#### II. DESCRIPTION OF THE PROPOSED PROJECT

C. Describe and furnish plan drawings of all new substations, switching stations, and other ground facilities associated with the proposed project. Include size, acreage, and bus configurations. Describe substation expansion capability and plans. Provide one-line diagrams for each.

Response:

There are no new substations, switching stations, or other ground facilities associated with the proposed Rebuild Project, nor are any of the impacted stations being expanded. The Rebuild Project will require the following substations work:

At Elmont Substation the Company will replace the terminal equipment of Line #574 to support the new line rating. The two (2) circuit breakers, four (4) switches, bus and line riser conductors will be replaced with 5000 Amps units. The line termination positions for Line #574 will be relocated within the Substation. A new Control Enclosure will be installed for the new relay panels and station service will be upgraded. The fiber on the new OPGW shield wire will be brought into the Substation Control Enclosure and terminated in the network panel.

At Ladysmith Substation the Company will replace the terminal equipment of Line #574 to support the new line rating. Two (2) circuit breakers, three (3) disconnect switches, bus and line riser conductors will be replaced with 5000 Amps units. The line termination positions for Lines #574 and #568 will be swapped within the Substation. The fiber on the new OPGW shield wire will be brought into the Substation Control Enclosure and terminated in the network panel.

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

A. Describe the character of the area that will be traversed by this line, including land use, wetlands, etc. Provide the number of dwellings within 500 feet, 250 feet and 100 feet of the centerline, and within the ROW for each route considered. Provide the estimated amount of farmland and forestland within the ROW that the proposed project would impact.

#### Response: Land Use

The proposed Rebuild Project is located in Hanover and Caroline Counties. The Project areas are largely characterized by agricultural and forested areas with some developed land. The project crosses named waters, unnamed tributaries, and associated wetlands.

#### Farmlands/Forests

According to the Natural Resources Conservation Service Data ("NRCS"), within the right-of-way there are approximately 190.0 acres of prime farmland and approximately 176.2 acres of farmland of statewide importance. Of the 190.0 acres of prime farmland, 89.3 acres are located in Hanover County and 100.7 acres are located in Caroline County. Of the 176.2 acres of farmland of statewide importance, 133.6 acres are located in Hanover County and 42.6 acres of farmland of statewide importance in Caroline County. Prime farmland is an NRCS designation based on soil composition and is defined by the U.S. Department of Agriculture as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses. Farmland of statewide importance includes land that nearly meets the criteria for prime farmland and has been designated by the Virginia Department of Agriculture and Consumer Services and Virginia Department of Conservation and Recreation as important for the production of food, feed, forage, fiber, and oilseed crops and that economically produces high yields of crops when treated and managed according to acceptable farming Farmland classifications are not based on current land use. As the right-of-way has been in use since the early 1960s, it is not expected that the Rebuild Project will permanently impact farmland, as most farming uses are able to co-exist with the transmission line.

Prime farmlands and farmlands of statewide importance within the Project area are depicted in <u>Attachment III.A.1</u>.

#### Wetlands

The proposed Rebuild Project is located within the Lower James watershed, Hydrologic Unit Code 02080206, the Pamunkey watershed, Hydrologic Unit Code 02080106, and the Mattaponi watershed, Hydrologic Unit Code 02080105. According to the U.S. Geological Survey ("USGS") topographic quadrangles

(Yellow Tavern [1963], Glen Allen [1963], Hanover Academy [1969], Hewlett [1969], Ladysmith [1966], Virginia), the existing transmission line corridor crosses 11 named perennial streams and rivers, including: Stony Run, Stagg Creek, Dog Branch, South Anna River, Beaver Creek, Newfound River, Little River, North Anna River, Polecat Creek, Stevens Mill Run, and South River.

The Company utilized aerial imagery, U.S. Fish and Wildlife Service National Wetlands Inventory, National Resources Conservation Service Soil Surveys, Federal Emergency Management Floodplain Mapping, and existing contour data to estimate jurisdictional wetlands and waters of the United States within the proposed Rebuild right-of-way. Total jurisdictional resources within the proposed Rebuild Project right-of-way, as estimated using desktop resources, are provided in the table below.

Estimated jurisdictional resources within the Elmont – Ladysmith 500 kV Rebuild Project Right-of-Way

Resource	Area/Length (±)
Palustrine Emergent/ Scrub Shrub Wetland	146.9 AC
Palustrine Unconsolidated Bottom Open Water	0.4 AC
Stream Channel	2.8 AC/3.4 MI

Prior to construction, the Company will delineate wetlands and other waters of the United States using the *Routine Determination Method*, as outlined in the *1987 Corps of Engineers Wetland Delineation Manual* and methods described in the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0). The company will also obtain any necessary permits to impact jurisdictional resources.

