to oversee all real estate related activities for the Project including appraisals, title work, surveying, land acquisition, and restoration. A right-of-way agent will contact the property owner(s) in person to explain the Project and, as necessary, secure permission to conduct surveys, archaeological studies, etc. The right-of-way agent will be the primary point of contact to negotiate with the property owner to acquire the substation site and any required easements on a mutually agreeable basis. To the extent that negotiations reach an impasse, Proposer will be able to pursue eminent domain. The right-of-way agents will continue to act as a liaison with the property owners during construction and through the restoration process.
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	$115,454,865.00
Component cost (in-service year)	$128,435,327.00

Greenfield Substation Component

Component title	Turkey Creek Substation
Project description	

Substation name	Turkey Creek
Substation description	The Turkey Creek Substation will consist of a 4-position breaker and a half 500 kV yard.
Nominal voltage	AC
Nominal voltage	500

Transformer Information

None

Major equipment description	500 kV breaker and a half configuration with four (4) positions and circuit breakers (6).

	Normal ratings	Emergency ratings
Summer (MVA)	4357.000000	4357.000000
Winter (MVA)	5155.000000	5155.000000

Environmental assessment	The Project will require a Certificate of Public Convenience and Necessity (“CPCN”) from the Virginia State Corporation Commission (“SCC”) (VA Code §§ 56-265.2, 56-46.1(B)). The proposed Project was sited to avoid and minimize impacts to areas of environmental concern, including wetlands and waters, based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways, in which case impacts will be minimized to the extent practicable. Proposer will engage a qualified consultant to conduct a delineation of wetlands and waters in order to establish jurisdictional boundaries of aquatic resources in the Project area, the results of which will be used to refine Project siting, if necessary, and determine permitting requirements. The USACE will review the Project for compliance with Section 106 of the National Historic Preservation Act (16 USC §40 et seq.) and Section 7 of the Federal Endangered Species Act [16 USC §1536(a)(2)], in coordination with the Virginia State Historic Preservation Office and U.S. Fish and Wildlife Service, respectively. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these other permits to be minor due to the more limited effort to prepare applications and the less intensive application review processes which follow. These include permits related to Federal Aviation Administration airspace clearance and stormwater/erosion and sedimentation control (i.e., Pollutant Discharge Elimination System Construction General Permit). Post-award, Proposer will consult with local jurisdictions and state and federal permitting agencies to confirm permitting requirements, discuss the types and scopes of environmental surveys and studies required for permitting, and discuss appropriate avoidance/mitigation measures.

Outreach plan	Proposer will identify and engage stakeholders, such as community officials and landowners within the Project area, early in the process and maintain an active dialogue throughout. Public meetings may be held to offer a venue for landowners and other interested community members to learn about the Project and for Proposer to learn more about specific landowner and community preferences. Proposer plans to make information available on its website and provide notification of public meetings to landowners within the Project area as required in the siting approval process.
Land acquisition plan	The Project will be located on new right-of-way to be purchased by Proposer. In addition, Proposer will procure any necessary easement required to access the site. Proposer will assign a Right-of-Way Manager to oversee all real estate related activities for the Project including appraisals, title work, surveying, land acquisition, and restoration. A right-of-way agent will contact the property owner(s) in person to explain the Project and, as necessary, secure permission to conduct surveys, archaeological studies, etc. The right-of-way agent will be the primary point of contact to negotiate with the property owner to acquire the substation site and any required easements on a mutually agreeable basis. To the extent that negotiations reach an impasse, Proposer will be able to pursue eminent domain. The right-of-way agents will continue to act as a liaison with the property owners during construction and through the restoration process.
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	$39,574,406.00
Component cost (in-service year)	$44,023,712.00

Substation Upgrade Component

Component title	Warrenton Expansion
Project description	
Substation name	Warrenton
Substation zone	353
Substation upgrade scope	The Warrenton substation expansion consists of adding one (1) double breaker double bus position to the existing 230 kV substation.

