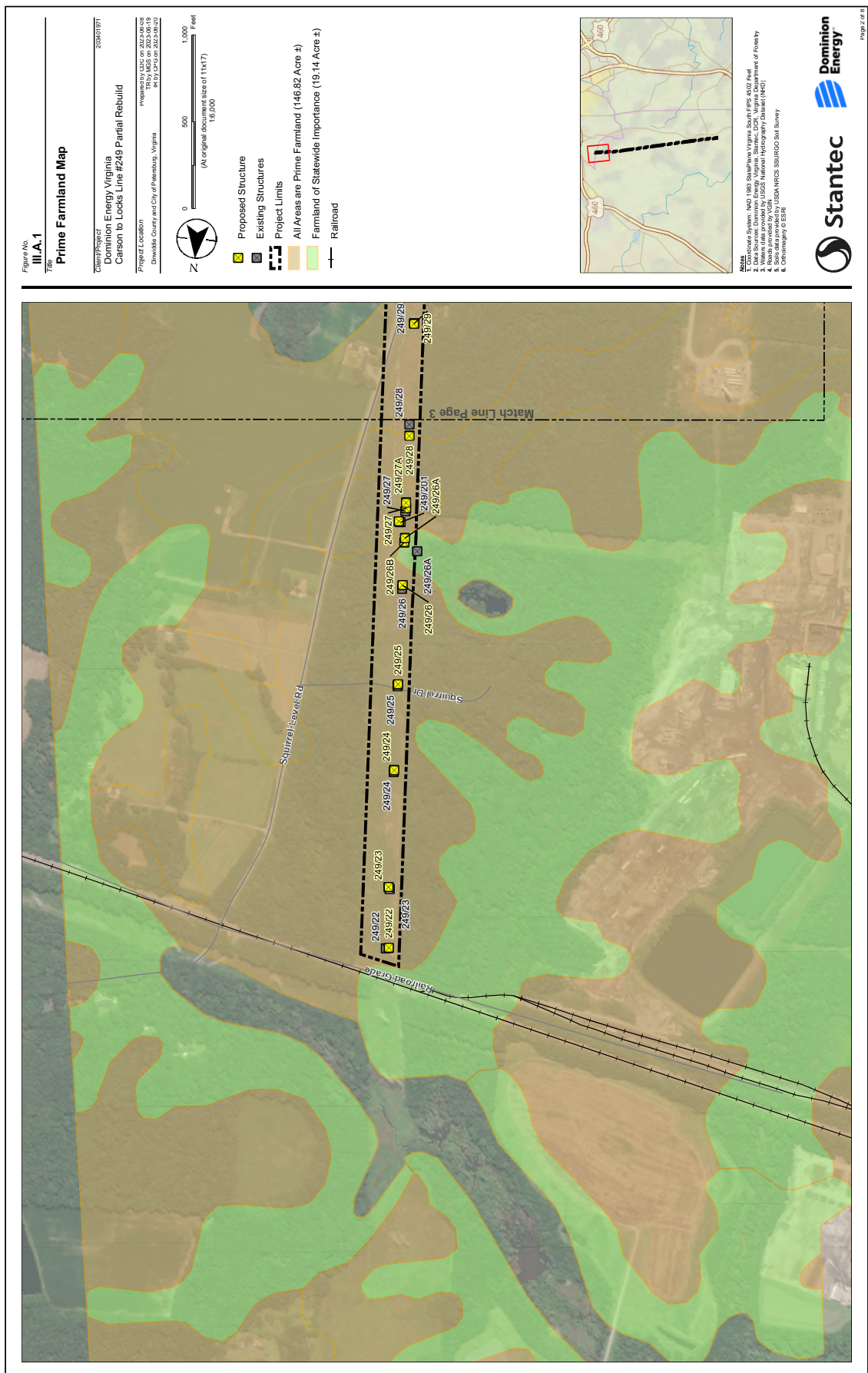
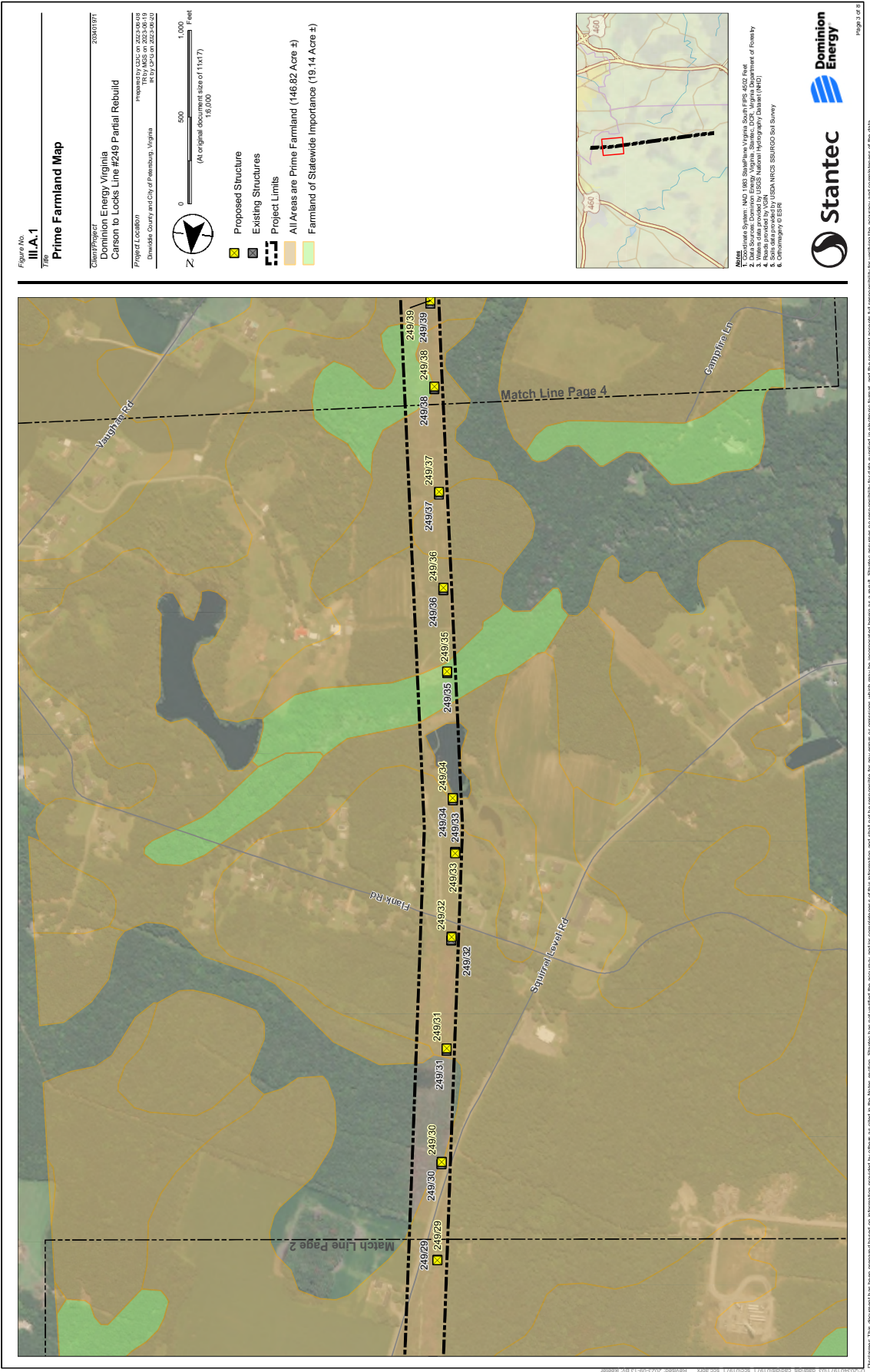
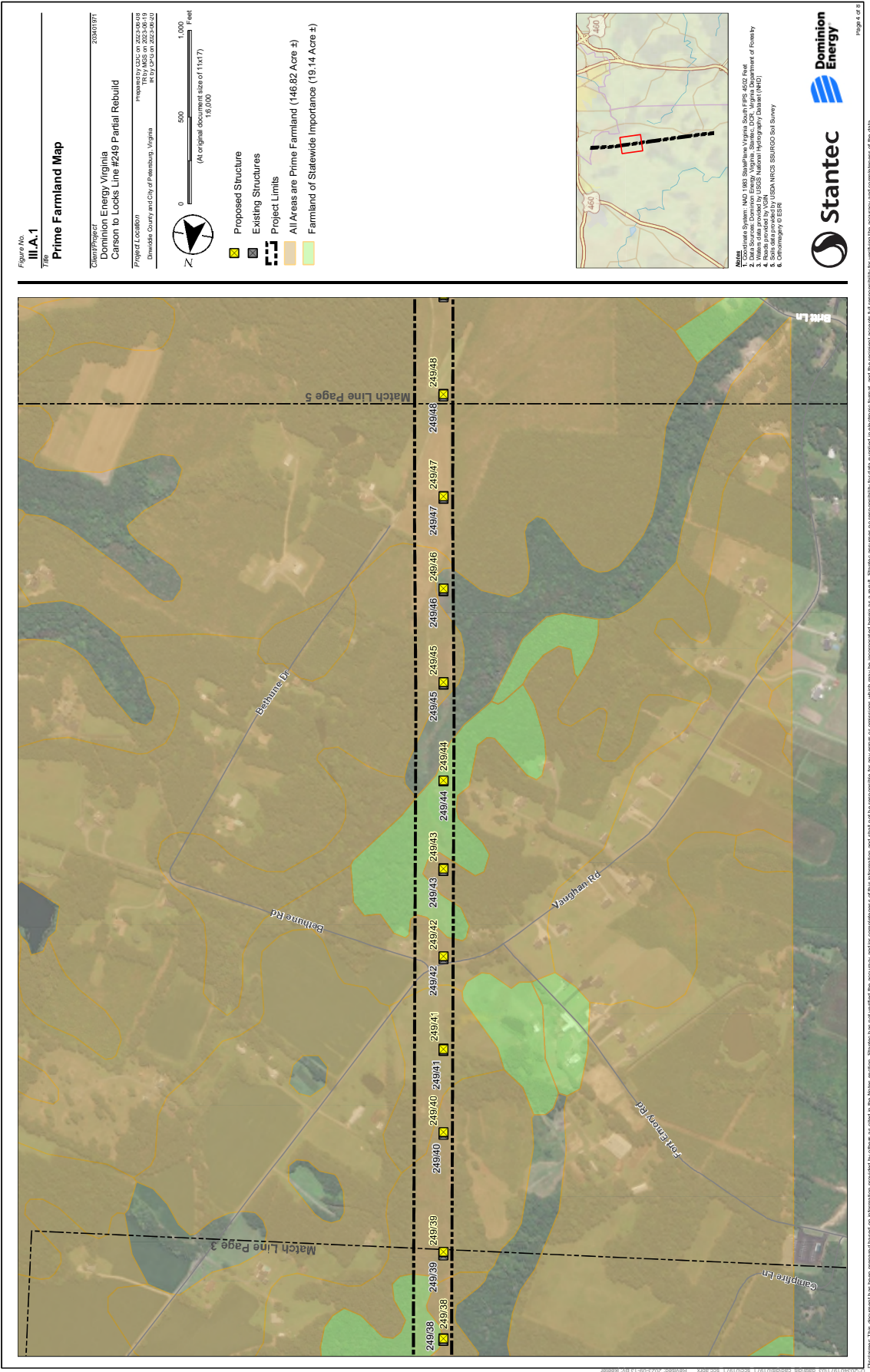
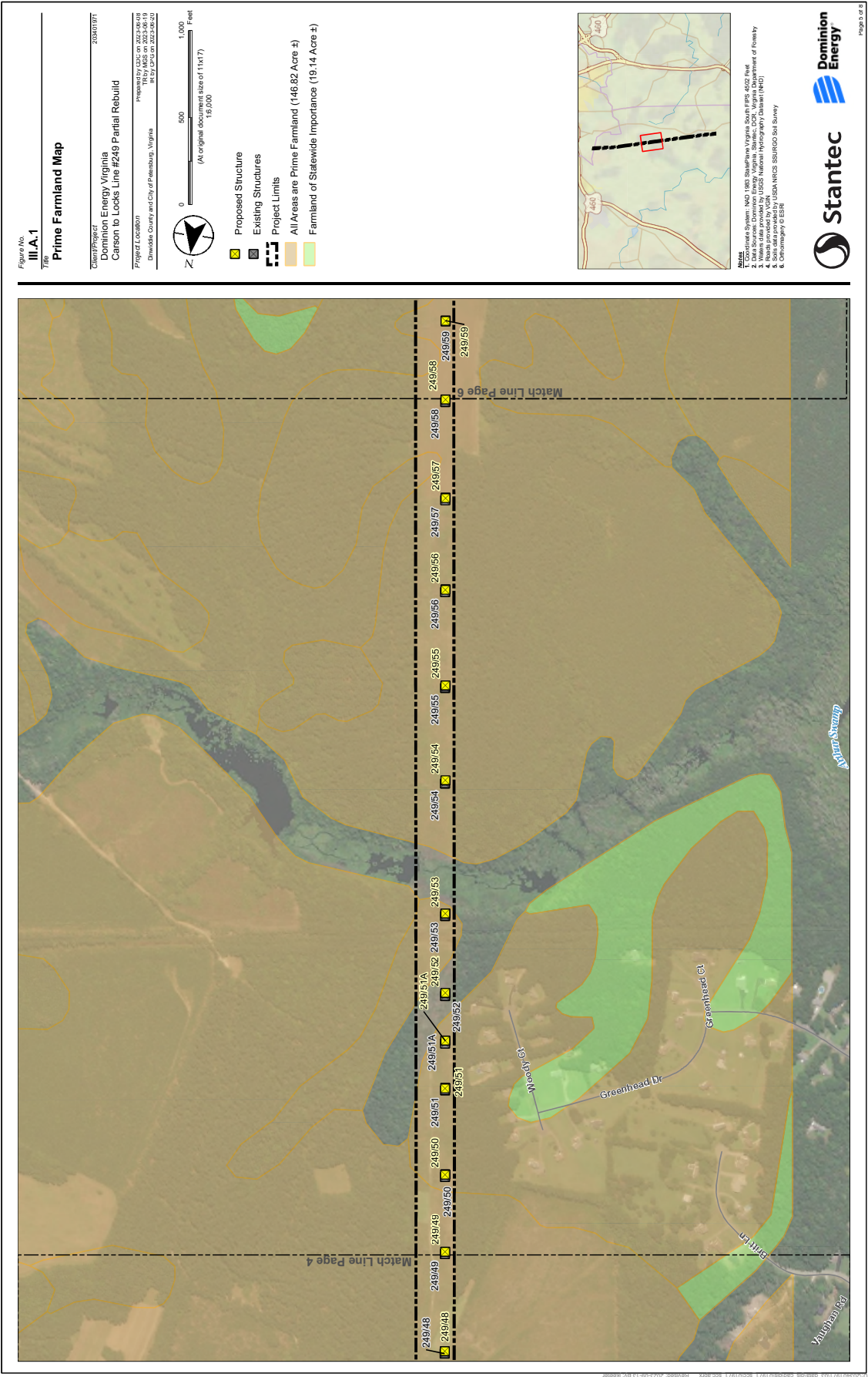