#### **Historic Features**

In accordance with the *Guidelines for Assessing Impacts of Proposed Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (2008), a Stage I Pre-Application Analysis was conducted by Dutton. This report was forwarded to the VDHR in April 22, 2021 and is included as Attachment 2.H.2 to the DEQ Supplement. The background archival research identified one resource that is listed on the National Historic Landmark ("NHL") registry and the Virginia Landmark Registry within the 1.5-mile buffer. One battlefield was identified within the 1.0-mile buffer and four architectural resources determined eligible for listing on the NRHP are located within the 0.5-mile buffer. There are no eligible or potentially eligible archaeological sites located within the right-of-way.

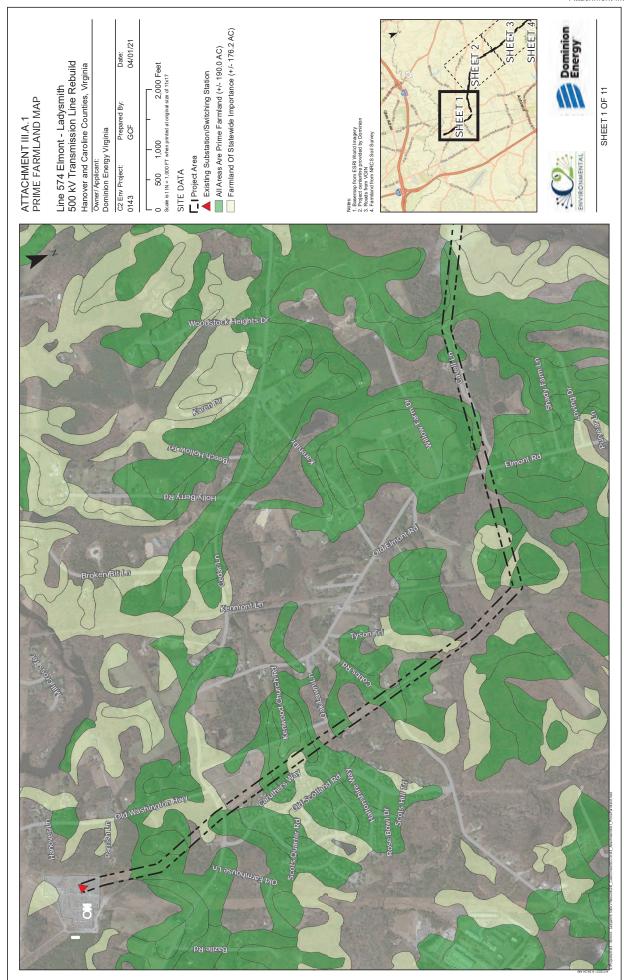
Online database searches for threatened and endangered species in the vicinity of the Rebuild Project, including the U.S. Fish and Wildlife ("USFWS") Information, Planning, and Conservation ("IPaC") system, the Virginia Department of Wildlife Resources ("DWR") Virginia Fish and Wildlife

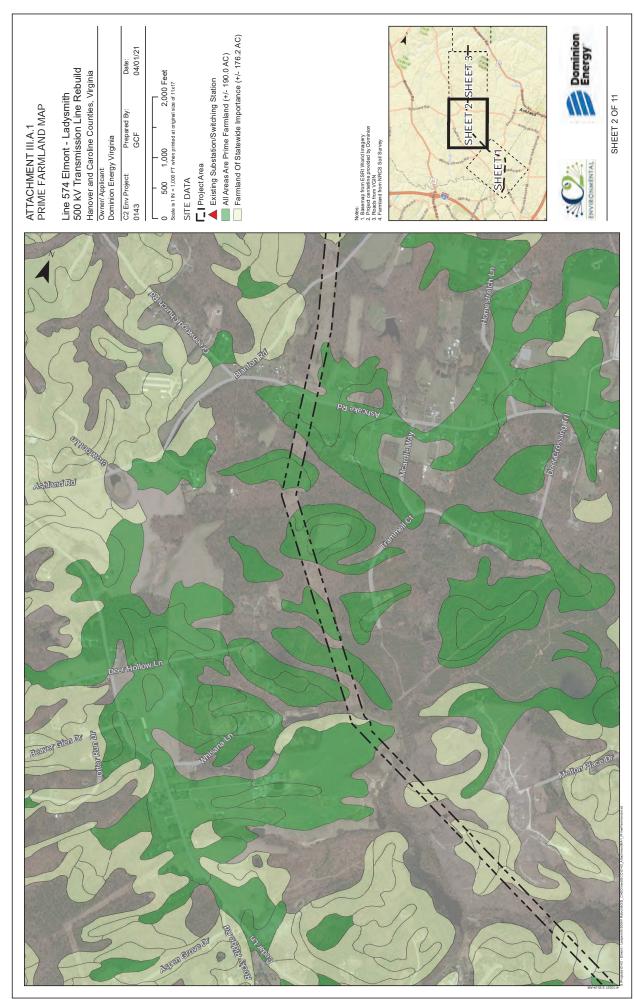
Information Service ("VAFWIS"), Virginia Department of Conservation and Recreation ("DCR"), Natural Heritage Data Explorer ("NHDE"), and the Center for Conservation Biology ("CCB") Bald Eagle Nest Locator, were conducted, which identified several federal- and state-listed species that have the potential to occur within the Rebuild Project area. These resources are identified in the report included as Attachment 2.F.1 to the DEQ Supplement. The Company intends to reasonably minimize any impact on these resources and coordinate with pertinent agencies, as appropriate.