Transformer Information

None

New equipment description	230 kV Circuit Breakers (2) and associated facilities to create one (1) new double breaker double bus 230 kV position.
Substation assumptions	Additional space is available within the existing substation parcel to the northwest for the expansion.
Real-estate description	The substation will expanded to the northwest within the existing property of the substation owner.
Construction responsibility	Dominion
Benefits/Comments	

Component Cost Details - In Current Year $

Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION

Contingency	CONFIDENTIAL INFORMATION
Total component cost	$5,334,254.00
Component cost (in-service year)	$5,941,481.00

Substation Upgrade Component

Component title	Wheeler Expansion
Project description	
Substation name	Wheeler
Substation zone	353
Substation upgrade scope	The Wheeler substation expansion consists of adding one (1) ring bus position to the existing 230 kV substation and adding a series reactor on the new Warrenton - Wheeler 230kV transmission line.

Transformer Information

None

New equipment description	230 kV Circuit Breakers (1), 230kV series reactor, and associated facilities to create one (1) new 230 kV ring bus position.
Substation assumptions	The expansion can be accommodated within the existing substation footprint. Additional space is available within the existing substation parcel to the east, if needed.
Real-estate description	No additional real estate is anticipated for this component.
Construction responsibility	Dominion
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION

Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	$3,048,145.00
Component cost (in-service year)	$3,395,132.00

Substation Upgrade Component

Component title	Brickyard Expansion
Project description	
Substation name	Brickyard
Substation zone	353
Substation upgrade scope	The Brickyard substation expansion consists of adding one (1) double breaker double bus position to the existing 230 kV substation and a series reactor on the new Vint Hill to Brickyard 230kV transmission line.

Transformer Information

None

New equipment description	230 kV Circuit Breakers (2), 230kV series reactor, and associated facilities to create one (1) new 230 kV double breaker double bus position.
Substation assumptions	The expansion can be accommodated within the existing substation footprint. Additional space is available within the existing substation parcel to the northwest, if needed.
Real-estate description	No additional real estate is anticipated for this component.
Construction responsibility	Dominion
Benefits/Comments	

Component Cost Details - In Current Year $

Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	$5,334,254.00
Component cost (in-service year)	$5,941,481.00

Substation Upgrade Component

Component title	Vint Hill Expansion
Project description	
Substation name	Vint Hill
Substation zone	353
Substation upgrade scope	The substation scope will involve adding two (2) new 500kV gas-insulated breakers in a breaker and a half configuration to create one new line position and two (2) 230 kV Circuit Breakers and associated facilities to create one (1) new 230 kV breaker and a half position.

Transformer Information

None

New equipment description	The substation scope will involve adding two (2) new 500kV gas-insulated breakers in a breaker and a half configuration to create one new line position and two (2) 230 kV Circuit Breakers and associated facilities to create one (1) new 230 kV breaker and a half position.

Substation assumptions	The expansion can be accommodated within the existing substation footprint. Additional space is available within the existing substation parcel to the north, if needed.
Real-estate description	No additional real estate is anticipated for this component.
Construction responsibility	Dominion
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	$234,560.00
ROW / land acquisition	$.00
Materials & equipment	$7,271,374.00
Construction & commissioning	$2,932,006.00
Construction management	$703,681.00
Overheads & miscellaneous costs	$117,280.00
Contingency	$1,759,203.00
Total component cost	$13,487,225.00
Component cost (in-service year)	$15,022,550.00

Substation Upgrade Component

Component title	Cunningham Expansion
Project description	
Substation name	Cunningham
Substation zone	366
Substation upgrade scope	The Cunningham 500 kV Substation expansion consists of adding two (2) double breaker double bus positions to the existing 500 kV substation.

Transformer Information

None

New equipment description	500 kV circuit breakers (4) and associated facilities to create two (2) new 500 kV positions.
Substation assumptions	The expansion can be accommodated within the existing substation parcel.
Real-estate description	No additional real estate is required for this component.
Construction responsibility	Dominion
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	$723,537.00
Permitting / routing / siting	$361,768.00
ROW / land acquisition	$.00
Materials & equipment	$11,214,822.00
Construction & commissioning	$4,522,106.00
Construction management	$1,085,305.00
Overheads & miscellaneous costs	$180,884.00
Contingency	$2,713,263.00
Total component cost	$20,801,685.00
Component cost (in-service year)	$23,169,654.00

Substation Upgrade Component

Component title	Morrisville Expansion
Project description	
Substation name	Morrisville

Substation zone	353
Substation upgrade scope	The Morrisville substation expansion consists of adding a two (2) 500kV double breaker double bus positions.