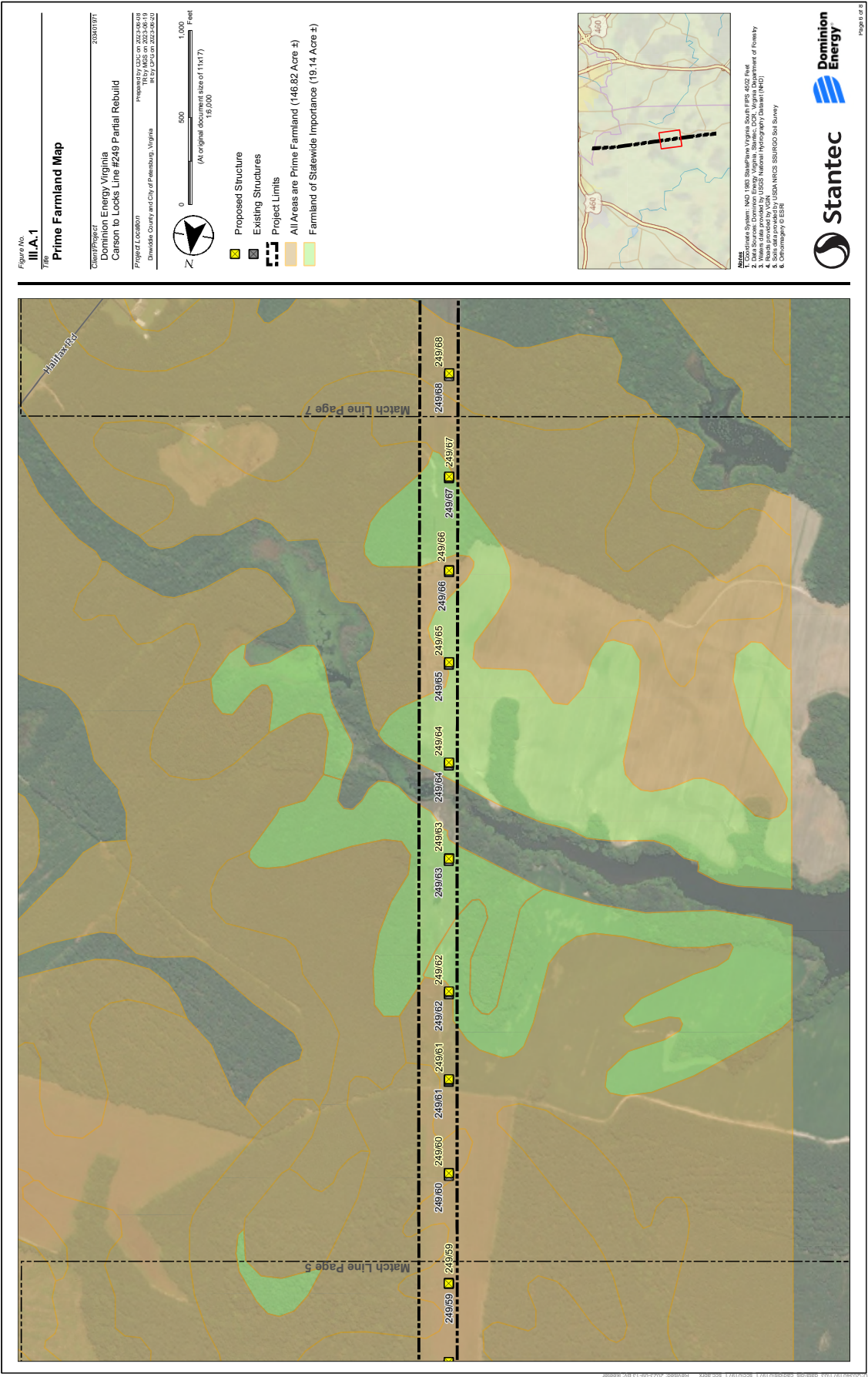


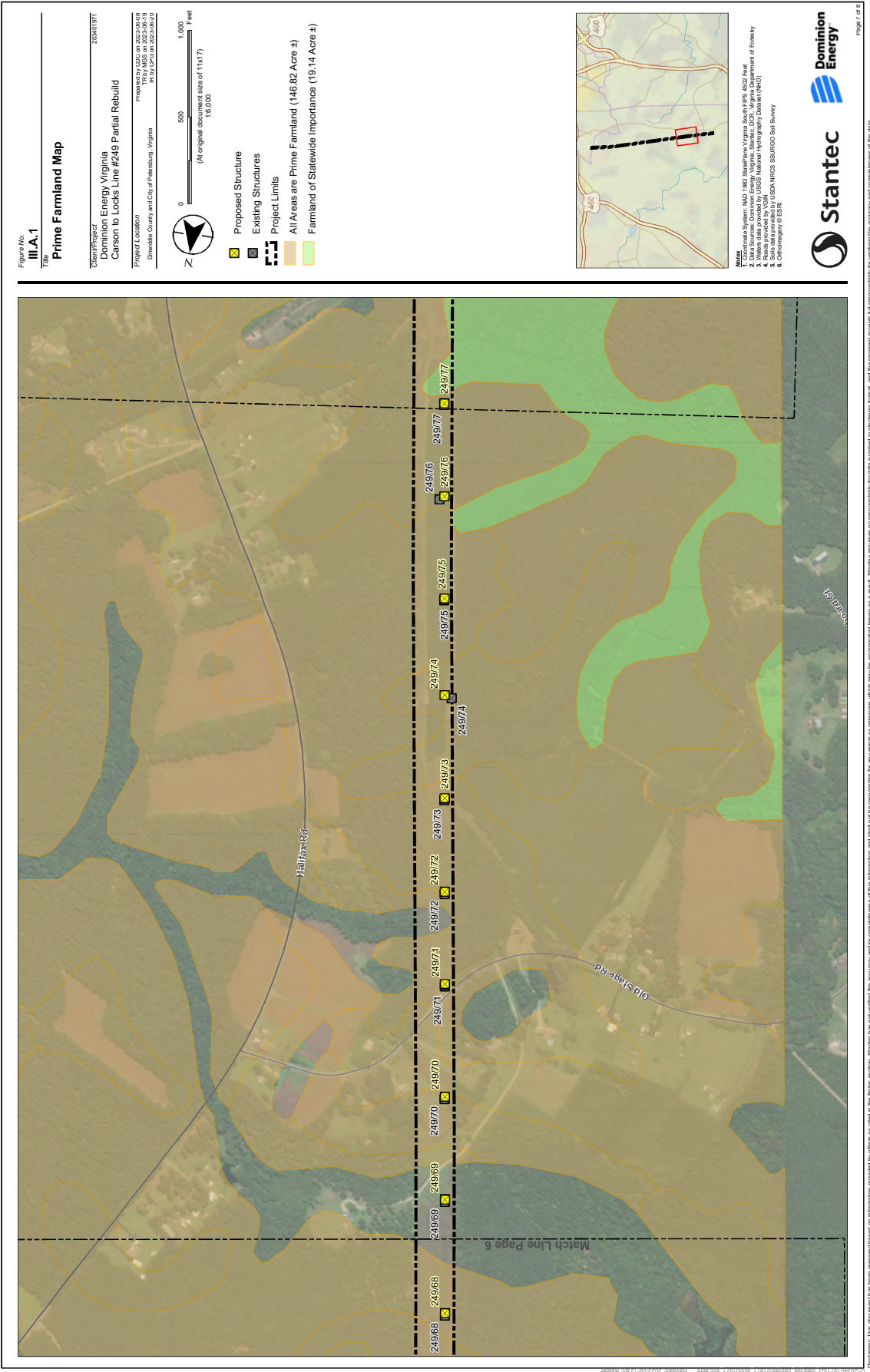














III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

B. Describe any public meetings the Applicant has had with neighborhood associations and/or officials of local, state or federal governments that would have an interest or responsibility with respect to the affected area or areas.

Response: In April 2023, the Company informed Dinwiddie County and the City of Petersburg of the proposed Rebuild Project.

In early May 2023 the Company launched an internet website dedicated to the proposed Rebuild Project: www.DominionEnergy.com/carsonlocks. The website includes a description of the proposed Rebuild Project and its benefits, an explanation of need, an overview map, photo simulations, an interactive tool to view individual structure height changes, and information on the Commission review process.

In April 2023, the Company sent postcards to approximately 389 property owners within 1,000 feet of proposed Rebuild Project. The postcard provided a brief overview of the proposed Rebuild Project and informed property owners that the Company will hold community meetings for residents to learn more about the project. In May 2023, the Company sent postcards that invited residents to attend community meetings to learn details relating to the proposed Rebuild Project and to answer any questions. A copy of the postcards are included as Attachment III.B.1 and Attachment III.B.2.

Community meetings were held on June 6, 2023 at Union Train Station in the City of Petersburg, and June 7, 2023 at the Dominion Energy Petersburg Office on W. Washington St in Dinwiddie County. At the community meetings, the Company made details available about the project need, project timing, and the Commission approval process. Community meeting materials have been posted on the website for the proposed Rebuild Project, including simulations from key locations. The key location simulations are included as Attachment III.B.3.

A newspaper advertisement for the community meetings was placed in the Dinwiddie Monitor. In addition, digital advertisements for the community meeting targeted residents in the 23805 zip code, which is the zip code most closely associated with the Rebuild Project. A copy of the digital and print ads is included as Attachment III.B.4.

An overview of the digital campaign results as of August 2023 is as follows.

- Pre-Event campaign results:
 - 89,290 Impressions Delivered
 - 473 Link Clicks
 - 0.53% Clickthrough Rate
 - 3,949 Video Views

- 31.88% Video Completion Rate
- 4,281 Ad Engagements

In September 2023, the Company sent a reminder postcard to residents about the project, previously held community meeting, information available on the website, and how to contact the team with any questions. The postcard also reminded residents of the Company's intentions to file an application with the SCC in fall 2023. A copy of the postcard is included as Attachment III.B.5.

As part of preparing for this Rebuild Project, the Company researched the demographics of the surrounding communities using 2021 U.S. Census data. This information revealed that there are six Census Block Groups within the Rebuild Project area that fall within one mile of the existing transmission line corridor. A review of ethnicity, income, age, and education census data identified populations within the study area that meet the Virginia Environmental Justice Act threshold to be defined as Environmental Justice Communities ("EJ Communities"). Communities of color have been identified in five of six Census Block Groups within the one-mile search area. Four of six Census Block Groups within the one-mile search area appear to be low-income as defined by the Virginia Environmental Justice Act, while the one remaining Census Block Group lacks available income data. The Company translated the project website to Spanish and included Spanish language on the community meeting invite postcard to ensure Hispanic communities identified in the Company's EJ Review had full access to project information.

Pursuant to Va. Code §§ 56-46.1 C and 56-259 C, as well as in Attachment 1 of these Guidelines, there is a strong preference for the use of existing utility right-of-way whenever feasible. The Rebuild Project is entirely within the existing right-of-way. The structural height average will increase by approximately five feet from 63 feet to 68 feet. Height differences will vary per structural location. Based on the analysis of the Rebuild Project, the Company does not anticipate disproportionately high or adverse impacts to the surrounding community and the EJ Communities located within the study area, consistent with the Rebuild Project design to reasonably minimize impacts.

In addition to its evaluation of impacts, the Company has and will continue to engage the EJ Communities and others affected by the Rebuild Project in a manner that allows them to meaningfully participate in the project development and approval process so that their views and input can be taken into consideration. See Attachment III.B.6 for a copy of the Company's Environmental Justice Policy.

Electric Transmission
P.O. Box 26666
Richmond, VA 23261



Actions Speak Louder

**Local Power Line Project
Information Enclosed**



Dominion Energy image. Not project specific.

IMPORTANT

Local Power Line Project Information

Carson-Locks 230 kV Electric Transmission Rebuild Project

Use your iPhone camera or the QR reader app on other smartphones to visit the project page on our website.



AT DOMINION ENERGY, we are dedicated to maintaining reliable and secure electric service in the communities we serve. You are receiving this postcard to notify you about an upcoming transmission project in your area.

We are planning to rebuild approximately 10.3 miles of existing 230 kilovolt (kV) transmission lines that run from our Carson Substation on Ellington Road in Dinwiddie County to our Locks Substation on Rawlings Lane in the City of Petersburg. The line will be rebuilt within the existing right of way; therefore, no new permanent right of way is required.

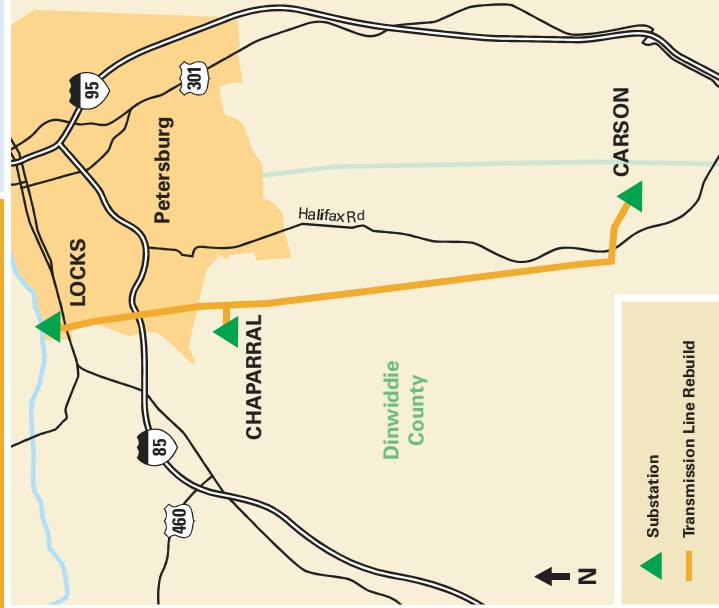
AT DOMINION ENERGY, protecting the grid and making it secure against natural and man-made acts is a top priority. We work alongside government officials to prepare for potential incidents that could affect our ability to provide electricity safely and reliably to the communities we serve. Learn how we're keeping you safe at powerlines101.dominionenergy.com.

We will replace the transmission structures in addition to replacing the current 230 kV wires. We are proposing to rebuild the lines with mostly weathering steel H-frame structures, which require less maintenance and have a longer service life than the current wooden H-frame structures. The new structures will be, on average, approximately five feet taller than the existing structures.

Be on the lookout for invitations to public meetings this summer where you can learn details about the project, timeline, and ask questions to our subject matter experts.

You may notice our crews performing initial surveys in our right of way corridor and reviewing potential access points to prepare for the project. Thank you for your understanding as we work to maintain reliable service in your community.

CONTACT US — Visit our website at DominionEnergy.com/carsonlocks for project updates. Or contact us by sending an email to powerline@dominionenergy.com or calling 888-291-0190.



This map is intended to serve as a representation of the project area and is not intended for detailed engineering purposes.

5/10/23 10:53 AM



Dominion Energy image. Not project specific.

Electric Transmission
P.O. Box 26666
Richmond, VA 23261



Actions Speak Louder

**YOU'RE INVITED TO A
COMMUNITY MEETING!
INFORMATION ENCLOSED**

IMPORTANT

Local Power Line Project Information

Carson-Locks 230 kV Electric Transmission Rebuild Project — Community Meetings

AT DOMINION ENERGY, we are committed to providing safe, reliable and secure energy to the communities we serve. To maintain reliable electric service to our customers, we are planning to rebuild and reconductor 10.3 miles of existing 230 kilovolt (kV) transmission lines that run between our Carson Substation in Dinwiddie County and our Locks Substation in the City of Petersburg, Virginia.

AT DOMINION ENERGY, protecting the grid and making it secure against natural and man-made acts is a top priority. We work alongside government officials to prepare for potential incidents that could affect our ability to provide electricity safely and reliably to the communities we serve. Learn how we're keeping you safe at powerlines101.dominionenergy.com.

utilize our interactive structure height comparison tool called the Backyard Application. This tool allows you to view details about the existing structures and compare them to the proposed structures.

We look forward to your attendance at the community meetings and will continue to engage you in our project development.

CONTACT US — Visit DominionEnergy.com/carsonlocks for project updates. Or contact us by calling 888-291-0190 or sending an email to powerline@dominionenergy.com.

Use your iPhone camera or the QR reader app on other smartphones to visit the project page on our website.

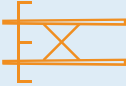


COMMUNITY MEETINGS

Tuesday, June 6, 2023
6 p.m. – 8 p.m.
(drop by anytime during these hours)
Union Train Station
103 River Street, Petersburg, VA 23803

•

Wednesday, June 7, 2023
6 p.m. – 8 p.m.
(drop by anytime during these hours)
Dominion Energy Office
26306 W. Washington Street, Petersburg, VA 23803

LEARN MORE

ASK QUESTIONS

PROVIDE FEEDBACK

Para obtener información sobre el proyecto en Español, visite DominionEnergy.com/carsonlocks.



Carson-Locks 230 kV rebuild OPEN HOUSE postcard April 2023.indd 2

5/10/23 10:53 AM

118

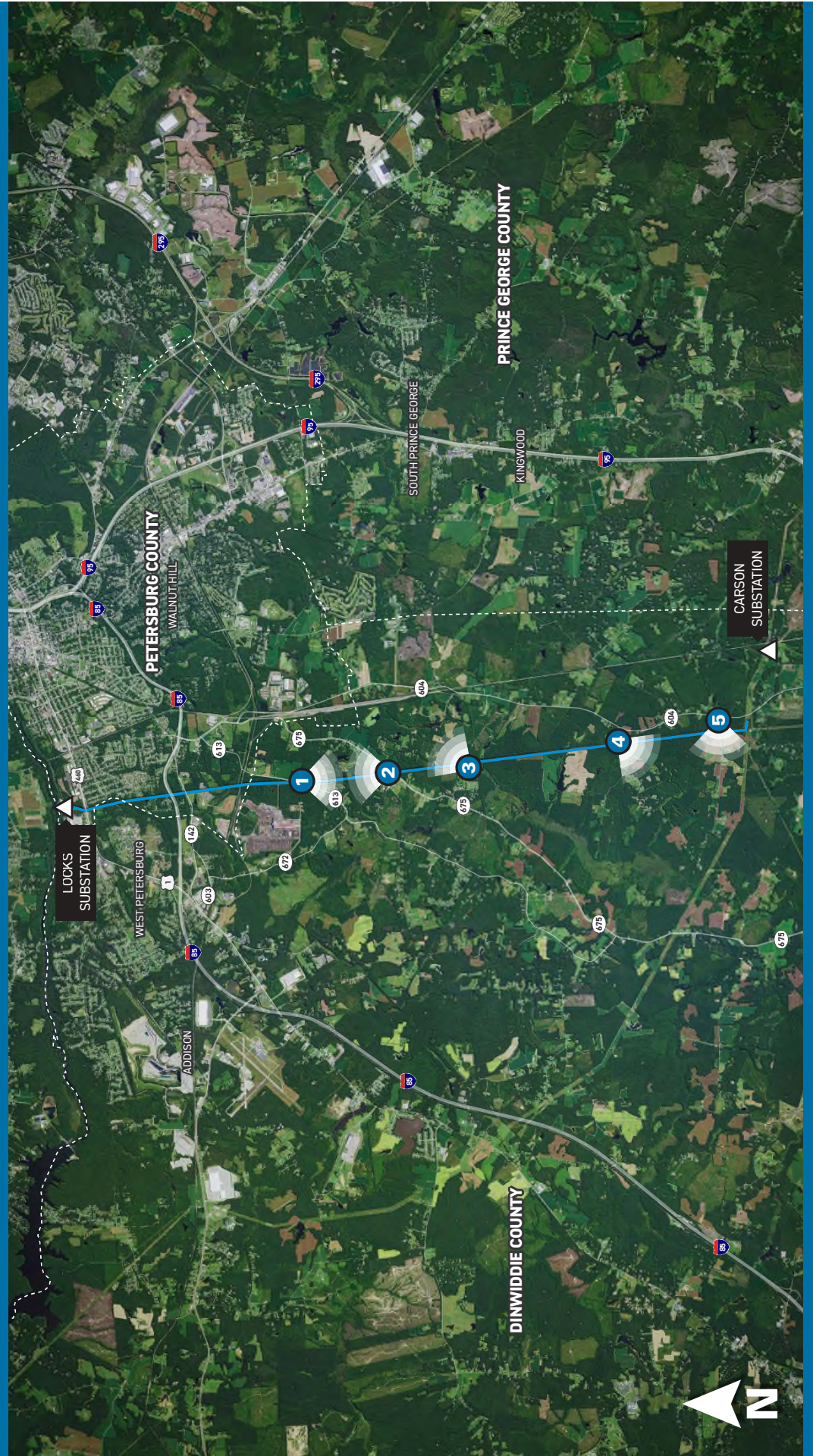
CARSON TO LOCKS

Transmission Line Project



Photo Location Map

- 1 Viewpoint Location
- Existing Transmission Line
- △ Existing Substation

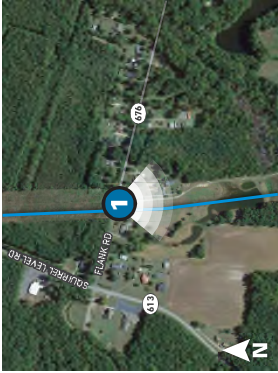


CARSON TO LOCKS

Transmission Line Project

Viewpoint 1

Date: 03/14/2023 Time: 2:12 pm
Viewing Direction: South



1 Viewpoint Location — Existing Transmission Line

Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.



EXISTING CONDITIONS



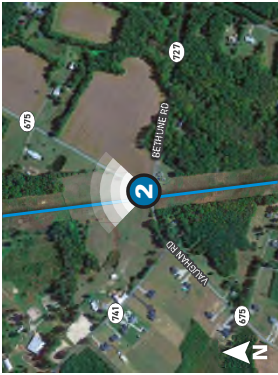
PROPOSED CONDITIONS

CARSON TO LOCKS

Transmission Line Project

Viewpoint 2

Date: 03/14/2023 Time: 3:31 pm
Viewing Direction: North



2 Viewpoint Location — Existing Transmission Line

Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.



EXISTING CONDITIONS



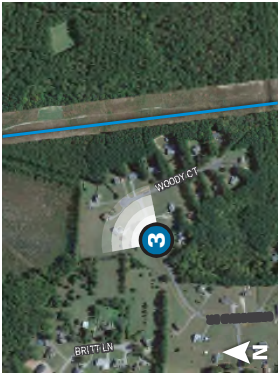
PROPOSED CONDITIONS

CARSON TO LOCKS

Transmission Line Project

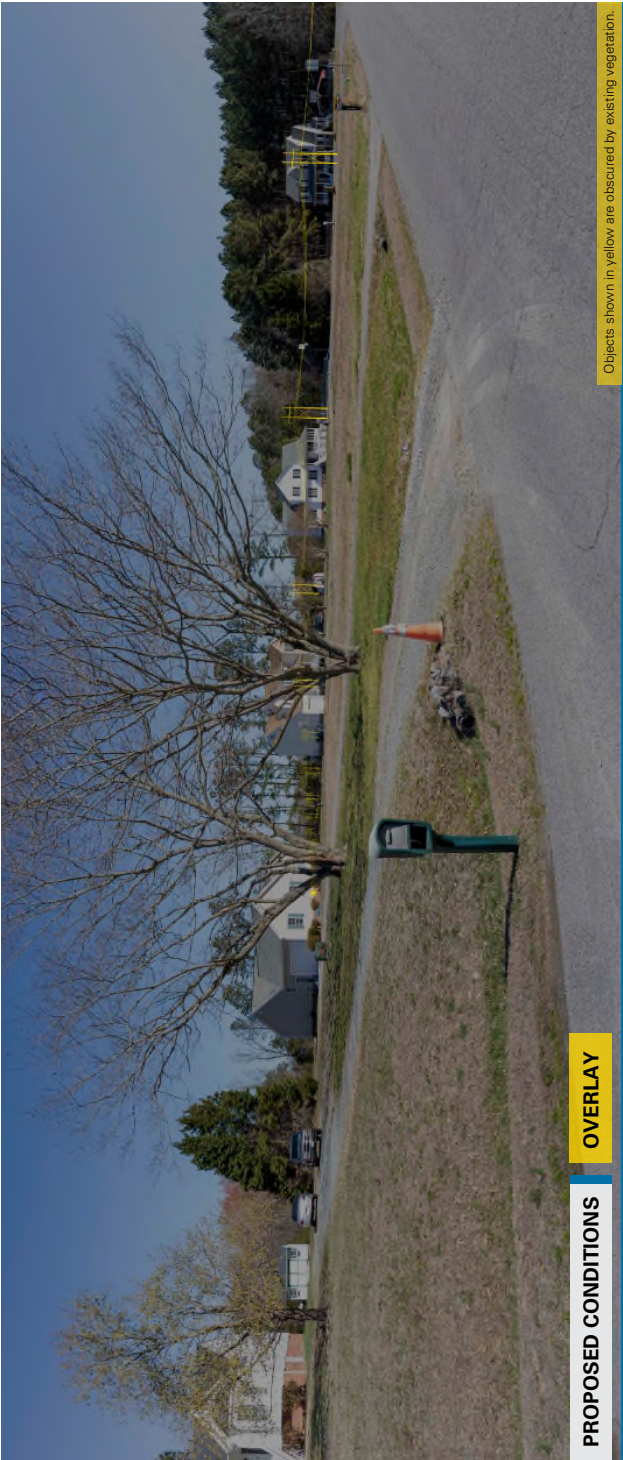
Viewpoint 3

Date: 03/14/2023 Time: 2:52 pm
Viewing Direction: Northeast



3 Viewpoint Location — Existing Transmission Line

Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

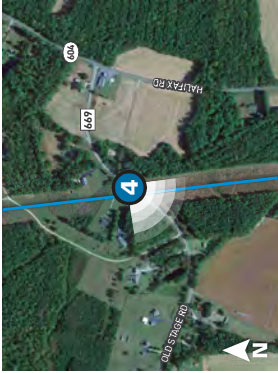


CARSON TO LOCKS

Transmission Line Project

Viewpoint 4

Date: 03/15/2023 Time: 9:28 am
Viewing Direction: Southwest



4 Viewpoint Location — Existing Transmission Line

Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.



EXISTING CONDITIONS



PROPOSED CONDITIONS

CARSON TO LOCKS

Transmission Line Project

Viewpoint 5

Date: 03/15/2023 Time: 8:52 am
Viewing Direction: West



5 Viewpoint Location — Existing Transmission Line

Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.



EXISTING CONDITIONS



PROPOSED CONDITIONS

You are invited to a Community Meeting

Learn about the Carson-Locks Electric Transmission Rebuild Project taking place in Dinwiddie County and the City of Petersburg.

Choose the meeting convenient for you:

Tuesday, June 6, 6-8 p.m.

Union Train Station
103 River Street
Petersburg, VA 23803

Wednesday, June 7, 6-8 p.m.

Dominion Energy Office
26306 W Washington Street
Petersburg, VA 23803

You can find event details and view a project map at **DominionEnergy.com/carsonlocks**



Use your phone's camera or QR reader app to visit the project page directly.

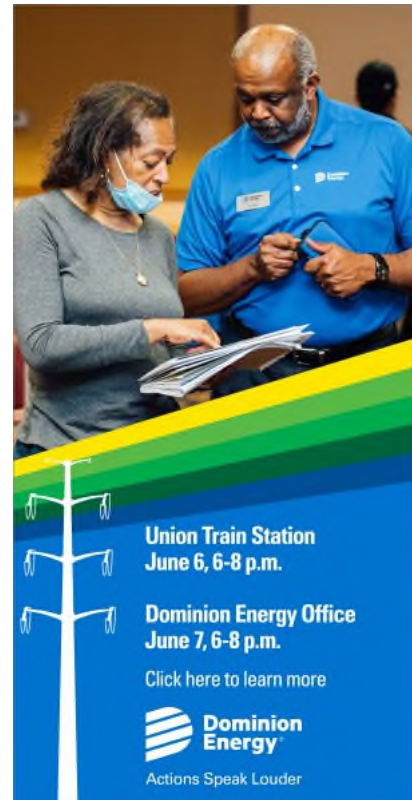


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Energy®**

Actions Speak Louder

**Dominion Energy
Electric Transmission**

Carson-Locks Event
Display



**Dominion Energy
Electric Transmission**

Carson-Locks Event
Nextdoor Imagery

Event Image:



**Dominion Energy
Electric Transmission**

Carson-Locks Event
Social Videos

[Pre-event Video \(Click to Play\)](#)



**Dominion Energy
Electric Transmission**

Carson-Locks Event
Newspaper

Print News Leader 9.8x10.25

You are invited to a Community Meeting

Learn about the Carson-Locks Electric Transmission Rebuild Project taking place in Dinwiddie County and the City of Petersburg.

Choose the meeting convenient for you:

Tuesday, June 6, 6-8 p.m.

Union Train Station
103 River Street
Petersburg, VA 23803

Wednesday, June 7, 6-8 p.m.

Dominion Energy Office
26306 W Washington Street
Petersburg, VA 23803

You can find event details and view a project map at [DominionEnergy.com/carsonlocks](https://www.dominionenergy.com/carsonlocks)



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**Dominion Energy
Electric Transmission**

Carson-Locks Event
Newspaper

Print News Leader 10x10.5

You are invited to a Community Meeting

Learn about the Carson-Locks Electric Transmission Rebuild Project taking place in Dinwiddie County and the City of Petersburg.

Choose the meeting convenient for you:

Tuesday, June 6, 6-8 p.m.

Union Train Station
103 River Street
Petersburg, VA 23803

Wednesday, June 7, 6-8 p.m.

Dominion Energy Office
26306 W Washington Street
Petersburg, VA 23803

You can find event details and view a project map at DominionEnergy.com/carsonlocks



Use your phone's camera or QR reader app to visit the project page directly.



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Dominion Energy image. Not project specific.

Electric Transmission
P.O. Box 26666
Richmond, VA 23261



Actions Speak Louder

**Local Power Line Project
Information Enclosed**

Local Power Line Project Information

Carson-Locks 230 kV Electric Transmission Rebuild Project

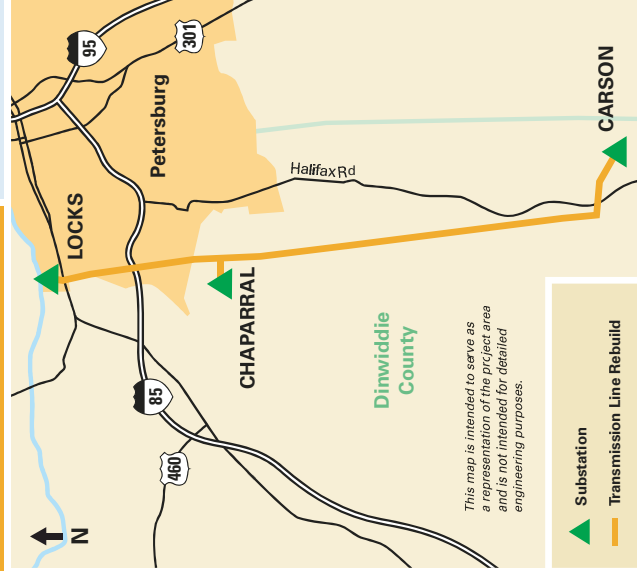
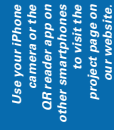
At Dominion Energy, we are committed to keeping the communities we serve informed of projects in their area. You are receiving this postcard because we would like to provide an update to the Carson-Locks 230 kV Electric Transmission Rebuild Project, which was announced in spring 2023.

- The existing wooden H-frame structures are proposed to be replaced with new, weathering steel H-frame structures, approximately five feet taller in height.

- Over the coming weeks, you may notice authorized contractors in the right of way corridor surveying the area. These surveys are necessary to continue project planning.**

In June 2023, we held two in-person community meetings to share information about the project with interested members of the public. We intend to file an application with the Virginia State Corporation Commission (SCC) in early fall 2023. If you were unable to attend the meetings, or have questions about the project, you can review information in the following ways:

- Visit our website DominionEnergy.com/carsonlocks to view project details, project timeline, maps, simulations and more.
- Explore our Backyard Application, an interactive map and structure height comparison tool on our project website. The Backyard Application allows you to view the proposed height and style of each new structure.
- Contact our team by email at powerline@dominionenergy.com or by phone at **888-291-0190** and reference “Carson to Locks Project”. A member of our project team will be happy to speak with you about the project.





Environmental Justice: Ongoing Commitment to Our Communities

At Dominion Energy, we are committed to providing reliable, affordable, clean energy in accordance with our values of safety, ethics, excellence, embrace change and team work. This includes listening to and learning all we can from the communities we are privileged to serve.

Our values also recognize that environmental justice considerations must be part of our everyday decisions, community outreach and evaluations as we move forward with projects to modernize the generation and delivery of energy.

To that end, communities should have a meaningful voice in our planning and development process, regardless of race, color, national origin, or income. Our neighbors should have early and continuing opportunities to work with us. We pledge to undertake collaborative efforts to work to resolve issues. We will advance purposeful inclusion to ensure a diversity of views in our public engagement processes.

Dominion Energy will be guided in meeting environmental justice expectations of fair treatment and sincere involvement by being inclusive, understanding, dedicated to finding solutions, and effectively communicating with our customers and our neighbors. We pledge to be a positive catalyst in our communities.

November 2018

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

C. Detail the nature, location, and ownership of each building that would have to be demolished or relocated if the project is built as proposed.

Response: The Company has reviewed the existing transmission corridor and is not aware of any residences encroaching on the existing corridor that would require demolition or removal in connection with the Rebuild Project.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

- D. Identify existing physical facilities that the line will parallel, if any, such as existing transmission lines, railroad tracks, highways, pipelines, etc. Describe the current use and physical appearance and characteristics of the existing ROW that would be paralleled, as well as the length of time the transmission ROW has been in use.**

Response: Construction of Line #249 was completed in 1962, and the line has been in continuous use since that time. The Rebuild Project parallels existing transmission Line #69 and Line #2002/2003 for the length of the existing right-of-way.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

E. Indicate whether the Applicant has investigated land use plans in the areas of the proposed route and indicate how the building of the proposed line would affect any proposed land use.

Response: The Company reviewed the *Comprehensive Plan for Dinwiddie County* and the *City of Petersburg, Virginia- Comprehensive Plan 2014* to evaluate the potential effect the Rebuild Project could have on future development. The placement and construction of electric transmission lines is only addressed to the degree of which companies are in the area and what their obligations are. The City of Petersburg's Comprehensive Plan discusses utility reliability and future repairs to limit system failures. With the exception of the approximately 0.25-mile temporary line, the Rebuild Project is located entirely within the existing right-of-way and is not expected to affect land use. The Rebuild Project is not expected to impact the character of the community as the transmission corridor has been in use for over 50 years. Dinwiddie County's Comprehensive Plan calls for exploring the potential to locate battlefield trails with utility corridors. The entire existing right-of-way for the Rebuild Project is shown on the Dinwiddie Battlefield Trails map as a location for a potential trail. The Rebuild Project right-of-way is all on private land and any potential trail would require easements or fee simple purchase of private land. Since the project is a rebuild of an existing transmission line, the Rebuild Project would not be expected to interfere with any proposed trail plans by Dinwiddie County.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

F. Government Bodies

- 1. Indicate if the Applicant determined from the governing bodies of each county, city and town in which the proposed facilities will be located whether those bodies have designated the important farmlands within their jurisdictions, as required by § 3.2-205 B of the Code.**
- 2. If so, and if any portion of the proposed facilities will be located on any such important farmland:**
 - a. Include maps and other evidence showing the nature and extent of the impact on such farmlands;**
 - b. Describe what alternatives exist to locating the proposed facilities on the affected farmlands, and why those alternatives are not suitable; and**
 - c. Describe the Applicant's proposals to minimize the impact of the facilities on the affected farmland.**

- Response:
1. Dinwiddie County and the City of Petersburg have not designated important farmlands in either of their comprehensive plans. See Section 2.L of the DEQ Supplement for details on prime farmland, farmland of statewide importance, and other agricultural resources.
 2.
 - (a) Not applicable
 - (b) Not applicable
 - (c) Not applicable

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

G. Identify the following that lie within or adjacent to the proposed ROW:

- 1. Any district, site, building, structure, or other object included in the National Register of Historic Places maintained by the U.S. Secretary of the Interior;**
- 2. Any historic architectural, archeological, and cultural resources, such as historic landmarks, battlefields, sites, buildings, structures, districts or objects listed or determined eligible by the Virginia Department of Historic Resources (“DHR”);**
- 3. Any historic district designated by the governing body of any city or county;**
- 4. Any state archaeological site or zone designated by the Director of the DHR, or its predecessor, and any site designated by a local archaeological commission, or similar body;**
- 5. Any underwater historic assets designated by the DHR, or predecessor agency or board;**
- 6. Any National Natural Landmark designated by the U.S. Secretary of the Interior;**
- 7. Any area or feature included in the Virginia Registry of Natural Areas maintained by the Virginia Department of Conservation and Recreation (“DCR”);**
- 8. Any area accepted by the Director of the DCR for the Virginia Natural Area Preserves System;**
- 9. Any conservation easement or open space easement qualifying under §§ 10.1-1009 – 1016, or §§ 10.1-1700 – 1705, of the Code (or a comparable prior or subsequent provision of the Code);**
- 10. Any state scenic river;**
- 11. Any lands owned by a municipality or school district; and**
- 12. Any federal, state or local battlefield, park, forest, game or wildlife preserve, recreational area, or similar facility. Features, sites, and the like listed in 1 through 11 above need not be identified again.**

- Response:
1. NRHP-listed resources that are within and adjacent to the Rebuild Project are provided in Table 4 of the DEQ Supplement. Section 2.I of the DEQ Supplement provides additional discussion.
 2. Resources that are eligible or potentially eligible for listing in the NRHP that are within and adjacent to the Rebuild Project are provided in Table 4 of the DEQ Supplement. Section 2.I of the DEQ Supplement provides additional discussion.
 3. None.
 4. Archaeological sites located within or adjacent to the right-of-way are identified in Section 2.I of the DEQ Supplement.
 5. None.
 6. None.
 7. None.
 8. None.
 9. The existing right-of-way traverses land owned by the American Battlefield Trust. The Company obtained two easements in 1931 between Structure #249/80 and Structure #249/86, which allow a 150' right of way with ability to build multiple lines, no height restrictions, no additional Company restrictions, and allowance for danger tree and encroachment clearing. The easements do not allow for underground rights. The Company understands that the American Battlefield Trust is seeking to place these two parcels under conservation easement with DHR. The Rebuild Project is not anticipated to affect these easements.
 10. None.
 11. None.
 12. The Petersburg National Battlefield is approximately 500 feet west of the Rebuild Project right-of-way at Flank Road.¹⁶ Additionally, the National Park Service holds title to a small (less than 0.05 acre) parcel south of Structure 2002/64 within the Company right-of-way shared with the Rebuild Project. The Rebuild Project is expected to be able to avoid this parcel during construction.