Transformer Information

None

New equipment description	Four (4) 500kV circuit breakers and associated equipment to create two double breaker double bus positions.
Substation assumptions	The expansion can be accommodated by expanding the substationto the east for the 500kV yard expansion.
Real-estate description	Additional real estate is anticipated for this component.
Construction responsibility	Dominion
Benefits/Comments	

Component Cost Details - In Current Year $

Engineering & design	$723,537.00
Permitting / routing / siting	$361,768.00
ROW / land acquisition	$.00
Materials & equipment	$11,214,822.00
Construction & commissioning	$4,522,106.00
Construction management	$1,085,305.00
Overheads & miscellaneous costs	$180,884.00
Contingency	$2,713,263.00
Total component cost	$20,801,685.00
Component cost (in-service year)	$23,169,654.00

Substation Upgrade Component

Component title	Rawlings Expansion
Project description	
Substation name	Rawlings
Substation zone	366
Substation upgrade scope	The Rawlings 500 kV substation expansion consists of adding a one (1) 500kV breaker and a half position.

Transformer Information

None

New equipment description	One (1) 500kV circuit breakers and associated equipment to create one breaker and a half position.
Substation assumptions	The expansion can be accommodated within the existing substation footprint.
Real-estate description	No real estate is required for the expansion.
Construction responsibility	Dominion
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	$310,087.00
Permitting / routing / siting	$155,044.00
ROW / land acquisition	$.00
Materials & equipment	$4,806,352.00
Construction & commissioning	$1,938,045.00
Construction management	$465,131.00
Overheads & miscellaneous costs	$77,522.00

Contingency	$1,162,827.00
Total component cost	$8,915,008.00
Component cost (in-service year)	$9,929,852.00

Substation Upgrade Component

Component title	Carson Expansion
Project description	
Substation name	Carson
Substation zone	366
Substation upgrade scope	The Carson 500 kV substation expansion consists of adding a one (1) 500kV breaker and a half position.

Transformer Information

None

New equipment description	Two (2) 500kV circuit breakers and associated equipment to create one breaker and a half position.
Substation assumptions	The expansion can be accommodated by expanding on existing substation property to the north.
Real-estate description	No additional real estate is required for the expansion.
Construction responsibility	Dominion
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	$310,087.00
Permitting / routing / siting	$155,044.00
ROW / land acquisition	$.00
Materials & equipment	$4,806,352.00

Construction & commissioning	$1,938,045.00
Construction management	$465,131.00
Overheads & miscellaneous costs	$77,522.00
Contingency	$1,162,827.00
Total component cost	$8,915,008.00
Component cost (in-service year)	$9,929,852.00

Greenfield Transmission Line Component

Component title	Warrenton to Wheeler 230kV Overhead and Underground Transmission Line
Project description	
Point A	Warrenton
Point B	Wheeler
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	1000.000000	1250.000000
Winter (MVA)	1000.000000	1250.000000

Conductor size and type	2-1272 ACSS/TW (OH) & 2-5000kcmil Enamel Coated Copper (UG)
Nominal voltage	AC
Nominal voltage	230
Line construction type	Overhead, Underground

General route description	The route starts overhead and heads northeast out of the Warrenton substation through farm fields and forested areas. The attached plan and profile drawings depict the overhead route. The line transitions to underground at the intersection of County Road 605 and Rogues Road. It continues northeast through Rogues Road all the way to the Wheeler Substation. The attached UG Route pdf depicts the underground route.
Terrain description	The terrain is flat farmland and forested areas with some rolling hills for the overhead portion and primarily a two lane road for the underground portion.
Right-of-way width by segment	The new transmission line is approximately 8 miles in length. 4 miles of the line will be overhead that includes a right-of-way width planned to be 125 feet and 4 miles of the line will be underground that would include a right-of-way width that is planned to be approximately 5 feet.
Electrical transmission infrastructure crossings	N/A
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and country roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.