¹⁶ Although some GIS data makes it appear that the Petersburg National Battlefield crosses into the right of way, tax parcel data from Dinwiddie County confirms that it ends west of Squirrel Level Road.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

- H. List any registered aeronautical facilities (airports, helipads) where the proposed route would place a structure or conductor within the federally-defined airspace of the facilities. Advise of contacts, and results of contacts, made with appropriate officials regarding the effect on the facilities' operations.**

Response: The Federal Aviation Administration (“FAA”) is responsible for overseeing air transportation in the United States. The FAA manages air traffic in the United States and evaluates physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. The prime objective of the FAA in conducting an obstruction evaluation is to ensure the safety of air navigation and the efficient utilization of navigable airspace by aircraft.

The Company has reviewed the FAA’s website¹⁷ to identify airports within 10.0 nautical miles of the proposed Rebuild Project. The following airports were identified:

- Dinwiddie County Airport (PTB), approximately 3.4 miles west of Structure 249/22.
- Fort Lee NR 1 Heliport (VA35), approximately 6.4 miles northeast of Structure 249/22.
- Fort Lee AHP 3 Heliport (VA39), approximately 7.6 miles northeast of Structure 249/22.

In an email dated August 25, 2023, the Virginia Department of Aviation (“DOAv”) stated that a Form 7460 will need to be submitted to the FAA to initiate an aeronautical study to ensure that the proposed Project will not constitute a hazard to air navigation. This correspondence is provided as Attachment 2.O.2 of the DEQ Supplement. The Company will submit Form 7460 to the FAA prior to construction to initiate aeronautical studies and will design the proposed structures to avoid interference with air navigation.

¹⁷ See <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

- I. Advise of any scenic byways that are in close proximity to or that will be crossed by the proposed transmission line and describe what steps will be taken to mitigate any visual impacts on such byways. Describe typical mitigation techniques for other highways' crossings.**

Response: The Rebuild Project does not cross any scenic Virginia byways. Use of the existing right-of-way minimizes or eliminates permanent incremental impacts at road crossings.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

J. Identify coordination with appropriate municipal, state, and federal agencies.

Response: As described in Sections III.B and V.D, the Company solicited feedback from the County of Dinwiddie and the City of Petersburg regarding the proposed Rebuild Project. Below is a list of coordination efforts that have occurred with municipal, state and federal agencies:

- A Wetland and Waters Review has been completed and sent to DEQ's Office of Wetlands and Stream Protection to initiate the wetlands impact consultation. See Attachment 2.D.1 of the DEQ Supplement.
- A Stage I Pre-Application Analysis has been prepared and submitted to VDHR. See Attachment 2.I.2 of the DEQ Supplement.
- Correspondence was submitted to the agencies listed in Section V.C on August 25, 2023, describing the Rebuild Project and requesting comment. This correspondence is included as Attachment 2 of the DEQ Supplement.
- In March 2023, the Company solicited comments via letter from several federally recognized Native American tribes, including:

Cheroenhaka (Nottoway) Indian Tribe
Chickahominy Indian Tribe
Chickahominy Indian Tribe Eastern Division
Mattaponi Tribe
Monacan Indian Nation
Nansemond Indian Nation
Nottoway Indian Tribe of Virginia
Pamunkey Indian Tribe
Pamunkey Indian Tribal Resource Office
Patawomeck Indian Tribe of Virginia
Rappahannock Tribe
Upper Mattaponi Indian Tribe
Catawba Indian Nation
Delaware Nation, Oklahoma

A copy of the letter is included as Attachment III.J.1. The Delaware Nation Historic Preservation Department responded on April 18, 2023, indicating it had no immediate concerns. A copy of is included as Attachment III.J.2. The Pamunkey Indian Tribe responded on April 26, 2023, with questions to which the Company responded. The correspondence is included as Attachment III.J.3. The Catawba Indian Nation responded by letter dated May 4, 2023, indicating it had no immediate concerns. A copy of the letter is included as Attachment III.J.4.

Dominion Energy Virginia
Electric Transmission
P.O. Box 26666, Richmond, VA 23261-6666
DominionEnergy.com



March 27, 2023

Carson-Locks 230 kV Electric Transmission Rebuild Project

Dear Chief Red Hawk:

Dominion Energy is dedicated to maintaining safe, reliable, and affordable electric service in the communities we serve. You are receiving this project announcement letter as part of our efforts to proactively communicate early with Tribal Nations who may have an interest in this area. With your unique perspective, you can help us better plan projects in their earliest stages. Please note, this letter is not a notification of formal government-to-government consultation from any state or federal agency. Dominion Energy has been and continues to be committed to creating and maintaining strong, open, supportive, and mutually beneficial relationships with Tribal Nations.

We are reaching out to you now as we have an upcoming project in Dinwiddie County and the City of Petersburg, and you may have an interest in this area. To maintain reliable service for our customers, we are planning to rebuild and reductor approximately 10.3 miles of existing 230 kilovolt (kV) transmission lines that run between our Carson Substation on Ellington Road in Dinwiddie County and our Locks Substation on Rawlings Lane in the City of Petersburg. In addition to replacing the current 230 kV wires, a process known as reductoring, we will also need to replace the transmission structures. Reductoring will increase the ampacity, or maximum current carried, on the line. The line will be rebuilt within the existing right of way; therefore, no new permanent right of way is required. The lines were built primarily with wooden H-frame structures. We are proposing to rebuild these with mostly weathering steel (brown) H-frame structures, which require less maintenance and have a longer service life. The new structures will be, on average, approximately five feet taller than the existing structures.

Enclosed is a project overview map for your reference. This project requires review by the Virginia State Corporation Commission (SCC). Providing your input now allows us to consider any concerns you may have as we work to meet the project's needs. Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, other recipients of this letter include county and state historic, cultural, and scenic organizations, as well as Tribal Nations.

We will host in-person community meetings on **June 6 and June 7, 2023**, prior to submitting the SCC application. Please visit the project webpage at DominionEnergy.com/carsonlocks for details regarding the community meetings, project updates, and more project information.

If you have questions or would like to set up a meeting to discuss the project, contact me by calling 804-317-1669 or sending an email to Roxana.D.Demeter@dominionenergy.com. You may also contact Tribal Relations Manager Ken Custalow by sending an email to Ken.Custalow@dominionenergy.com.

Sincerely,

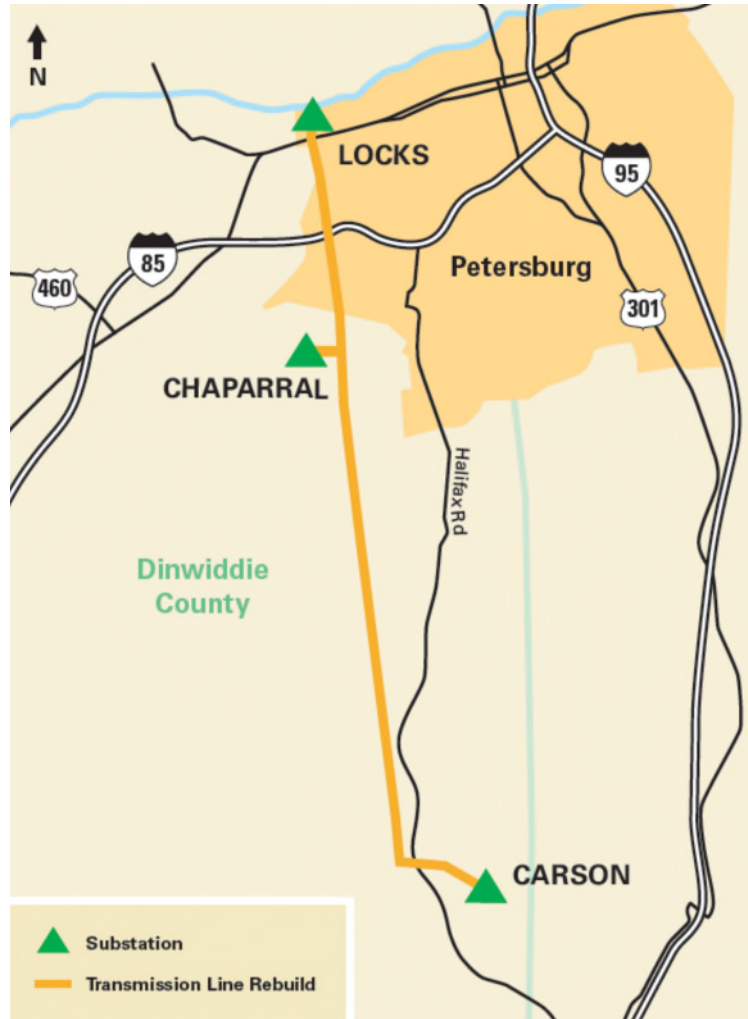
A handwritten signature in black ink that reads 'Roxana Demeter'.

Roxana Demeter
The Electric Transmission Project Team

[Enclosure: Project Overview Map]

Carson-Locks 230 kV Electric Transmission Rebuild Project

Dinwiddie County and the City of Petersburg, VA



This map is intended to serve as a representation of the project area and is not intended for detailed engineering purposes.

For more information about this project, please visit our website at DominionEnergy.com/carsonlocks. You may also contact us by sending an email to powerline@dominionenergy.com or calling 888-291-0190.



From: [Carissa Speck](#)
To: [Roxana D Demeter \(DEV Trans Distribution - 1\)](#)
Subject: [EXTERNAL] Carson-Locks 230 kV Electric Transmission Rebuild Project
Date: Tuesday, April 18, 2023 2:55:41 PM

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Hi Roxana,

Thank you for the project announcement letter. I see nothing of concern for Delaware Nation within the project area.

Wanishi,

Carissa Speck
Delaware Nation
Historic Preservation Director
405-247-2448 Ext. 1403
cspeck@delawarenation-nsn.gov

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From: [Kendall Stevens](#)
To: [Roxana D Demeter \(DEV Trans Distribution - 1\)](#)
Cc: [Ken Custalow \(Services - 6\)](#)
Subject: [EXTERNAL] RE: Carson-Locks Transmission Line Rebuild Project
Date: Tuesday, May 9, 2023 10:29:23 AM
Attachments: [image002.png](#)
[image003.png](#)

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Thank you for the clarification, Roxana. I apologize for the late response—I have been out of office and in the field for the past week.

Thank you for continuing to keep us in the loop on this project!

Respectfully,

Kendall Stevens

she/her/hers

Tribal Preservation Officer

Pamunkey Indian Tribal Resource Office

1054 Pocahontas Trail, King William, VA 23086

Phone: 804.843.2038 Fax: 866.422.3387

www.pamunkey.org



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From: roxana.d.demeter@dominionenergy.com <roxana.d.demeter@dominionenergy.com>
Sent: Friday, May 5, 2023 1:23 PM
To: Kendall Stevens <kendall.stevens@pamunkey.org>
Cc: ken.custalow@dominionenergy.com
Subject: RE: Carson-Locks Transmission Line Rebuild Project

Ms. Stevens,

Thank you for your email inquiry. Based on VCRIS, the northern portion of the right of way near the Locks Substation and the southern portion of the right of way from the Reams Substation to the Carson Substation appear to have had previous Phase I archaeological surveys conducted. Our team is scoped to prepare a Stage I and Stage II Analysis for the entire right of way. At this point we do not know the construction phasing, but do anticipate this project being construction in phases for structure installation and removal. The new structures will be within the same general area as the existing structures. I have copied Ken Custalow, Tribal Relations Manager, on this email. Please let us know if you have any additional questions. Thank you.

Sincerely,

Roxana Demeter
Electric Transmission Communications
Dominion Energy
804-317-1669 (c)



From: Kendall Stevens <kendall.stevens@pamunkey.org>
Sent: Wednesday, April 26, 2023 10:23 AM
To: Roxana D Demeter (DEV Trans Distribution - 1) <Roxana.D.Demeter@dominionenergy.com>
Cc: Shaleigh Howells <shaleigh.howells@pamunkey.org>
Subject: [EXTERNAL] Carson-Locks Transmission Line Rebuild Project

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Good morning Roxana,

Thank you for your outreach on Dominion's transmission line rebuild and reconductoring project in Dinwiddie and Petersburg, VA. The Pamunkey Indian Tribe does not have any comments at this time, but we do request clarification on project details. Has there been a Phase I archeological survey within this section of Dominion's ROW? VCRIS does not currently have any reports on file, though we understand that it may not be entirely accurate. Additionally, will poles be moved as they are being replaced?

Thank you,

Kendall Stevens

she/her/hers

Tribal Preservation Officer

Pamunkey Indian Tribal Resource Office

1054 Pocahontas Trail, King William, VA 23086

Phone: 804.843.2038 Fax: 866.422.3387

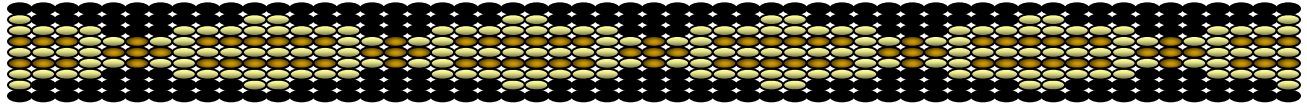
www.pamunkey.org



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Office 803-328-2427
Fax 803-328-5791



May 4, 2023

Attention: Roxana Demeter
Dominion Energy
P.O. Box 26666
Richmond, VA 23261

Re. THPO #	TCNS #	Project Description
2023-1108-16		Carson-Locks 230 kV Electric Transmission Rebuild Project

Dear Ms. Demeter,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail Caitlin.Rogers@catawba.com.

Sincerely,

Wenonah G. Haire
Tribal Historic Preservation Officer

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

K. Identify coordination with any non-governmental organizations or private citizen groups.

Response: In March 2023, the Company solicited comments via letter from the nongovernmental organizations and private citizen groups identified below. A copy of the letter template and overview map is included as Attachment III.K.1.

<u>Name</u>	<u>Organization</u>
Ms. Elizabeth S. Kostelny	Preservation Virginia
Mr. Thomas Gilmore	American Battlefield Trust
Mr. Jim Campi	American Battlefield Trust
Mr. Max Hokit	American Battlefield Trust
Ms. Eleanor Breen, PhD, RPA	Council of Virginia Archaeologists
Ms. Leighton Powell	Scenic Virginia
Ms. Elaine Chang	National Trust for Historic Preservation
Ms. Julie Bolthouse	Piedmont Environmental Council
Mr. John McCarthy	Piedmont Environmental Council
Dr. Cassandra Newby- Alexander, Dean	Norfolk State University
Mr. Dave Dutton	Dutton + Associates, LLC
Mr. Steven Williams	Colonial National Historical Park
Mr. Roger Kirchen	Virginia Department of Historic Resources
Ms. Adrienne Birge-Wilson	Virginia Department of Historic Resources

Dominion Energy Virginia
Electric Transmission
P.O. Box 26666, Richmond, VA 23261-6666
DominionEnergy.com



March 27, 2023

Carson-Locks 230 kV Electric Transmission Rebuild Project

Dear Ms. Kostelny:

Dominion Energy is dedicated to maintaining safe, reliable, and affordable electric service in the communities we serve. As a valued stakeholder with a unique perspective, you can help us meet these objectives as we plan necessary electric transmission infrastructure projects. We are reaching out to you as we have an upcoming project in Dinwiddie County and the City of Petersburg, and you may have an interest in this area.

To maintain reliable service to our customers, we are planning to rebuild and reconductor 10.3 miles of existing 230 kilovolt (kV) transmission lines that run between our Carson Substation on Ellington Road in Dinwiddie County and our Locks Substation on Rawlings Lane in the City of Petersburg. In addition to replacing the current 230 kV wires, a process known as reconductoring, we will also need to replace the transmission structures. Reconductoring will increase the ampacity, or maximum current carried, on the line. The line will be rebuilt within the existing right of way; therefore, no new permanent right of way is required. The lines were built primarily with wooden H-frame structures. We are proposing to rebuild these with mostly weathering steel (brown) H-frame structures, which require less maintenance and have a longer service life. The new structures will be, on average, approximately five feet taller than the existing structures.

Enclosed is a project overview map for your reference. This project requires review by the Virginia State Corporation Commission (SCC). Providing your input now allows us to consider any concerns you may have as we work to meet the project's needs. Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, other recipients of this letter include county and state historic, cultural, and scenic organizations, as well as Tribal Nations.

We will host in-person community meetings on **June 6 and June 7, 2023**, prior to submitting the SCC application. Please visit the project webpage at DominionEnergy.com/carsonlocks for details regarding the community meetings, project updates, and more project information.

If you have questions or would like to set up a meeting to discuss the project, contact me by calling 804-317-1669 or sending an email to Roxana.D.Demeter@dominionenergy.com.