Environmental impacts	The Project will require a Certificate of Public Convenience and Necessity (“CPCN”) from the Virginia State Corporation Commission (“SCC”) (VA Code §§ 56-265.2, 56-46.1(B)). The proposed Project was routed to avoid and minimize impacts to areas of environmental concern, including wetlands and waters, based on GIS data. Environmental impacts will be minimized by collocating the proposed transmission line along corridors of existing linear development to the maximum extent practicable. practicable. Proposer will engage a qualified consultant to conduct a delineation of wetlands and waters in order to establish jurisdictional boundaries of aquatic resources in the Project area, the results of which will be used to refine Project routing, if necessary, and determine permitting requirements. Any unavoidable, regulated impacts to regulated aquatic resources will be mitigated in accordance with applicable state and federal regulations. Further, aquatic resources that may be temporarily impacted during construction will be restored to pre-construction conditions in accordance with applicable state and federal permit conditions. It is possible that compensatory mitigation will be required to offset unavoidable permanent impacts to aquatic resources. The USACE will review the Project for compliance with Section 106 of the National Historic Preservation Act (16 USC §40 et seq.) and Section 7 of the Federal Endangered Species Act [16 USC §1536(a)(2)], in coordination with the Virginia State Historic Preservation Office and U.S. Fish and Wildlife Service, respectively. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these other permits to be minor due to the more limited effort to prepare applications and the less intensive application review processes which follow. These include permits related to Federal Aviation Administration airspace clearance, stormwater/erosion and sedimentation control (i.e., Pollutant Discharge Elimination System Construction General Permit), road crossings, and utility and railroad crossings. Post-award, Proposer will consult with local jurisdictions and state and federal permitting agencies to confirm permitting requirements, discuss the types and scopes of environmental surveys and studies required for permitting, and discuss appropriate avoidance/mitigation measures.
Tower characteristics	Single-circuit tubular steel monopoles in a delta configuration. The duct bank design is detailed in the "Warrenton - Wheeler Duct Bank Details.pdf".
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION

Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	$127,106,006.00
Component cost (in-service year)	$151,696,796.00

Greenfield Transmission Line Component

Component title	Vint Hill to Brickyard 230 kV Underground Transmission Line
Project description	
Point A	Vint Hill
Point B	Brickyard
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	1000.000000	1250.000000
Winter (MVA)	1000.000000	1250.000000

Conductor size and type	2-5000kcmil Enamel Coated Copper
Nominal voltage	AC
Nominal voltage	230
Line construction type	Underground

General route description	The line heads east out of the Vint Hill substation on Vint Hill road and continues east where it crosses Nokesville road, it then parallels Nokesville road on a walking path to reduce impacts to the community. From there the route heads south through Pennsylvania Avenue and Carolina Drive before turning east on Gateway Boulevard. From the Gateway Boulevard the route heads south on Buchanan Loop to makes its way to the Brickyard Substation. There are two trenchless crossings anticipated. These include the river crossing that is just east of the Nokesville Road and Piper Lane intersection and the railroad crossing that is just south of Buchanan Loop.
Terrain description	The terrain traversed by the route mainly consists of two lane roads and walking paths.
Right-of-way width by segment	The new transmission line is approximately 5 miles in length with a right-of-way width planned to be approximately 5 feet.
Electrical transmission infrastructure crossings	N/A
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and country roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.

Environmental impacts	The Project will require a Certificate of Public Convenience and Necessity (“CPCN”) from the Virginia State Corporation Commission (“SCC”) (VA Code §§ 56-265.2, 56-46.1(B)). The proposed Project was routed to avoid and minimize impacts to areas of environmental concern, including wetlands and waters, based on GIS data. Environmental impacts will be minimized by collocating the proposed transmission line along corridors of existing linear development to the maximum extent practicable. practicable. Proposer will engage a qualified consultant to conduct a delineation of wetlands and waters in order to establish jurisdictional boundaries of aquatic resources in the Project area, the results of which will be used to refine Project routing, if necessary, and determine permitting requirements. Any unavoidable, regulated impacts to regulated aquatic resources will be mitigated in accordance with applicable state and federal regulations. Further, aquatic resources that may be temporarily impacted during construction will be restored to pre-construction conditions in accordance with applicable state and federal permit conditions. It is possible that compensatory mitigation will be required to offset unavoidable permanent impacts to aquatic resources. The USACE will review the Project for compliance with Section 106 of the National Historic Preservation Act (16 USC §40 et seq.) and Section 7 of the Federal Endangered Species Act [16 USC §1536(a)(2)], in coordination with the Virginia State Historic Preservation Office and U.S. Fish and Wildlife Service, respectively. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these other permits to be minor due to the more limited effort to prepare applications and the less intensive application review processes which follow. These include permits related to Federal Aviation Administration airspace clearance, stormwater/erosion and sedimentation control (i.e., Pollutant Discharge Elimination System Construction General Permit), road crossings, and utility and railroad crossings. Post-award, Proposer will consult with local jurisdictions and state and federal permitting agencies to confirm permitting requirements, discuss the types and scopes of environmental surveys and studies required for permitting, and discuss appropriate avoidance/mitigation measures.
Tower characteristics	The duct bank design details are included in the "Vint Hill - Brickyard Duct Bank Details.pdf".
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION

Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	$143,750,000.00
Component cost (in-service year)	$171,560,849.00

Greenfield Transmission Line Component

Component title	Front Royal - Vint Hill 500kV
Project description	
Point A	Front Royal
Point B	Vint Hill
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	4330.000000	4330.000000
Winter (MVA)	4330.000000	4330.000000

Conductor size and type	Triple Bundle 954kcmil "Cardinal" ACSS/TW/MA3
Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead

General route description	The Front Royal - Vint Hill transmission line begins at Front Royal and follows the existing 500kV corridor to the southeast. The route continues to follow this existing corridor until it meets up with the Remington substation. At this point the route parallels the existing Remington CT to Gainesville 230kV corridor. The route parallels this corridor all the way to the Vint Hill Substation. See Plan and Profile drawing attachment for information on the general project route. Most high-voltage transmission projects will require a state siting approval. To begin the siting approval process, Proposer plans to hold pre-application meetings with the regulatory agency to introduce Proposer and the Project, as well as confirm its understanding of the process. Shortly thereafter, Proposer will simultaneously begin collecting siting data and start its outreach efforts so that public siting input is incorporated at the earliest stages of the Project. Once the Proposer identifies a preferred site/route and at least one viable alternative site/route, Proposer will carry out environmental and detailed engineering work in order to establish a highly- detailed Project plan to support the siting applications.
Terrain description	The terrain traversed by the project features rolling hills to mountainous slopes and segments of forested areas.
Right-of-way width by segment	The project will feature a right of way width of 175 feet for the project route. The ROW will parallel existing corridor for the majority of the route.
Electrical transmission infrastructure crossings	The proposed line will cross over the Front Royal to Morrisville 500kV transmission line in two locations., The proposed line will cross over the Meadow Brook to Loudoun 500kV transmission line., The proposed line will cross over the Remington CT to Gainesville 230kV transmission line., The proposed line will cross over the Remington CT to Marsh Run 230kV transmission line., The proposed line will cross over the Remington CT to Warrenton 230kV transmission line., The proposed line will cross over the Remington to Remington CT 230kV transmission line., The proposed line will cross over the Riverton to Double Tollgate 138kV transmission line.
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and country roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.

Environmental impacts	The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings.
Tower characteristics	The preliminary design for the single circuit transmission line utilizes tubular steel monopole structures with davit arms and v-string insulators in a delta configuration.
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	$464,445,320.00
Component cost (in-service year)	$554,300,060.00

Greenfield Transmission Line Component

Component title	Cunningham - Middle Fork #1 500kV Transmission Line	
Project description		
Point A	Cunningham	
Point B	Middle Fork	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	4330.000000	4330.000000
Winter (MVA)	4330.000000	4330.000000
Conductor size and type	Triple Bundle 954kcmil "Cardinal" ACSS/TW/MA3	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	The route heads east out of Cunningham for approximately a mile before terminating at the new Middle Fork Substation.	
Terrain description	The terrain is generally wooded lands or farm fields.	
Right-of-way width by segment	The project will feature a right of way width of 175 feet for the project route.	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and country roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.	