Sincerely,

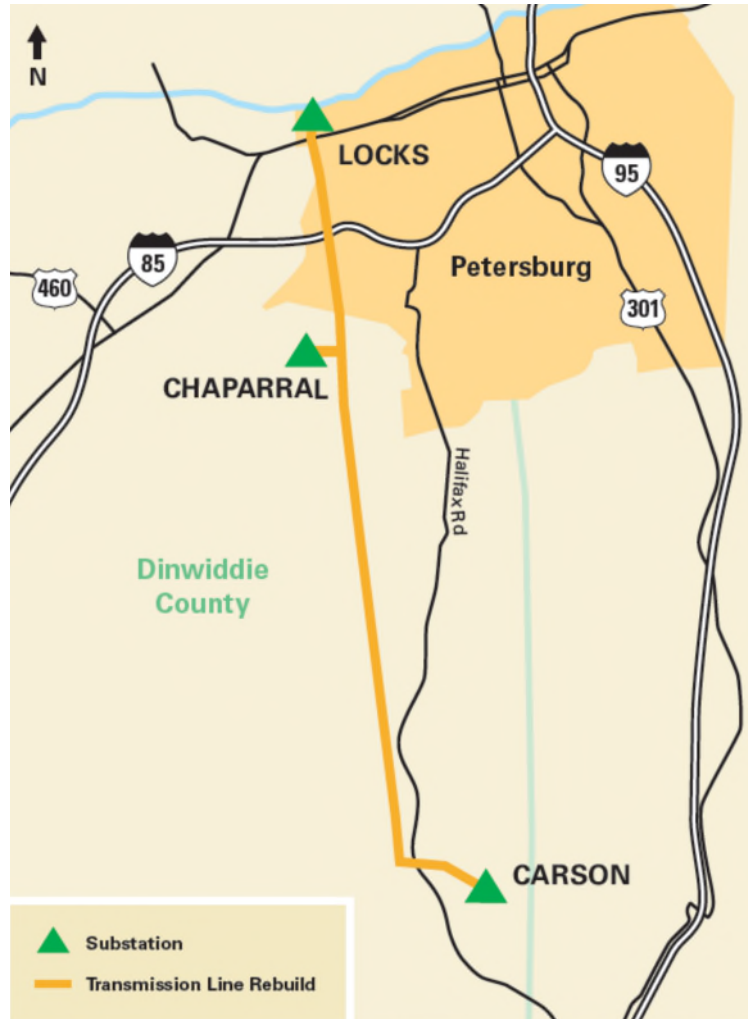
A handwritten signature in black ink that reads 'Roxana Demeter'.

Roxana Demeter
The Electric Transmission Project Team

[Enclosure: Project Overview Map]

Carson-Locks 230 kV Electric Transmission Rebuild Project

Dinwiddie County and the City of Petersburg, VA



This map is intended to serve as a representation of the project area and is not intended for detailed engineering purposes.

For more information about this project, please visit our website at DominionEnergy.com/carsonlocks. You may also contact us by sending an email to powerline@dominionenergy.com or calling 888-291-0190.



III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL, AND HISTORIC FEATURES

L. Identify any environmental permits or special permissions anticipated to be needed.

Response: See the table below for potential permits anticipated for the proposed Rebuild Project.

Potential Permits

Activity	Permit	Agency
Impacts to wetlands and waters of the U.S.	Nationwide Permit 57	U.S. Army Corps of Engineers
Impacts to wetlands and waters of the U.S.	Virginia Water Protection Permit	Virginia Department of Environmental Quality
Discharges of Stormwater from Construction Activities	Construction General Permit	Virginia Department of Environmental Quality
Work within VDOT right-of-way	Land Use Permit	Virginia Department of Transportation
Work within railroad corridor	Right-of-Entry Permit	CSX Transportation, Norfolk Southern Corporation
Airspace obstruction evaluation	FAA 7460-1	Federal Aviation Administration

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS (“EMF”)

- A. Provide the calculated maximum electric and magnetic field levels that are expected to occur at the edge of the ROW. If the new transmission line is to be constructed on an existing electric transmission line ROW, provide the present levels as well as the maximum levels calculated at the edge of ROW after the new line is operational.

Response: Public exposure to magnetic fields is best estimated by field levels from power lines calculated at annual average loading. For any day of the year, the EMF levels associated with average conditions provide the best estimate of potential exposure. Maximum (peak) values are less relevant as they may occur for only a few minutes or hours each year.

This section describes the levels of EMF associated with the existing and proposed transmission line. EMF levels are provided for both historical (2022) and future (2026) annual average and maximum (peak) loading conditions.

Existing lines – Historical Average Loading in 2022

EMF levels were calculated for the existing line at the **historical average** load condition 332.715 amps for Line #249 and 324.573 amps for Line #2002 at an operating voltage of 241.5 kV, and 207.653 amps for Line #69 at an operating voltage of 120.75 kV, when supported on the existing structures – see [Attachment II.A.5.a](#).

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at an historical average load operating temperature.

EMF levels at the edge of the right-of-way for the proposed Rebuild Project at the historical average loading:

Existing Lines - Historic Average Loading (2022)

Attachment	Left Edge ROW Per II.A.5 Drawing View		Right Edge ROW Per II.A.5 Drawing View	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
II.A.5.a	1.326	16.967	1.482	26.536

Existing lines – Historical Peak Loading in 2022

EMF levels were calculated for the existing line at the **historical peak** load condition of 1196.853 amps for Line #249 and 1074.775 amps for Line #2002, and at an operating voltage of 241.5 kV, and 407.913 amps for Line #69 at an operating

voltage of 120.75 kV when supported on the existing structures – see Attachment II.A.5.a.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at an historical peak load operating temperature.

EMF levels at the edge of the right-of-way for the proposed Rebuild Project at the historical peak loading:

Existing Lines - Historic Average Loading (2022)

Attachment	Left Edge ROW Per II.A.5 Drawing View		Right Edge ROW Per II.A.5 Drawing View	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
II.A.5.a	1.326	53.846	1.482	98.091

Proposed Project – Projected Average Loading in 2026

EMF levels were calculated for the proposed Project at the **projected average** load condition of 702.36 amps for Line #249 and 445.14 amps for Line #2002, and at an operating voltage of 241.5 kV, and 478.02 amps for Line #69 at an operating voltage of 120.75 kV, when supported on the proposed Rebuild Project structures – see Attachment II.A.5.b.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected average load operating temperature.

EMF levels at the edge of the right-of-way for the proposed Rebuild Project at the projected average loading:

Proposed Project - Projected Average Loading (2026)

Attachment	Left Edge ROW Per II.A.5 Drawing View		Right Edge ROW Per II.A.5 Drawing View	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
II.A.5.b	1.293	23.218	2.253	54.353

Proposed Project – Projected Peak Loading in 2026

EMF levels were calculated for the proposed Project at the **projected peak** load condition of **1107.6 amps** for Line #249 and 741.9 amps for Line #2002 and at an operating voltage of 241.5 kV, and 796.7 amps for Line #69 at an operating voltage

of 120.75 kV, when supported on the proposed Rebuild Project structures – see Attachment II.A.5.b.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at the projected peak load operating temperature.

EMF levels at the edge of the right-of-way for the proposed Rebuild Project at the projected peak loading:

Proposed Project - Projected Peak Loading (2026)

Attachment	Left Edge ROW Per II.A.5 Drawing View		Right Edge ROW Per II.A.5 Drawing View	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
II.A.5.b	.854	24.017	2.253	90.583

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS (“EMF”)

- B. If the Applicant is of the opinion that no significant health effects will result from the construction and operation of the line, describe in detail the reasons for that opinion and provide references or citations to supporting documentation.**

Response: The conclusions of multidisciplinary scientific review panels assembled by national and international scientific agencies during the past three decades are the foundation of the Company’s opinion that no adverse health effects are anticipated to result from the operation of the proposed Rebuild Project. Each of these panels has evaluated the scientific research related to health and power-frequency EMF and provided conclusions that form the basis of guidance to governments and industries. The Company regularly monitors the recommendations of these expert panels to guide their approach to EMF.

Research on EMF and human health varies widely in approach. Some studies evaluate the effects of high, short-term EMF exposures not typically found in people’s day-to-day lives on biological responses, while others evaluate the effects of common, lower EMF exposures found throughout communities. Studies also have evaluated the possibility of effects (e.g., cancer, neurodegenerative diseases, reproductive effects) of long-term exposure. Altogether, this research includes well over a hundred epidemiologic studies of people in their natural environment and many more laboratory studies of animals (*in vivo*) and isolated cells and tissues (*in vitro*). Standard scientific procedures, such as weight-of-evidence methods, were used by the expert panels assembled by agencies to identify, review, and summarize the results of this large and diverse research.

The reviews of EMF-related biological and health research have been conducted by numerous scientific and health agencies, including, for example, the European Health Risk Assessment Network on Electromagnetic Fields Exposure (“EFHRAN”), the International Commission on Non-Ionizing Radiation Protection (“ICNIRP”), the World Health Organization (“WHO”), the International Committee on Electromagnetic Safety (“ICES”), the Scientific Committee on Emerging and Newly Identified Health Risks (“SCENIHR”) of the European Commission, and the Swedish Radiation Safety Authority (“SSM”) [(formerly the Swedish Radiation Protection Authority (“SSI”)) (WHO, 2007; SCENIHR, 2009, 2015; EFHRAN, 2010, 2012; ICNIRP, 2010; SSM, 2015, 2016, 2018, 2019, 2020, 2021; 2022; ICES, 2019). The general scientific consensus of the agencies that have reviewed this research, relying on generally accepted scientific methods, is that the scientific evidence does not show that common sources of EMF in the environment, including transmission lines and other parts of the electric system, appliances, etc., are a cause of any adverse health effects.

The most recent reviews on this topic include the 2015 report by SCENIHR and annual reviews published by SSM (e.g., for the years 2015 through 2022). These reports, similar to previous reviews, found that the scientific evidence does not

confirm the existence of any adverse health effects caused by environmental or community exposure to EMF.

The WHO has recommended that countries adopt recognized international standards published by ICNIRP and ICES. Typical levels of EMF from Dominion's power lines outside its property and rights-of-way are far below the screening reference levels of EMF recommended for the general public and still lower than exposures equivalent to restrictions to limits on fields within the body (ICNIRP, 2010; ICES, 2019).

Thus, based on the conclusions of scientific reviews and the levels of EMF associated with the proposed Project, the Company has determined that no adverse health effects are anticipated to result from the operation of the proposed Rebuild Project.

References

European Health Risk Assessment Network on Electromagnetic Fields Exposure (EFHRAN). Report on the Analysis of Risks Associated to Exposure to EMF: *In Vitro* and *In Vivo* (Animals) Studies. Milan, Italy: EFHRAN, 2010.

European Health Risk Assessment Network on Electromagnetic Fields Exposure (EFHRAN). Risk Analysis of Human Exposure to Electromagnetic Fields (Revised). Report D2 of the EFHRAN Project. Milan, Italy: EFHRAN, 2012.

International Commission on Non-ionizing Radiation Protection (ICNIRP). Guidelines for limiting exposure to time-varying electric and magnetic fields (1 Hz to 100 kHz). *Health Phys* 99: 818-36, 2010.

International Committee on Electromagnetic Safety (ICES). IEEE Standard for Safety Levels with Respect to Human Exposure to Electromagnetic Fields 0 to 300 GHz. IEEE Std C95.1-2019. New York, NY: IEEE, 2019.

Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR). Health Effects of Exposure to EMF. Brussels, Belgium: European Commission, 2009.

Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR). Opinion on Potential Health Effects of Exposure to Electromagnetic Fields (EMF). Brussels, Belgium: European Commission, 2015.

Swedish Radiation Safety Authority (SSM). Research 2015:19. Recent Research on EMF and Health Risk - Tenth report from SSM's Scientific Council on Electromagnetic Fields. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2015.

Swedish Radiation Safety Authority (SSM). Research 2016:15. Recent Research on EMF and Health Risk - Eleventh report from SSM's Scientific Council on

Electromagnetic Fields, 2016. Including Thirteen years of electromagnetic field research monitored by SSM's Scientific Council on EMF and health: How has the evidence changed over time? Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2016.

Swedish Radiation Safety Authority (SSM). Research 2018:09. Recent Research on EMF and Health Risk - Twelfth report from SSM's Scientific Council on Electromagnetic Fields, 2017. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2018.

Swedish Radiation Safety Authority (SSM). Research 2019:08. Recent Research on EMF and Health Risk – Thirteenth Report from SSM's Scientific Council on Electromagnetic Fields, 2018. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2019.

Swedish Radiation Safety Authority (SSM). Research 2020:04. Recent Research on EMF and Health Risk - Fourteenth Report from SSM's Scientific Council on Electromagnetic Fields, 2019. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2020.

Swedish Radiation Safety Authority (SSM). Research 2021:08. Recent Research on EMF and Health Risk - Fifteenth report from SSM's Scientific Council on Electromagnetic Fields, 2020. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2021.

Swedish Radiation Safety Authority (SSM). Research 2022:16. Recent Research on EMF and Health Risk – Sixteenth report from SSM's Scientific Council on Electromagnetic Fields, 2021. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2022.

World Health Organization (WHO). Environmental Health Criteria 238: Extremely Low Frequency (ELF) Fields. Geneva, Switzerland: World Health Organization, 2007.

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS (“EMF”)

C. Describe and cite any research studies on EMF the Applicant is aware of that meet the following criteria:

- 1. Became available for consideration since the completion of the Virginia Department of Health’s most recent review of studies on EMF and its subsequent report to the Virginia General Assembly in compliance with 1985 Senate Joint Resolution No. 126;**
- 2. Include findings regarding EMF that have not been reported previously and/or provide substantial additional insight into findings; and**
- 3. Have been subjected to peer review.**

Response:

The Virginia Department of Health (“VDH”) conducted its most recent review and issued its report on the scientific evidence on potential health effects of extremely low frequency (“ELF”) EMF in 2000: “[T]he Virginia Department of Health is of the opinion that there is no conclusive and convincing evidence that exposure to extremely low frequency EMF emanated from nearby high voltage transmission lines is causally associated with an increased incidence of cancer or other detrimental health effects in humans.”¹⁸

The continuing scientific research on EMF exposure and health has resulted in many peer-reviewed publications since 2000. The accumulating research results have been regularly and repeatedly reviewed and evaluated by national and international health, scientific, and government agencies, including most notably:

- The WHO, which published one of the most comprehensive and detailed reviews of the relevant scientific peer-reviewed literature in 2007.
- SCENIHR, a committee of the European Commission, that published its assessments in 2009 and 2015;
- The SSM, which has published annual reviews of the relevant peer-reviewed scientific literature since 2003, with its most recent review published in 2022; and,
- EFHRAN, that published its reviews in 2010 and 2012.

The above reviews provide detailed analyses and summaries of relevant recent peer-reviewed scientific publications. The conclusions of these reviews that the evidence overall does not confirm the existence of any adverse health effects due

¹⁸ See <http://www.vdh.virginia.gov/content/uploads/sites/12/2016/02/highfinal.pdf>.

to exposure to EMF are consistent with the conclusions of the VDH report. With respect to the statistical association observed in some of the childhood leukemia epidemiologic studies, the most recent comprehensive review of the literature by SCENIHR, published in 2015, concluded that “no mechanisms have been identified and no support is existing [*sic*] from experimental studies that could explain these findings, which, together with shortcomings of the epidemiological studies prevent a causal interpretation” (SCENIHR, 2015, p. 16).

While research is continuing on multiple aspects of EMF exposure and health, many of the recent publications have focused on an epidemiologic assessment of the relationship between EMF exposure and childhood leukemia and neurodegenerative diseases. Of these, the following recent publications, published following the inclusion date (June 2014) for the SCENIHR (2015) report through May 2023, provided additional evidence and contributed to clarification of previous findings. Overall, new research studies have not provided evidence to alter the previous conclusions of scientific and health organizations, including the WHO and SCENIHR.

Epidemiologic studies of EMF and childhood leukemia published during the above referenced period include:

- Bunch et al. (2015) assessed the potential association between residential proximity to high-voltage underground cables and development of childhood cancer in the United Kingdom largely using the same epidemiologic data as in a previously published study on overhead transmission lines (Bunch et al., 2014). No statistically significant associations or trends were reported with either distance to underground cables or calculated magnetic fields from underground cables for any type of childhood cancers.
- Pedersen et al. (2015) published a case-control study that investigated the potential association between residential proximity to power lines and childhood cancer in Denmark. The study included all cases of leukemia (n=1,536), central nervous system tumor, and malignant lymphoma (n=417) diagnosed before the age of 15 between 1968 and 2003 in Denmark, along with 9,129 healthy control children matched on sex and year of birth. Considering the entire study period, no statistically significant increases were reported for any of the childhood cancer types.
- Salvan et al. (2015) compared measured magnetic-field levels in the bedroom for 412 cases of childhood leukemia under the age of 10 and 587 healthy control children in Italy. Although the statistical power of the study was limited because of the small number of highly exposed subjects, no consistent statistical associations or trends were reported between measured magnetic-field levels and the occurrence of leukemia among children in the study.
- Bunch et al. (2016) and Swanson and Bunch (2018) published additional analyses using data from an earlier study (Bunch et al., 2014). Bunch et al.

(2016) reported that the association with distance to power lines observed in earlier years was linked to calendar year of birth or year of cancer diagnosis, rather than the age of the power lines. Swanson and Bunch (2018) re-analyzed data using finer exposure categories (e.g., cut-points of every 50-meter distance) and broader groupings of diagnosis date (e.g., 1960-1979, 1980-1999, and 2000-on) and reported no overall associations between exposure categories and childhood leukemia for the later time periods (1980 and on), and consistent pattern for time periods prior to 1980.

- Crespi et al. (2016) conducted a case-control epidemiologic study of childhood cancers and residential proximity to high-voltage power lines (60 kV to 500 kV) in California. Childhood cancer cases, including 5,788 cases of leukemia and 3,308 cases of brain tumor, diagnosed under the age of 16 between 1986 and 2008, were identified from the California Cancer Registry. Controls, matched on age and sex, were selected from the California Birth Registry. Overall, no consistent statistically significant associations for leukemia or brain tumor and residential distance to power lines were reported.
- Kheifets et al. (2017) assessed the relationship between calculated magnetic-field levels from power lines and development of childhood leukemia within the same study population evaluated in Crespi et al. (2016). In the main analyses, which included 4,824 cases of leukemia and 4,782 controls matched on age and sex, the authors reported no consistent patterns, or statistically significant associations between calculated magnetic-field levels and childhood leukemia development. Similar results were reported in subgroup and sensitivity analyses. In two subsequent studies (Amoon et al., 2018a, 2019), the potential impact of residential mobility (i.e., moving residences between birth and diagnosis) on the associations reported in Crespi et al. (2016) and Kheifets et al. (2017) were examined. Amoon et al. (2019) concluded that while uncontrolled confounding by residential mobility had some impact on the association between EMF exposure and childhood leukemia, it was unlikely to be the primary driving force behind the previously reported associations.
- Amoon et al. (2018b) conducted a pooled analysis of 29,049 cases and 68,231 controls from 11 epidemiologic studies of childhood leukemia and residential distance from high-voltage power lines. The authors reported no statistically-significant association between childhood leukemia and proximity to transmission lines of any voltage. Among subgroup analyses, the reported associations were slightly stronger for leukemia cases diagnosed before 5 years of age and in study periods prior to 1980. Adjustment for various potential confounders (e.g., socioeconomic status, dwelling type, residential mobility) had little effect on the estimated associations.
- Kyriakopoulou et al. (2018) assessed the association between childhood acute leukemia and parental occupational exposure to social contacts, chemicals, and electromagnetic fields. The study was conducted at a major pediatric hospital in Greece and included 108 cases and 108 controls matched for age, gender,

and ethnicity. Statistically non-significant associations were observed between paternal exposure to magnetic fields and childhood acute leukemia for any of the exposure periods examined (1 year before conception; during pregnancy; during breastfeeding; and from birth until diagnosis); maternal exposure was not assessed due to the limited sample size. No associations were observed between childhood acute leukemia and exposure to social contacts or chemicals.

- Auger et al. (2019) examined the relationship between exposure to EMF during pregnancy and risk of childhood cancer in a cohort of 784,000 children born in Québec. Exposure was defined using residential distance to the nearest high-voltage transmission line or transformer station. The authors reported statistically non-significant associations between proximity to transformer stations and any cancer, hematopoietic cancer, or solid tumors. No associations were reported with distance to transmission lines.
- Crespi et al. (2019) investigated the relationship between childhood leukemia and distance from high-voltage lines and calculated magnetic-field exposure, separately and combined, within the California study population previously analyzed in Crespi et al. (2016) and Kheifets et al. (2017). The authors reported that neither close proximity to high-voltage lines nor exposure to calculated magnetic fields alone were associated with childhood leukemia; an association was observed only for those participants who were both close to high-voltage lines (< 50 meters) and had high calculated magnetic fields (≥ 0.4 microtesla [μT]) (i.e., 4 milligauss [mG]). No associations were observed with low-voltage power lines (< 200 kV). In a subsequent study, Amoon et al. (2020) examined the potential impact of dwelling type on the associations reported in Crespi et al. (2019). Amoon et al. (2020) concluded that while the type of dwelling at which a child resides (e.g., single-family home, apartment, duplex, mobile home) was associated with socioeconomic status and race or ethnicity, it was not associated with childhood leukemia and did not appear to be a potential confounder in the relationship between childhood leukemia and magnetic-field exposure in this study population.
- Swanson et al. (2019) conducted a meta-analysis of 41 epidemiologic studies of childhood leukemia and magnetic-field exposure published between 1979 and 2017 to examine trends in childhood leukemia development over time. The authors reported that while the estimated risk of childhood leukemia initially increased during the earlier period, a statistically non-significant decline in estimated risk has been observed from the mid-1990s until the present (i.e., 2019).
- Talibov et al. (2019) conducted a pooled analysis of 9,723 cases and 17,099 controls from 11 epidemiologic studies to examine the relationship between parental occupational exposure to magnetic fields and childhood leukemia. No statistically significant association was found between either paternal or maternal exposure and leukemia (overall or by subtype). No associations were

observed in the meta-analyses.

- Nunez-Enriquez et al. (2020) assessed the relationship between residential magnetic-field exposure and B-lineage acute lymphoblastic leukemia (“BALL”) in children under 16 years of age in Mexico. The study included 290 cases and 407 controls matched on age, gender, and health institution; magnetic-field exposure was assessed through the collection of 24-hour measurements in the participants’ bedrooms. While the authors reported some statistically significant associations between elevated magnetic-field levels and development of B-ALL, the results were dependent on the chosen cut-points.
- Seomun et al. (2021) performed a meta-analysis based on 33 previously published epidemiologic studies investigating the potential relationship between magnetic-field exposure and childhood cancers, including leukemia and brain cancer. For childhood leukemia, the authors reported statistically significant associations with some, but not all, of the chosen cut-points for magnetic-field exposure. The associations between magnetic-field exposure and childhood brain cancer were statistically non-significant. The study provided limited new insight as most of the studies included in the current meta-analysis, were included in previously conducted meta- and pooled analyses.
- Amoon et al. (2022) conducted a pooled analysis of four studies of residential exposure to magnetic fields and childhood leukemia published following a 2010 pooled analysis by Kheifets et al. (2010). The study by Amoon et al. (2022) compared the exposures of 24,994 children with leukemia to the exposures of 30,769 controls without leukemia in California, Denmark, Italy, and the United Kingdom. Exposure was assessed by measured or calculated magnetic fields at their residences. The exposure of these two groups to magnetic fields were found not to significantly differ. A decrease in the combined effect estimates in epidemiologic studies was observed over time, and the authors concluded that their findings, based on the most recent studies, were “not in line” with previous pooled analyses that reported an increased risk of childhood leukemia.
- Brabant et al. (2022) performed a literature review and meta-analysis of studies of childhood leukemia and magnetic-field exposure. The overall analysis included 21 epidemiologic studies published from 1979 to 2020. The authors reported a statistically significant association, which they noted was “mainly explained by the studies conducted before 2000.” The authors reported a statistically significant association between childhood leukemia and measured or calculated magnetic-field exposures $> 0.4 \mu\text{T}$ (4 mG); no statistically significant overall associations were reported between childhood leukemia and lower magnetic-field exposures ($< 0.4 \mu\text{T}$ [4 mG]), residential distance from power lines, or wire coding configuration. An association between childhood leukemia and electric blanket use was also reported. The overall results were likely influenced by the inclusion of a large number of earlier studies; 10 of the 21 studies in the main analysis were published prior to 2000. Studies published prior to 2000 included fewer studies deemed to be of higher study quality, as

determined by the authors, compared to studies published after 2000.

- Nguyen et al. (2022) investigated whether potential pesticide exposure from living in close proximity to commercial plant nurseries confounds the association between magnetic-field exposure and childhood leukemia development reported within the California study population previously analyzed in Crespi et al. (2016) and Kheifets et al. (2017). The authors in Nguyen et al. (2022) noted that while the association between childhood leukemia and magnetic-field exposure was “slightly attenuated” after adjusting for nursery proximity or when restricting to subjects living > 300 meters from nurseries, their results “do not support plant nurseries as an explanation for observed childhood leukemia risks.” The authors further noted that close residential proximity to nurseries may be an independent risk factor for childhood leukemia.
- Zagar et al. (2023) examined the relationship between magnetic fields and childhood cancers, including childhood leukemia, in Slovenia. Cancer cases, including 194 cases of leukemia, were identified from the Slovenian Cancer Registry; cases were then classified into one of five calculated magnetic-field exposure levels (ranging from < 0.1 μ T to $\geq$ 0.4 μ T) based on residential distance to high-voltage (e.g., 110-kV, 220-kV, and 400-kV) power lines. The authors reported that less than 1% of Slovenian children and adolescents lived in an area near high-voltage power lines. No differences in the development of childhood cancers, including leukemia, brain tumors, or all cancers combined, were reported across the five exposure categories.

Epidemiologic studies of EMF and neurodegenerative diseases published during the above referenced period include:

- Seelen et al. (2014) conducted a population-based case-control study in the Netherlands and included 1,139 cases diagnosed with amyotrophic lateral sclerosis (“ALS”) between 2006 and 2013 and 2,864 frequency-matched controls. The shortest distance from the case and control residences to the nearest high-voltage power line (50 kV to 380 kV) was determined by geocoding. No statistically significant associations between residential proximity to power lines with voltages of either 50 to 150 kV or 220 to 380 kV and ALS were reported.
- Sorahan and Mohammed (2014) analyzed mortality from neurodegenerative diseases in a cohort of approximately 73,000 electricity supply workers in the United Kingdom. Cumulative occupational exposure to magnetic-fields was calculated for each worker in the cohort based on their job titles and job locations. Death certificates were used to identify deaths from neurodegenerative diseases. No associations or trends for any of the included neurodegenerative diseases (Alzheimer’s disease, Parkinson’s disease, and ALS) were observed with various measures of calculated magnetic fields.

- Koeman et al. (2015, 2017) analyzed data from the Netherlands Cohort Study of approximately 120,000 men and women who were enrolled in the cohort in 1986 and followed up until 2003. Lifetime occupational history, obtained through questionnaires, and job-exposure matrices on ELF magnetic fields and other occupational exposures were used to assign exposure to study subjects. Based on 1,552 deaths from vascular dementia, the researchers reported a statistically not significant association of vascular dementia with estimated exposure to metals, chlorinated solvents, and ELF magnetic fields. However, because no exposure-response relationship for cumulative exposure was observed and because magnetic fields and solvent exposures were highly correlated with exposure to metals, the authors attributed the association with ELF magnetic fields and solvents to confounding by exposure to metals (Koeman et al., 2015). Based on a total of 136 deaths from ALS among the cohort members, the authors reported a statistically significant, approximately two-fold association with ELF magnetic fields in the highest exposure category. This association, however, was no longer statistically significant when adjusted for exposure to insecticides (Koeman et al., 2017).
- Fischer et al. (2015) conducted a population-based case-control study that included 4,709 cases of ALS diagnosed between 1990 and 2010 in Sweden and 23,335 controls matched to cases on year of birth and sex. The study subjects' occupational exposures to ELF magnetic fields and electric shocks were classified based on their occupations, as recorded in the censuses and corresponding job-exposure matrices. Overall, neither magnetic fields nor electric shocks were related to ALS.
- Vergara et al. (2015) conducted a mortality case-control study of occupational exposure to electric shock and magnetic fields and ALS. They analyzed data on 5,886 deaths due to ALS and over 58,000 deaths from other causes in the United States between 1991 and 1999. Information on occupation was obtained from death certificates and job-exposure matrices were used to categorize exposure to electric shocks and magnetic fields. Occupations classified as "electric occupations" were moderately associated with ALS. The authors reported no consistent associations for ALS, however, with either electric shocks or magnetic fields, and they concluded that their findings did not support the hypothesis that exposure to either electric shocks or magnetic fields explained the observed association of ALS with "electric occupations."
- Pedersen et al. (2017) investigated the occurrence of central nervous system diseases among approximately 32,000 male Danish electric power company workers. Cases were identified through the national patient registry between 1982 and 2010. Exposure to ELF magnetic fields was determined for each worker based on their job titles and area of work. A statistically significant increase was reported for dementia in the high exposure category when compared to the general population, but no exposure-response pattern was identified, and no similar increase was reported in the internal comparisons among the workers. No other statistically significant increases among workers

were reported for the incidence of Alzheimer's disease, Parkinson's disease, motor neuron disease, multiple sclerosis, or epilepsy, when compared to the general population, or when incidence among workers was analyzed across estimated exposure levels.

- Vinceti et al. (2017) examined the association between ALS and calculated magnetic-field levels from high-voltage power lines in Italy. The authors included 703 ALS cases and 2,737 controls; exposure was assessed based on residential proximity to high-voltage power lines. No statistically significant associations were reported and no exposure-response trend was observed. Similar results were reported in subgroup analyses by age, calendar period of disease diagnosis, and study area.
- Checkoway et al. (2018) investigated the association between Parkinsonism¹⁹ and occupational exposure to magnetic fields and several other agents (endotoxins, solvents, shift work) among 800 female textile workers in Shanghai. Exposure to magnetic fields was assessed based on the participants' work histories. The authors reported no statistically significant associations between Parkinsonism and occupational exposure to any of the agents under study, including magnetic fields.
- Gunnarsson and Bodin (2018) conducted a meta-analysis of occupational risk factors for ALS. The authors reported a statistically significant association between occupational exposures to EMF, estimated using a job-exposure matrix, and ALS among the 11 studies included. Statistically significant associations were also reported between ALS and jobs that involve working with electricity, heavy physical work, exposure to metals (including lead) and chemicals (including pesticides), and working as a nurse or physician. The authors reported some evidence for publication bias. In a subsequent publication, Gunnarsson and Bodin (2019) updated their previous meta-analysis to also include Parkinson's disease and Alzheimer's disease. A slight, statistically significant association was reported between occupational exposure to EMF and Alzheimer's disease; no association was observed for Parkinson's disease.
- Huss et al. (2018) conducted a meta-analysis of 20 epidemiologic studies of ALS and occupational exposure to magnetic fields. The authors reported a weak overall association; a slightly stronger association was observed in a subset analysis of six studies with full occupational histories available. The authors noted substantial heterogeneity among studies, evidence for publication bias, and a lack of a clear exposure-response relationship between exposure and ALS.

¹⁹ Parkinsonism is defined by Checkoway et al. (2018) as “a syndrome whose cardinal clinical features are bradykinesia, rest tremor, muscle rigidity, and postural instability. Parkinson disease is the most common neurodegenerative form of [parkinsonism]” (p. 887).

- Jalilian et al. (2018) conducted a meta-analysis of 20 epidemiologic studies of occupational exposure to magnetic fields and Alzheimer's disease. The authors reported a moderate, statistically significant overall association; however, they noted substantial heterogeneity among studies and evidence for publication bias.
- Rööslä and Jalilian (2018) performed a meta-analysis using data from five epidemiologic studies examining residential exposure to magnetic fields and ALS. A statistically non-significant negative association was reported between ALS and the highest exposed group, where exposure was defined based on distance from power lines or calculated magnetic-field level.
- Gervasi et al. (2019) assessed the relationship between residential distance to overhead power lines in Italy and risk of Alzheimer's dementia and Parkinson's disease. The authors included 9,835 cases of Alzheimer's dementia and 6,810 cases of Parkinson's disease; controls were matched by sex, year of birth, and municipality of residence. A weak, statistically non-significant association was observed between residences within 50 meters of overhead power lines and both Alzheimer's dementia and Parkinson's disease, compared to distances of over 600 meters.
- Peters et al. (2019) examined the relationship between ALS and occupational exposure to both magnetic fields and electric shock in a pooled study of data from three European countries. The study included 1,323 ALS cases and 2,704 controls matched for sex, age, and geographic location; exposure was assessed based on occupational title and defined as low (background), medium, or high. Statistically significant associations were observed between ALS and ever having been exposed above background levels to either magnetic fields or electric shocks; however, no clear exposure-response trends were observed with exposure duration or cumulative exposure. The authors also noted significant heterogeneity in risk by study location.
- Filippini et al. (2020) investigated the associations between ALS and several environmental and occupational exposures, including electromagnetic fields, within a case-control study in Italy. The study included 95 cases and 135 controls matched on age, gender, and residential province; exposure to electromagnetic fields was assessed using the participants' responses to questions related to occupational use of electric and electronic equipment, occupational EMF exposure, and residential distance to overhead power lines. The authors reported a statistically significant association between ALS and residential proximity to overhead power lines and a statistically non-significant association between ALS and occupational exposure to EMF; occupational use of electric and electronic equipment was associated with a statistically nonsignificant decrease in ALS development.
- Huang et al. (2020) conducted a meta-analysis of 43 epidemiologic studies examining potential occupational risk factors for dementia or mild cognitive

impairment. The authors included five cohort studies and seven case-control studies related to magnetic-field exposure. For both study types, the authors reported positive associations between dementia and work-related magnetic field exposures. The paper, however, provided no information on the occupations held by the study participants, their magnetic-field exposure levels, or how magnetic-field levels were assessed; therefore, the results are difficult to interpret. The authors also reported a high level of heterogeneity among studies. Thus, this analysis adds little, if any, to the overall weight of evidence on a potential association between dementia and magnetic fields.

- Jalilian et al. (2020) conducted a meta-analysis of ALS and occupational exposure to both magnetic fields and electric shocks within 27 studies from Europe, the United States, and New Zealand. A weak, statistically significant association was reported between magnetic-field exposure and ALS; however, the authors noted evidence of study heterogeneity and publication bias. No association was observed between ALS and electric shocks.
- Chen et al. (2021) conducted a case-control study to examine the association between occupational exposure to electric shocks, magnetic fields, and motor neuron disease (“MND”) in New Zealand. The study included 319 cases with a MND diagnosis (including ALS) and 604 controls, matched on age and gender; exposure was assessed using the participants’ occupational history questionnaire responses and previously developed job-exposure matrices for electric shocks and magnetic fields. The authors reported no associations between MND and exposure to magnetic fields; positive associations were reported between MND and working at a job with the potential for electric shock exposure.
- Grebeneva et al. (2021) evaluated disease rates among electric power company workers in the Republic of Kazakhstan. The authors included three groups of “exposed” workers who “were in contact with equipment generating [industrial frequency EMF]” (a total of 161 workers), as well as 114 controls “who were not associated with exposure to electromagnetic fields.” Disease rates were assessed “based on analyzing the sick leaves of employees” from 2010 to 2014 and expressed as “incidence rate per 100 employees.” The authors reported a higher “incidence rate” of “diseases of the nervous system” in two of the exposed categories compared to the non-exposed group. No meaningful conclusions from the study could be drawn, however, because no specific diagnoses within “*diseases of the nervous system*” were identified in the paper and no clear description was provided on how the authors defined and calculated “incidence rate” for the evaluated conditions. In addition, no measured or calculated magnetic-field levels were presented by the authors.
- Filippini et al. (2021) conducted a meta-analysis to assess the dose-response relationship between residential exposure to magnetic fields and ALS. The authors identified six ALS epidemiologic studies, published between 2009 and 2020, that assessed exposure to residential magnetic fields by either distance

from overhead power lines or magnetic-field modeling. They reported a decrease in risk of ALS in the highest exposure categories for both distance-based and modeling-based exposure estimates. The authors also reported that their dose-response analyses “showed little association between distance from power lines and ALS”; the data were too sparse to conduct a dose-response analysis for modeled magnetic-field estimates. The authors noted that their study was limited by small sample size, “imprecise” exposure categories, the potential for residual confounding, and by “some publication bias.”