Environmental impacts	The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings.
Tower characteristics	The preliminary design for the single circuit transmission line utilizes tubular steel monopole structures with davit arms and v-string insulators in a delta configuration.
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	$152,801.00
Permitting / routing / siting	$117,539.00
ROW / land acquisition	$254,545.00
Materials & equipment	$1,253,754.00
Construction & commissioning	$2,076,530.00
Construction management	$137,129.00
Overheads & miscellaneous costs	$180,227.00
Contingency	$625,879.00
Total component cost	$4,798,404.00
Component cost (in-service year)	$5,726,738.00

Greenfield Transmission Line Component

Component title	Cunningham - Middle Fork #2 500kV Transmission Line	
Project description		
Point A	Cunningham	
Point B	Middle Fork	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	4330.000000	4330.000000
Winter (MVA)	4330.000000	4330.000000
Conductor size and type	Triple Bundle 954kcmil "Cardinal" ACSS/TW/MA3	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	The route heads east out of Cunningham for approximately a mile before terminating at the new Middle Fork Substation.	
Terrain description	The terrain is generally wooded lands or farm fields.	
Right-of-way width by segment	The project will feature a right of way width of 175 feet for the project route.	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and country roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.	

Environmental impacts	The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings.
Tower characteristics	The preliminary design for the single circuit transmission line utilizes tubular steel monopole structures with davit arms and v-string insulators in a delta configuration.
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	$152,801.00
Permitting / routing / siting	$117,539.00
ROW / land acquisition	$254,545.00
Materials & equipment	$1,253,754.00
Construction & commissioning	$2,076,530.00
Construction management	$137,129.00
Overheads & miscellaneous costs	$180,227.00
Contingency	$625,879.00
Total component cost	$4,798,404.00
Component cost (in-service year)	$5,726,738.00

Greenfield Transmission Line Component

Component title	Middle Fork - Morrisville #1 500kV Tranmission Line	
Project description		
Point A	Middle Fork	
Point B	Morrisville	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	4330.000000	4330.000000
Winter (MVA)	4330.000000	4330.000000
Conductor size and type	Triple Bundle 954kcmil "Cardinal" ACSS/TW/MA3	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	The route heads east out of Middle Fork for approximately 71.1 miles before terminating at the existing Morrisville substation.	
Terrain description	The terrain is generally wooded lands or farm fields.	
Right-of-way width by segment	The project will feature a right of way width of 175 feet for the project route.	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and country roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.	

Environmental impacts	The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings.
Tower characteristics	The preliminary design for the single circuit transmission line utilizes tubular steel monopole structures with davit arms and v-string insulators in a delta configuration.
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	$12,674,866.00
Permitting / routing / siting	$9,749,897.00
ROW / land acquisition	$22,622,727.00
Materials & equipment	$103,998,897.00
Construction & commissioning	$172,248,173.00
Construction management	$11,374,879.00
Overheads & miscellaneous costs	$14,949,841.00
Contingency	$52,142,892.00
Total component cost	$399,762,172.00
Component cost (in-service year)	$477,102,870.00

Greenfield Transmission Line Component

Component title	Middle Fork - Morrisville #2 500kV Tranmission Line	
Project description		
Point A	Middle Fork	
Point B	Morrisville	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	4330.000000	4330.000000
Winter (MVA)	4330.000000	4330.000000
Conductor size and type	Triple Bundle 954kcmil "Cardinal" ACSS/TW/MA3	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	The route heads east out of Middle Fork for approximately 71.1 miles before terminating at the existing Morrisville substation.	
Terrain description	The terrain is generally wooded lands or farm fields.	
Right-of-way width by segment	The project will feature a right of way width of 175 feet for the project route.	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and country roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.	

Environmental impacts	The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings.
Tower characteristics	The preliminary design for the single circuit transmission line utilizes tubular steel monopole structures with davit arms and v-string insulators in a delta configuration.
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	$12,674,866.00
Permitting / routing / siting	$9,749,897.00
ROW / land acquisition	$22,622,727.00
Materials & equipment	$103,998,897.00
Construction & commissioning	$172,248,173.00
Construction management	$11,374,879.00
Overheads & miscellaneous costs	$14,949,841.00
Contingency	$52,142,892.00
Total component cost	$399,762,172.00
Component cost (in-service year)	$477,102,870.00

Greenfield Transmission Line Component

Component title	Rawlings - South Fork	
Project description		
Point A	Rawlings	
Point B	south fork	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	4330.000000	4330.000000
Winter (MVA)	4330.000000	4330.000000
Conductor size and type	Triple Bundle 954kcmil "Cardinal" ACSS/TW/MA3	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	The route heads east out of Rawlings for before terminating at the South FOrk substation.	
Terrain description	The terrain is generally wooded lands or farm fields.	
Right-of-way width by segment	The project will feature a right of way width of 175 feet for the project route.	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and country roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.	

Environmental impacts	The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings.
Tower characteristics	The preliminary design for the single circuit transmission line utilizes tubular steel monopole structures with davit arms and v-string insulators in a delta configuration.
Construction responsibility	Proposer
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	$4,011,033.00
Permitting / routing / siting	$3,085,410.00
ROW / land acquisition	$7,159,091.00
Materials & equipment	$32,911,043.00
Construction & commissioning	$54,508,915.00
Construction management	$3,599,645.00
Overheads & miscellaneous costs	$4,730,962.00
Contingency	$16,500,915.00
Total component cost	$126,507,014.00
Component cost (in-service year)	$150,981,921.00

Congestion Drivers

None

Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2025W1-N11-WT55	235445	01BEDNGT	235546	01EAGLE	1	138	201	N-1-1 Thermal	Excluded
2025W1-N11-WT56	235445	01BEDNGT	235546	01EAGLE	1	138	201	N-1-1 Thermal	Excluded
2025W1-N11-WT23	235457	01DTG	235474	01GREENW	1	138	201	N-1-1 Thermal	Excluded
2025W1-N11-ST8	235457	01DTG	235474	01GREENW	1	138	201	N-1-1 Thermal	Excluded
2025W1-N11-ST9	235483	01MDWBRK	235519	01W WINC	1	138	201	N-1-1 Thermal	Excluded
2025W1-N11-ST15	235483	01MDWBRK	235519	01W WINC	1	138	201	N-1-1 Thermal	Excluded
2025W1-GD-W50	235483	01MDWBRK	235519	01W WINC	1	138	201	Generation Deliverability	Excluded
2025W1-GD-W203	235483	01MDWBRK	235519	01W WINC	1	138	201	Generation Deliverability	Excluded
2025W1-GD-W346	235483	01MDWBRK	235519	01W WINC	1	138	201	Generation Deliverability	Excluded
2025W1-GD-W204	235483	01MDWBRK	235519	01W WINC	1	138	201	Generation Deliverability	Excluded
2025W1-IPD-W26	235483	01MDWBRK	235519	01W WINC	1	138	201	Individual Plant Deliverability	Excluded
2025W1-IPD-W29	235483	01MDWBRK	235519	01W WINC	1	138	201	Individual Plant Deliverability	Excluded
2025W1-IPD-W30	235483	01MDWBRK	235519	01W WINC	1	138	201	Individual Plant Deliverability	Excluded
2025W1-IPD-W33	235483	01MDWBRK	235519	01W WINC	1	138	201	Individual Plant Deliverability	Excluded
2025W1-N11-WT24	235502	01REDBUD	235519	01W WINC	1	138	201	N-1-1 Thermal	Excluded
2025W1-N11-ST7	235502	01REDBUD	235519	01W WINC	1	138	201	N-1-1 Thermal	Excluded
2025W1-SC-79	241928	AVON 1241928 138.kV	241928	AVON 1241928 138.kV	N/A	138	201	Short Circuit	Excluded
2025W1-SC-78	235299	BELMONT 138.kV	235299	BELMONT 138.kV	N/A	138	201	Short Circuit	Excluded
2025W1-N1-WT19	235483	01MDWBRK	235519	01W WINC	1	138/138	201/201	Baseline Thermal	Excluded
2025W1-N1-WT20	235483	01MDWBRK	235519	01W WINC	1	138/138	201/201	Baseline Thermal	Excluded
2025W1-N1-WT21	235483	01MDWBRK	235519	01W WINC	1	138/138	201/201	Baseline Thermal	Excluded
2025W1-N1-WT22	235483	01MDWBRK	235519	01W WINC	1	138/138	201/201	Baseline Thermal	Excluded
2025W1-N1-SVM65	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1 Voltage Magnitude	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2025W1-N1-SVM66	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1 Voltage Magnitude	Included
2025W1-N1-SVM67	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1 Voltage Magnitude	Included
2025W1-N1-SVM68	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1 Voltage Magnitude	Included
2025W1-N1-SVD21	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1 Voltage Drop	Included