- Jalilian et al. (2021) conducted a meta-analysis of occupational exposure to ELF magnetic fields and electric shocks and development of ALS. The authors included 27 studies from Europe, the United States, and New Zealand that were published between 1983 and 2019. A weak, statistically significant association was reported between magnetic-field exposure and ALS, and no association was observed between electric shocks and ALS. Indications of publication bias and “moderate to high” heterogeneity were identified for the studies of magnetic-field exposure and ALS, and the authors noted that “the results should be interpreted with caution.”
- Sorahan and Nichols (2022) investigated magnetic-field exposures and mortality from MND in a large cohort of employees of the former Central Electricity Generating Board of England and Wales. The study included nearly 38,000 employees first hired between 1942 and 1982 and still employed in 1987. Estimates of exposure magnitude, frequency, and duration were calculated using data from the power stations and the employees’ job histories, and were described in detail in a previous publication (Renew et al., 2003). Mortality from MND in the total cohort was observed to be similar to national rates. No statistically significant dose-response trends were observed with lifetime, recent, or distant magnetic-field exposure; statistically significant associations were observed for some categories of recent exposure, but not for the highest exposure category.
- Vasta et al. (2023) examined the relationship between residential distance to power lines and ALS development in a cohort study of 1,098 participants in Italy. The authors reported no differences in the age of ALS onset or ALS progression rate between low-exposed and high-exposed participants based on residential distance to power lines at the time of the participants’ diagnosis. Similarly, no differences were observed when exposure was based on residential distance to repeater antennas.

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V. NOTICE

- A. Furnish a proposed route description to be used for public notice purposes. Provide a map of suitable scale showing the route of the proposed project. For all routes that the Applicant proposed to be noticed, provide minimum, maximum and average structure heights.**

Response: A map showing the existing route to be used for the Rebuild Project is provided as Attachment V.A. A written description of the route is as follows:

The proposed route for the Rebuild Project is located within an approximately 6.7-mile existing transmission corridor right-of-way, which includes at various points 115 kV Line #69 and 230 kV Lines #2003 and #2002. The existing corridor varies in width from approximately 215 to 235 feet. The existing transmission line right-of-way for the proposed route of the Rebuild Project originates at the Reams Delivery Point in Dinwiddie County on the north side of Perkins Road, and continues northerly for approximately 6.7 miles, just north of the City of Petersburg and south of Railroad Grade.

For the proposed Rebuild Project, the minimum structure height is approximately 31.5 feet, the maximum structure height is approximately 121.5 feet, and the average structure height is approximately 68 feet, based on preliminary conceptual design, inclusive of a foundation reveal, and subject to change based on final engineering design.



V. NOTICE

- B. List Applicant offices where members of the public may inspect the application. If applicable, provide a link to website(s) where the application may be found.**

Response: The application will be made available electronically for public inspection at the following website: www.DominionEnergy.com/carsonlocks.

V. NOTICE

C. List all federal, state, and local agencies and/or officials that may reasonably be expected to have an interest in the proposed construction and to whom the Applicant has furnished or will furnish a copy of the application.

Response: The following agency representatives may reasonably be expected to have an interest in the proposed Rebuild Project. Instead of furnishing a copy of the Application to these parties, the Company has sent a letter noting the availability of the Application for the proposed Rebuild Project on the Company's website.²⁰

Ms. Bettina Rayfield
Virginia Department of Environmental Quality
Office of Environmental Impact Review
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

Ms. Michelle Henicheck
Virginia Department of Environmental Quality
Office of Wetlands and Streams
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

Ms. Rene Hypes
Virginia Department of Conservation and Recreation
Division of Natural Heritage
600 East Main Street, 24th Floor
Richmond, Virginia 23219

Environmental Reviewer
Virginia Department of Conservation and Recreation
Planning & Recreation Bureau
600 East Main Street, 17th Floor
Richmond, Virginia 23219

Ms. Amy Martin
Virginia Department of Wildlife Resources
Wildlife Information and Environmental Services
7870 Villa Park, Suite 400
Henrico, Virginia 23228

²⁰ The Virginia Department of Conservation and Recreation asked to be removed from the Company's post-filing mailing list, and accordingly will not receive a copy of the notice letter.

Mr. Keith Tignor
Virginia Department of Agriculture and Consumer Services
Office of Plant Industry Services
102 Governor Street
Richmond, Virginia 23219

Mr. Karl Didier, PhD
Virginia Department of Forestry
Forestland Conservation Division
900 Natural Resources Drive, Suite 800
Charlottesville, Virginia 22903

Scoping at VMRC
Virginia Marine Resources Commission
Habitat Management Division
Building 96, 380 Fenwick Road
Fort Monroe, Virginia 23651

Mr. Troy Andersen
US Fish and Wildlife Service
Virginia Field Office, Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

Mr. Keith Goodwin
US Army Corps of Engineers
WRDA Dominion Energy VA Liaison
803 Front Street
Norfolk, Virginia 23510

Mr. Phil Skorupa
Virginia Department of Mine, Minerals, and Energy
1100 Bank Street
Washington Building, 8th Floor
Richmond, Virginia 23219

Ms. Arlene F. Warren
Virginia Department of Health
Office of Drinking Water
109 Governor Street, 6th Floor
Richmond, VA 23219

Mr. Roger Kirchen
Director, Review and Compliance Division
Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

Ms. Karen Beck-Herzog
National Park Service
Petersburg National Battlefield
1539 Hickory Hill Road
Petersburg, VA 23803

Ms. Martha Little
Virginia Outdoors Foundation
P.O. Box 85073, PMB 38979
Richmond, Virginia 23285-5073

Mr. Mike Helvey
Obstruction Evaluation Group Manager
Federal Aviation Administration
800 Independence Ave, SW
Room 400 East
Washington, D.C. 20591

Mr. Scott Denny
Airport Services Division
Virginia Department of Aviation
5702 Gulfstream Road
Richmond, Virginia 23250

Mr. Dale R. Totten, P.E
Richmond District Engineer
Virginia Department of Transportation
2430 Pine Forest Drive
South Chesterfield, Virginia 23834

Mr. Kevin Massengill
County Administrator, Dinwiddie County
P. O. Drawer 70
Dinwiddie, VA 23841

Mr. John Altman
City Manager, City of Petersburg
135 N. Union Street
Petersburg, VA 23803

V. NOTICE

- D. If the application is for a transmission line with a voltage of 138 kV or greater, provide a statement and any associated correspondence indicating that prior to the filing of the application with the SCC the Applicant has notified the chief administrative officer of every locality in which it plans to undertake construction of the proposed line of its intention to file such an application, and that the Applicant gave the locality a reasonable opportunity for consultation about the proposed line (similar to the requirements of § 15.2-2202 of the Code for electric transmission lines of 150 kV or more).**

Response: In accordance with Va. Code § 15.2-2202 E, letters dated August 24, 2023, were sent to Mr. Kevin Massengill and Mr. John Altman, advising of the Company's intention to file this Application and inviting the City of Petersburg and Dinwiddie County to consult with the Company about the proposed Rebuild Project. Copies of the letters are included as Attachment V.D.1.

Dominion Energy Services, Inc.
5000 Dominion Boulevard, 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com



Mr. Kevin Massengill
County Administrator, Dinwiddie County
P.O. Drawer 70
Dinwiddie, Virginia 23841

August 24, 2023

Dear Mr. Massengill,

Dominion Energy Virginia (the "Company") is proposing to rebuild approximately 6.7 miles of 230 kV transmission Line #249 on single-circuit weathering steel H-Frame structures between structures #249/86 and #249/22 in Dinwiddie County and the City of Petersburg. The Company also proposes to reconductor approximately 2.6 miles of 230 kV Line #249 single-circuit existing transmission structures from Locks Substation to Structure #249/22. Additionally, the Company aims to install a 0.25-mile temporary line to utilize in the installation of a tap span and replace the existing Chaparral terminal tap structure. Collectively this work is referred to as the "Rebuild Project."

The Rebuild Project is needed to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards.

The Company is preparing to file an application for a Certificate of Public Convenience and Necessity ("CPCN") with the Virginia State Corporation Commission ("SCC"). Pursuant to Va. Code § 15.2-2202, the Company is writing to notify you of the proposed Rebuild Project in advance of this SCC filing. We respectfully request that you submit any comments or additional information you feel would have bearing on the Rebuild Project within 30 days of the date of this letter. Once filed, the application will be available for review on the Company's website at www.dominionenergy.com/carsonlocks.

Enclosed is a Project Overview Map depicting the proposed Rebuild Project, as well as its general location. Please note that the Project Overview Map and route description depicted therein are preliminary in nature and subject to final engineering. If you would like to receive a GIS shapefile of the rebuild route to assist in your project review or if you have any questions, please do not hesitate to contact me directly at 804-658-7316 or blair.parks@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

A handwritten signature in dark ink that reads "Blair Parks".

Blair Parks
Siting and Permitting Specialist

Dominion Energy Services, Inc.
5000 Dominion Boulevard, 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com



Mr. John Altman
City Manager, City of Petersburg
135 N. Union Street
Petersburg, Virginia 23803

August 24, 2023

Dear Mr. Altman,

Dominion Energy Virginia (the "Company") is proposing to rebuild approximately 6.7 miles of 230 kV transmission Line #249 on single-circuit weathering steel H-Frame structures between structures #249/86 and #249/22 in Dinwiddie County and the City of Petersburg. The Company also proposes to reconductor approximately 2.6 miles of 230 kV Line #249 single-circuit existing transmission structures from Locks Substation to Structure #249/22. Additionally, the Company aims to install a 0.25-mile temporary line to utilize in the installation of a tap span and replace the existing Chaparral terminal tap structure. Collectively this work is referred to as the "Rebuild Project."

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Regards,

A handwritten signature in dark ink that reads "Blair Parks".

Blair Parks
Siting and Permitting Specialist
Dominion Energy Virginia

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER	)	Case No. PUR-2023-00168
COMPANY	)	
	)	
For approval and certification of electric	)	
transmission facilities: Carson-Locks 230 kV	)	
Line #249 Partial Rebuild Project	)	

**IDENTIFICATION, SUMMARIES AND TESTIMONY OF DIRECT WITNESSES OF
VIRGINIA ELECTRIC AND POWER COMPANY**

Alex Reilly

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Daniel J. Cabonor

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Aaron C. Kuhn

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Blair Parks

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Alex Reilly

Title: Engineer III– Electric Transmission Planning

Summary:

Company Witness Alex Reilly sponsors those sections of the Appendix describing the Company's electric transmission system and the need for, and benefits of, the proposed Rebuild Project, as follows:

- Section I.B: This section details the engineering justifications for the proposed Rebuild Project.
- Section I.C: This section describes the present system and details how the proposed Rebuild Project will effectively satisfy present and projected future load demand requirements.
- Section I.D: This section describes critical contingencies and associated violations due to the inadequacy of the existing system.
- Section I.E: This section explains feasible project alternatives.
- Section I.G: This section provides a system map for the affected area.
- Section I.H: This section provides the desired in-service date of the proposed Rebuild Project and the estimated construction time.
- Section I.J: This section provides information about the project if approved by the RTO.
- Section I.K: Where applicable, this section provides outage history and maintenance history for existing transmission lines if the proposed project is a rebuild.
- Section I.M: Although not applicable to the proposed Rebuild Project, this section contains information for transmission lines interconnecting a non-utility generator.
- Section I.N: Although not applicable to the proposed Rebuild Project, this section provides the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations, and other ground facilities associated with the proposed project.
- Section II.A.10: This section provides details of the construction plans for the proposed Rebuild Project, including requested and approved line outage schedules.

Additionally, Company Witness Reilly co-sponsors the following portions of the Appendix:

- Executive Summary (co-sponsored with Company Witnesses Aaron C. Kuhn, Blair Parks, and Daniel Cabonor): The Executive Summary provides a brief summary of the Rebuild Project.
- Section I.A (co-sponsored with Company Witness Daniel J. Cabonor): This section details the primary justifications for the proposed Rebuild Project.
- Section I.F (co-sponsored with Company Witness Daniel J. Cabonor): This section describes any lines or facilities that will be removed, replaced or taken out of service upon completion of the proposed Rebuild Project and normal and emergency ratings of the facilities.
- Section II.A.3 (co-sponsored with Company Witness Blair Parks): This section provides color maps of existing or proposed rights-of-way in the vicinity of the proposed Rebuild Project.

A statement of Mr. Reilly's background and qualifications is attached to his testimony as Appendix A.

**DIRECT TESTIMONY
OF
ALEX REILLY
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
VIRGINIA STATE CORPORATION COMMISSION
CASE NO. PUR-2023-00168**

1 **Q. Please state your name, business address and position with Virginia Electric and**
2 **Power Company (“Dominion Energy Virginia” or the “Company”).**

3 A. My name is Alex Reilly, and I am an Engineer III in the Electric Transmission Planning
4 Department of the Company. My business address is 5000 Dominion Boulevard, Glen
5 Allen, Virginia 23060. A statement of my qualifications and background is provided as
6 Appendix A.

7 **Q. Please describe your areas of responsibility with the Company.**

8 A. I am responsible for planning the Company’s electric transmission system for voltages
9 of 69 kilovolts (“kV”) through 500 kV.

10 **Q. What is the purpose of your testimony in this proceeding?**

11 A. In order to resolve potential criteria violations of mandatory North American Electric
12 Reliability Corporation ("NERC") Reliability Standards by increasing transmission
13 capacity and consistent with sound engineering judgment, the Company proposes in
14 Dinwiddie County and the City of Petersburg, Virginia, the following: (i) Wreck and
15 rebuild, entirely within existing right-of-way or on Company-owned property,
16 approximately 6.7 miles of 230 kV Line #249 on single-circuit weathering steel H-Frame
17 structures between Structures #249/86 and #249/22. Proposed structures #249/22 and
18 #69/21 will be single-circuit monopoles; (ii) Reconductor approximately 2.5 miles of
19 230kV Line #249 using existing transmission structures from Locks Substation to Structure

1 #249/22; (iii) Reconductor approximately 0.13 miles of 230 kV Line #249 using existing
2 transmission structures from Structure #249/93 to Carson Substation; (iv) Install a 0.25
3 mile-long temporary line, requiring the acquisition of temporary right-of-way, and replace
4 the existing Chaparral terminal tap structure; (v) Install temporary facilities to allow Line
5 #69 to temporarily operate at 230 kV to keep Chaparral Substation energized during the
6 rebuild of Line #249¹; (vi) Complete work at Carson and Locks Substations to support the
7 new line rating; and (vii) Energize the existing Carson 500-230 kV Transformer #1
8 (collectively, the “Rebuild Project”).²

9 The purpose of my testimony is to describe the Company’s electric transmission system
10 and the need for, and benefits of, the proposed Project. I am sponsoring Sections I.B, I.C,
11 I.D, I.E, I.G, I.H, I.J, I.K, I.M, I.N, and II.A.10 of the Appendix. Additionally, I also co-
12 sponsor the Executive Summary with company Witnesses Aaron C. Kuhn, Blair Parks, and
13 Daniel J. Cabonor; Sections I.A and I.F of the Appendix with Company Witness Daniel J.
14 Cabonor, and Section II.A.3 with Company Witness Blair Parks.

15 **Q. Does this conclude your testimony?**

16 **A.** Yes, it does.

¹ To enable Line #69 to temporarily operate at 230 kV during the rebuild of Line #249, the Company intends to permanently replace three structures on Line #69 with new structures approximately 4.5 feet taller than two existing 70-foot tall structures (a height increase of approximately 6.4%) and approximately 8.0 feet taller than one existing 113.5-foot tall structure (a height increase of approximately 7.0%). As discussed in more detail in the Application and the Appendix, the Company considers this work to qualify as an “ordinary extension or improvement in the usual course of business” that does not require a Certificate of Public Convenience and Necessity (“CPCN”) from the State Corporation Commission of Virginia (“Commission”).

² As discussed in the Application and Appendix, the Company considers the work associated with Line #249 outside of Chaparral Substation, which includes the installation of temporary facilities to keep Chaparral Substation energized during the rebuild of Line #249, the reconductoring of approximately 2.6 miles of 230 kV Line #249 using existing transmission structures, and energization of the Carson 500-230 kV Transformer #1, to qualify as “ordinary extensions or improvements in the usual course of business” pursuant to Va. Code § 56-265.2 A 1.

**BACKGROUND AND QUALIFICATIONS
OF
ALEX REILLY**

Alex Reilly received his Bachelor of Science degree in Electrical Engineering Technology from Old Dominion University in 2011 and Master of Science degree in Electrical Engineering from George Washington University in 2019. Mr. Reilly's experience with the Company includes Distribution Planning (2021-2023) and Transmission Planning (2023-Present).

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Daniel J. Cabonor

Title: Engineer III - Electric Transmission Line Engineering

Summary:

Company Witness Daniel J. Cabonor sponsors or co-sponsors the following portions of the Appendix providing an overview of the design characteristics of the transmission facilities for the proposed Rebuild Project, and discussing electric and magnetic field levels as follows:

- Section I.L: Although not applicable, this section provides photographs illustrating the deterioration of structures and associated equipment as applicable.
- Section II.A.5: This section provides drawings of the right-of-way cross section showing typical transmission lines placements.
- Sections II.B.1 to II.B.3: These sections provide the line design and operational features of the proposed project.
- Section II.B.4: Where applicable, this section normally provides the line design and operational features of a proposed project.
- Section IV: This section provides analysis on the health aspects of electric and magnetic field levels.