2025W1-N1-SVD22	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1 Voltage Drop	Included
2025W1-N11-ST65	238529	02AIRPK+	238703	02ESPRNG	1	138	202	N-1-1 Thermal	Included
2025W1-N11-ST62	238529	02AIRPK+	238703	02ESPRNG	1	138	202	N-1-1 Thermal	Included
2025W1-N11-ST151	238529	02AIRPK+	238623	02CLARK	1	138	202	N-1-1 Thermal	Included
2025W1-N11-SVM238529	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1-1 Voltage Magnitude	Included
2025W1-N11-SVD238529	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1-1 Voltage Drop	Included
2025W1-N11-WVM238529	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1-1 Voltage Magnitude	Included
2025W1-N11-WVD238529	238529	02AIRPK+	238529	02AIRPK+	N/A	138	202	N-1-1 Voltage Drop	Included
2025W1-N11-WVD239196	239196	02ARM+BU	239196	02ARM+BU	N/A	138	202	N-1-1 Voltage Drop	Included
2025W1-ATSI-T1	240769	02BELLEVUE	240814	02GROTON	1	69	202	FERC 715 Thermal	Excluded
2025W1-N11-WVD238574	238574	02BELPT+	238574	02BELPT+	N/A	138	202	N-1-1 Voltage Drop	Included
2025W1-N11-WVM238574	238574	02BELPT+	238574	02BELPT+	N/A	138	202	N-1-1 Voltage Magnitude	Included
2025W1-N11-WT30	238574	02BELPT+	239134	02TANGY	1	138	202	N-1-1 Thermal	Included
2025W1-N11-WT31	238574	02BELPT+	239134	02TANGY	1	138	202	N-1-1 Thermal	Included
2025W1-N11-WT27	238574	02BELPT+	239134	02TANGY	1	138	202	N-1-1 Thermal	Included
2025W1-N11-WT28	238574	02BELPT+	239134	02TANGY	1	138	202	N-1-1 Thermal	Included
2025W1-N11-SVD238574	238574	02BELPT+	238574	02BELPT+	N/A	138	202	N-1-1 Voltage Drop	Included
2025W1-N11-ST93	238574	02BELPT+	239134	02TANGY	1	138	202	N-1-1 Thermal	Included
2025W1-N11-ST105	238574	02BELPT+	239134	02TANGY	1	138	202	N-1-1 Thermal	Included
2025W1-N11-ST85	239278	02BRDVIE	241980	AD2-163_POI	1	138	202	N-1-1 Thermal	Included
2025W1-N11-ST86	239278	02BRDVIE	241980	AD2-163_POI	1	138	202	N-1-1 Thermal	Included
2025W1-N11-ST110	239278	02BRDVIE	241980	AD2-163_POI	1	138	202	N-1-1 Thermal	Included
2025W1-N11-ST118	239278	02BRDVIE	241980	AD2-163_POI	1	138	202	N-1-1 Thermal	Included

New Flowgates

None

Financial Information

Capital spend start date	01/2026
Construction start date	06/2028
Project Duration (In Months)	53

Cost Containment Commitment

Cost cap (in current year)	CONFIDENTIAL INFORMATION
Cost cap (in-service year)	CONFIDENTIAL INFORMATION

Components covered by cost containment

1. Middle Fork Substation - Proposer
2. South Fork Substation - Proposer
3. Turkey Creek Substation - Proposer
4. Warrenton to Wheeler 230kV Overhead and Underground Transmission Line - Proposer
5. Vint Hill to Brickyard 230 kV Underground Transmission Line - Proposer
6. Front Royal - Vint Hill 500kV - Proposer
7. Cunningham - Middle Fork #1 500kV Transmission Line - Proposer
8. Cunningham - Middle Fork #2 500kV Transmission Line - Proposer
9. Middle Fork - Morrisville #1 500kV Tranmission Line - Proposer
10. Middle Fork - Morrisville #2 500kV Tranmission Line - Proposer
11. Rawlings - South Fork - Proposer

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	No
Escalation	No
Additional Information	CONFIDENTIAL 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?	CONFIDENTIAL INFORMATION
Additional cost containment measures not covered above	CONFIDENTIAL INFORMATION

Additional Comments

None