Additionally, Company Witness Genova co-sponsors the following portions of the Appendix:

- Executive Summary (co-sponsored with Company Witness Aaron C. Kuhn, Blair Parks, and Alex Reilly): The Executive Summary provides a brief summary of the Rebuild Project.
- Section I.A (co-sponsored with Company Witness Alex Reilly): This section details the primary justifications for the proposed Rebuild Project.
- Section I.F (co-sponsored with Company Witness Alex Reilly): This section describes any lines or facilities that will be removed, replaced or taken out of service upon completion of the proposed Rebuild Project and normal and emergency ratings of the facilities.
- Section I.I (co-sponsored with Company Witness Mark Wilson): This section provides the estimated total cost of the proposed Rebuild Project.
- Section II.B.5 (co-sponsored with Company Witness Blair Parks): This section provides the mapping and structure heights for the existing overhead structures.
- Section V.A. (co-sponsored with Company Witness Blair Parks): This section provides information related to public notice of the proposed project.

A statement of Mr. Cabonor's background and qualifications is attached to her testimony as Appendix A.

**DIRECT TESTIMONY
OF
DANIEL CABONOR
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
VIRGINIA STATE CORPORATION COMMISSION
CASE NO. PUR-2023-00168**

1 **Q. Please state your name, business address and position with Virginia Electric and**
2 **Power Company (“Dominion Energy Virginia” or the Company”).**

3 A. My name is Daniel J. Cabonor, and I am an III in the Electric Transmission Line
4 Engineering Department of the Company. My business address is 5000 Dominion
5 Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background
6 is provided as Appendix A.

7 **Q. Please describe your areas of responsibility with the Company.**

8 A. I am responsible for the estimating, conceptual, and final design of high voltage
9 transmission line projects from 69 kilovolt (“kV”) to 500 kV. Additionally, I am
10 responsible for providing engineering support to field personnel throughout the
11 construction process.

12 **Q. What is the purpose of your testimony in this proceeding?**

13 A. In order to resolve potential criteria violations of mandatory North American Electric
14 Reliability Corporation ("NERC") Reliability Standards and consistent with sound
15 engineering judgment, the Company proposes in Dinwiddie County and the City of
16 Petersburg, Virginia, the following: (i) Wreck and rebuild, entirely within existing right-
17 of-way or on Company-owned property, approximately 6.7 miles of 230 kV Line #249 on
18 single-circuit weathering steel H-Frame structures between Structures #249/86 and
19 #249/22. Proposed structures #249/22 and #69/21 will be single-circuit monopoles; (ii)

1 Reconductor approximately 2.5 miles of 230kV Line #249 using existing transmission
2 structures from Locks Substation to Structure #249/22; (iii) Reconductor approximately
3 0.13 miles of 230 kV Line #249 using existing transmission structures from Structure
4 #249/93 to Carson Substation; (iv) Install a 0.25 mile-long temporary line, requiring the
5 acquisition of temporary right-of-way, and replace the existing Chaparral terminal tap
6 structure; (v) Install temporary facilities to allow Line #69 to temporarily operate at 230
7 kV to keep Chaparral Substation energized during the rebuild of Line #249¹; (vi) Complete
8 work at Carson and Locks Substations to support the new line rating; and (vii) Energize
9 the existing Carson 500-230 kV Transformer #1 (collectively, the “Rebuild Project”).²

10 The purpose of my testimony is to describe the design characteristics of the transmission
11 facilities for the proposed Rebuild Project, also to discuss electric and magnetic field levels.
12 I sponsor Sections I.L, II.A.5, II.B.1 to II.B.4, and Section IV of the Appendix.
13 Additionally, I co-sponsor the Executive Summary with Company Witnesses Aaron C.
14 Kuhn, Alex Reilly, and Blair Parks; Sections I.A and I.F of the Appendix with Company
15 Witness Aaron C. Kuhn; Section I.I of the Appendix with Company Witness Alex Reilly,
16 and Sections II.B.5 and V.A with Company Witness Blair Parks.

¹ To enable Line #69 to temporarily operate at 230 kV during the rebuild of Line #249, the Company intends to permanently replace three structures on Line #69 with new structures approximately 4.5 feet taller than two existing 70-foot tall structures (a height increase of approximately 6.4%) and approximately 8.0 feet taller than one existing 113.5-foot tall structure (a height increase of approximately 7.0%). As discussed in more detail in the Application and the Appendix, the Company considers this work to qualify as an “ordinary extension or improvement in the usual course of business” that does not require a Certificate of Public Convenience and Necessity (“CPCN”) from the State Corporation Commission of Virginia (“Commission”).

² As discussed in the Application and Appendix, the Company considers the work associated with Line #249 outside of Chaparral Substation, which includes the installation of temporary facilities to keep Chaparral Substation energized during the rebuild of Line #249, the reconductoring of approximately 2.6 miles of 230 kV Line #249 using existing transmission structures, and energization of the Carson 500-230 kV Transformer #1, to qualify as “ordinary extensions or improvements in the usual course of business” pursuant to Va. Code § 56-265.2 A 1.

1 **Q.** **Does this conclude your pre-filed direct testimony?**

2 **A.** Yes, it does.

**BACKGROUND AND QUALIFICATIONS
OF
DANIEL CABONOR**

Daniel J. Cabonor graduated from North Carolina State University in 2004 with a Bachelor of Science in Civil Engineering. He joined the Company in 2008 and has held various engineering titles with the Civil Design Department of the Nuclear Business Unit. He has occupied a position in the Electric Transmission Engineering department with the Company since 2018, where he currently works as an Engineer III.

Mr. Cabonor has previously submitted pre-filed testimony to the Virginia State Corporation Commission.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Aaron C. Kuhn

Title: Contractor – Substation Engineering

Summary:

Company Witness Aaron C. Kuhn sponsors or co-sponsors the following portions of the Appendix describing the work to be performed at the existing substations for the Rebuild Project, as follows:

- Executive Summary (co-sponsored with Company Witness Alex Reilly, Blair Parks, and Daniel J. Cabonor): The executive Summary provides a brief summary of the Rebuild Project.
- Section I.I (co-sponsored with Company Witness Daniel J. Cabonor): This section provides the estimated total cost of the proposed Rebuild Project.
- Section II.C: This section describes and furnishes a one-line diagram of the substation(s) associated with the proposed Rebuild Project, if needed.

A statement of Mr. Kuhn's background and qualifications is attached to his testimony as Appendix A.

**DIRECT TESTIMONY
OF
AARON C. KUHN
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
VIRGINIA STATE CORPORATION COMMISSION
CASE NO. PUR-2023-00168**

1 **Q. Please state your name, business address and position with Virginia Electric and**
2 **Power Company (“Dominion Energy Virginia” or the Company”).**

3 A. My name is Aaron C. Kuhn. I am employed by Burns and McDonnell; however, I am a
4 Contractor for Virginia Electric and Power Company’s (“Dominion Energy Virginia” or
5 the “Company”) Substation Engineering section of the Electric Transmission group. My
6 business address is 9400 Ward Parkway, Kansas City, Missouri 64114. A statement of my
7 qualifications and background is provided as Appendix A.

8 **Q. Please describe your areas of responsibility with the Company.**

9 A. I am responsible for the evaluation of substation project requirements, feasibility
10 studies, conceptual physical design, scope development, preliminary engineering and
11 cost estimating for high voltage transmission and distribution substations.

12 **Q. What is the purpose of your testimony in this proceeding?**

13 A. In order to resolve potential criteria violations of mandatory North American Electric
14 Reliability Corporation ("NERC") Reliability Standards by increasing transmission
15 capacity and consistent with sound engineering judgment, the Company proposes in
16 Dinwiddie County and the City of Petersburg, Virginia, the following: (i) Wreck and
17 rebuild, entirely within existing right-of-way or on Company-owned property,
18 approximately 6.7 miles of 230 kV Line #249 on single-circuit weathering steel H-Frame
19 structures between Structures #249/86 and #249/22. Proposed structures #249/22 and

1 #69/21 will be single-circuit monopoles; (ii) Reconductor approximately 2.5 miles of
2 230kV Line #249 using existing transmission structures from Locks Substation to Structure
3 #249/22; (iii) Reconductor approximately 0.13 miles of 230 kV Line #249 using existing
4 transmission structures from Structure #249/93 to Carson Substation; (iv) Install a 0.25
5 mile-long temporary line, requiring the acquisition of temporary right-of-way, and replace
6 the existing Chaparral terminal tap structure; (v) Install temporary facilities to allow Line
7 #69 to temporarily operate at 230 kV to keep Chaparral Substation energized during the
8 rebuild of Line #249¹; (vi) Complete work at Carson and Locks Substations to support the
9 new line rating; and (vii) Energize the existing Carson 500-230 kV Transformer #1
10 (collectively, the “Rebuild Project”).²

11 The purpose of my testimony is to describe the work to be performed at the Carson and
12 Locks Substations as a part of the proposed Project. I sponsor Section II.C of the Appendix.
13 Additionally, I co-sponsor the Executive Summary with company Witnesses Alex Reilly,
14 Blair Parks, and Daniel J. Cabonor; Section I.I of the Appendix with Company Witness
15 Daniel J. Cabonor, specifically as it pertains to substation work.

16 **Q. Does this conclude your testimony?**

17 **A.** Yes, it does.

¹ To enable Line #69 to temporarily operate at 230 kV during the rebuild of Line #249, the Company intends to permanently replace three structures on Line #69 with new structures approximately 4.5 feet taller than two existing 70-foot tall structures (a height increase of approximately 6.4%) and approximately 8.0 feet taller than one existing 113.5-foot tall structure (a height increase of approximately 7.0%). As discussed in more detail in the Application and the Appendix, the Company considers this work to qualify as an “ordinary extension or improvement in the usual course of business” that does not require a Certificate of Public Convenience and Necessity (“CPCN”) from the State Corporation Commission of Virginia (“Commission”).

² As discussed in the Application and Appendix, the Company considers the work associated with Line #249 outside of Chaparral Substation, which includes the installation of temporary facilities to keep Chaparral Substation energized during the rebuild of Line #249, the reconductoring of approximately 2.6 miles of 230 kV Line #249 using existing transmission structures, and energization of the Carson 500-230 kV Transformer #1, to qualify as “ordinary extensions or improvements in the usual course of business” pursuant to Va. Code § 56-265.2 A 1.

**BACKGROUND AND QUALIFICATIONS
OF
AARON C. KUHN**

Aaron C. Kuhn received his Bachelor of Science degree in Electrical Engineering from the University of Missouri – Columbia in 2014. Mr. Kuhn is a contractor for the Company and has been employed by Burns & McDonnell since 2015. His previous job duties included developing detailed physical construction drawings, bills of materials, grounding studies, electrical schematics and wiring diagrams for the Company. He has been licensed as a Professional Engineer in the State of Missouri since 2019.

Mr. Kuhn has previously submitted pre-filed testimony to the Virginia State Corporation Commission.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Blair Parks

Title: Siting and Permitting Specialist

Summary:

Company Witness Blair Parks will sponsor those portions of the Appendix providing an overview of the design of the route for the proposed Rebuild Project, and related permitting, as follows:

- Section II.A.1: This section provides the length of the proposed corridor and viable alternatives to the proposed Rebuild Project.
- Section II.A.2: This section provides a map showing the route of the proposed Rebuild Project in relation to notable points close to the proposed Rebuild Project.
- Section II.A.4: This section explains why the existing right-of-way is not adequate to serve the need, to the extent applicable.
- Sections II.A.6 to II.A.8: These sections provide detail regarding the right-of-way for the proposed Rebuild Project.
- Section II.A.9: This section describes the proposed route selection procedures and details alternative routes considered.
- Section II.A.11: This section details how the construction of the proposed Rebuild Project follows the provisions discussed in Attachment 1 of the Transmission Appendix Guidelines.
- Section II.A.12: This section identifies the counties and localities through which the proposed Rebuild Project will pass and provides General Highway Maps for these localities.
- Section II.B.6: This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section III: This section details the impact of the proposed Rebuild Project on scenic, environmental, and historic features.

Additionally, Ms. Parks co-sponsors the following portions of the Appendix:

- Executive Summary (co-sponsored with Company Witnesses Alex Reilly, Aaron C. Kuhn, and Daniel J. Cabonor): The executive Summary provides a brief summary of the Rebuild Project.
- Section II.A.3 (co-sponsored with Company Witness Alex Reilly): This section provides color maps of existing or proposed rights-of-way in the vicinity of the proposed Rebuild Project.
- Section II.B.5 (co-sponsored with Company Witness Daniel J. Cabonor): This section provides the mapping and structure heights for the existing and proposed overhead structures.
- Section V.A (co-sponsored with Company Witness Daniel J. Cabonor): This section provides information related to public notice of the proposed Rebuild Project.

Finally, Ms. Parks sponsors the DEQ Supplement filed with the Application. A statement of Ms. Parks' background and qualifications is attached to her testimony as Appendix A.

**DIRECT TESTIMONY
OF
BLAIR PARKS
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2023-00168**

Q. Please state your name, business address and position with Virginia Electric and Power Company (“Dominion Energy Virginia” or the “Company”).

A. My name is Blair Parks, and I am a Siting and Permitting Specialist for Virginia Electric and Power Company (“Dominion Energy Virginia” or the “Company”) supporting Electric Transmission. My business address is 5000 Dominion Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for identifying appropriate routes for transmission lines and obtaining necessary federal, state, and local approvals and permits for those facilities. In this position, I work closely with government officials, permitting agencies, property owners, and other interested parties, as well as with other Company personnel, to develop and maintain facilities needed by the public so as to reasonably minimize environmental and other impacts on the public in a reliable, cost-effective manner.

Q. What is the purpose of your testimony in this proceeding?

A. In order to resolve potential criteria violations of mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards by increasing transmission capacity and consistent with sound engineering judgment, the Company proposes in Dinwiddie County and the City of Petersburg, Virginia, the following: (i) Wreck and rebuild, entirely within existing right-of-way or on Company-owned property,

approximately 6.7 miles of 230 kV Line #249 on single-circuit weathering steel H-Frame structures between Structures #249/86 and #249/22. Proposed structures #249/22 and #69/21 will be single-circuit monopoles; (ii) Reconductor approximately 2.5 miles of 230kV Line #249 using existing transmission structures from Locks Substation to Structure #249/22; (iii) Reconductor approximately 0.13 miles of 230 kV Line #249 using existing transmission structures from Structure #249/93 to Carson Substation; (iv) Install a 0.25 mile-long temporary line, requiring the acquisition of temporary right-of-way, and replace the existing Chaparral terminal tap structure; (v) Install temporary facilities to allow Line #69 to temporarily operate at 230 kV to keep Chaparral Substation energized during the rebuild of Line #249¹; (vi) Complete work at Carson and Locks Substations to support the new line rating; and (vii) Energize the existing Carson 500-230 kV Transformer #1 (collectively, the “Rebuild Project”).²

The purpose of my testimony is to provide an overview of the route and permitting for the proposed Rebuild Project. As it pertains to routing and permitting, I sponsor Sections II.A.1, II.A.2, II.A.4, II.A.6, II.A.7, II.A.8, II.A.9, II.A.11, II.A.12, II.B.6, III, and V of the Appendix. I also sponsor the DEQ Supplement filed with the Application, and co-sponsor the Executive Summary with company Witnesses Aaron C. Kuhn, Alex Reilly, and Daniel

¹ To enable Line #69 to temporarily operate at 230 kV during the rebuild of Line #249, the Company intends to permanently replace three structures on Line #69 with new structures approximately 4.5 feet taller than two existing 70-foot tall structures (a height increase of approximately 6.4%) and approximately 8.0 feet taller than one existing 113.5-foot tall structure (a height increase of approximately 7.0%). As discussed in more detail in the Application and the Appendix, the Company considers this work to qualify as an “ordinary extension or improvement in the usual course of business” that does not require a Certificate of Public Convenience and Necessity (“CPCN”) from the State Corporation Commission of Virginia (“Commission”).

² As discussed in the Application and Appendix, the Company considers the work associated with Line #249 outside of Chaparral Substation, which includes the installation of temporary facilities to keep Chaparral Substation energized during the rebuild of Line #249, the reconductoring of approximately 2.6 miles of 230 kV Line #249 using existing transmission structures, and energization of the Carson 500-230 kV Transformer #1, to qualify as “ordinary extensions or improvements in the usual course of business” pursuant to Va. Code § 56-265.2 A 1.

J. Cabonor; Section II.A.3 with Company Witness Alex Reilly, and Sections II.B.5 and V.A of the Appendix with Company Witness Daniel J. Cabonor.

Q. Has the Company complied with Va. Code § 15.2-2202 E?

A. In accordance with Va. Code § 15.2-2202 E, letters dated August 24, 2023, were sent to Mr. Kevin Massengill and Mr. John Altman, advising of the Company's intention to file this Application and inviting the City of Petersburg and Dinwiddie County to consult with the Company about the proposed Rebuild Project. Copies of the letters are included as Appendix Attachment V.D.1.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

**BACKGROUND AND QUALIFICATIONS
OF
BLAIR PARKS**

Blair Parks graduated from Virginia Commonwealth University in 2017 with a Bachelor of Science in Environmental Studies. She was previously a Regulatory Specialist for Stantec Consulting Services, Inc., where she was responsible for permitting electric distribution and transportation projects. Ms. Parks joined Dominion Energy Virginia's Siting and Permitting Group in 2022 where she currently works as a Siting and Permitting Specialist.

Ms. Parks has previously submitted pre-filed testimony to the Virginia State Corporation Commission.