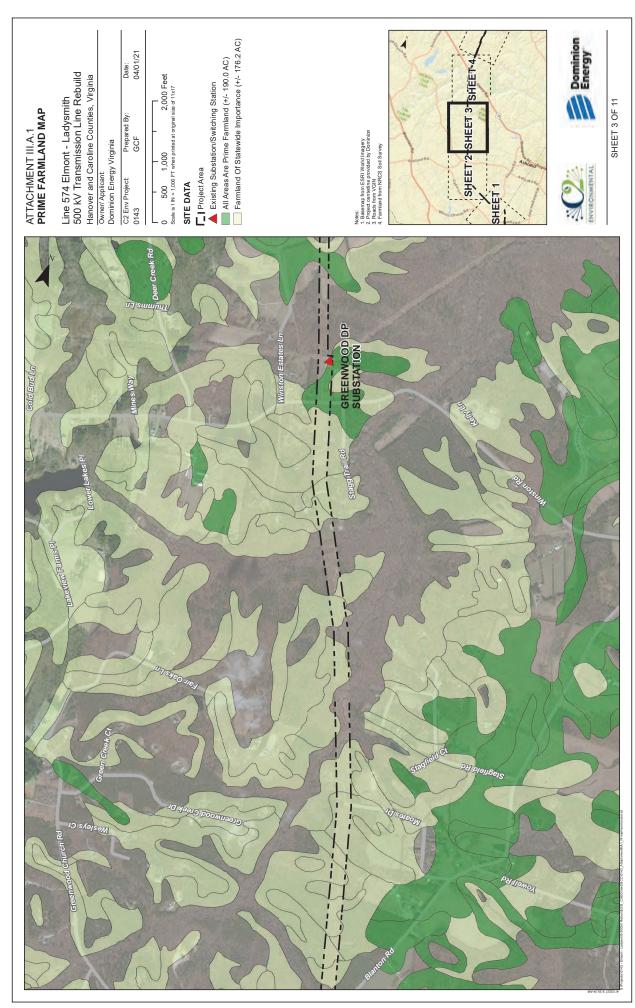
#### **Dwellings**

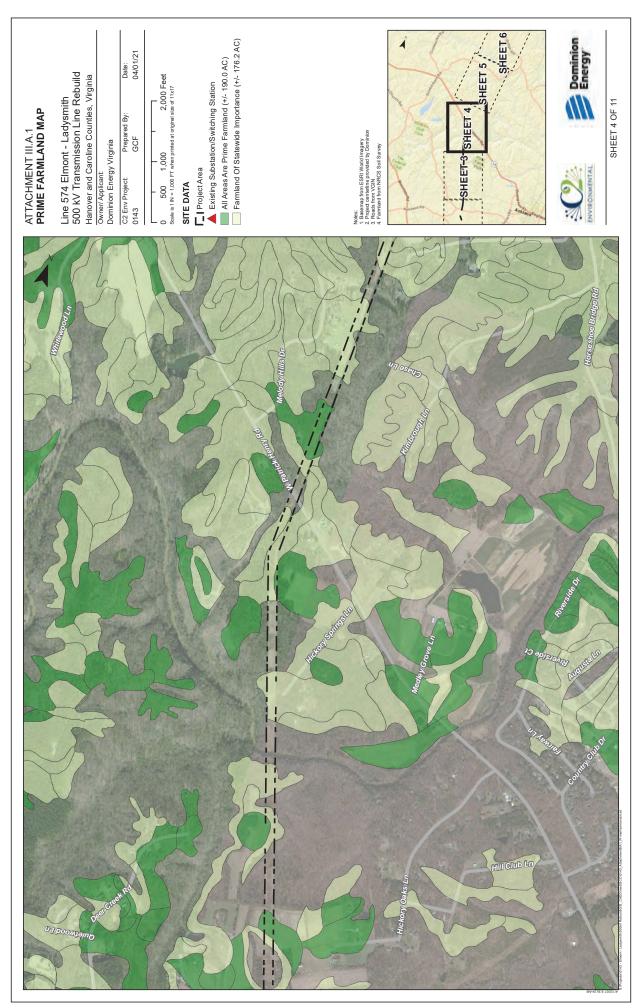
According to Google Earth and Hanover and Caroline County GIS data, there are approximately 156 dwellings in Hanover County within 500 feet of the centerline of the Rebuild Project, 154 dwellings in Caroline County within 500 feet of the centerline, 58 dwellings in Hanover county within 250 feet of the centerline, 65 dwellings in Caroline county within 250 feet of the centerline, 1 dwelling in Hanover County within 100 feet of the centerline, and 7 dwellings in Caroline County within 100 feet of the centerline.

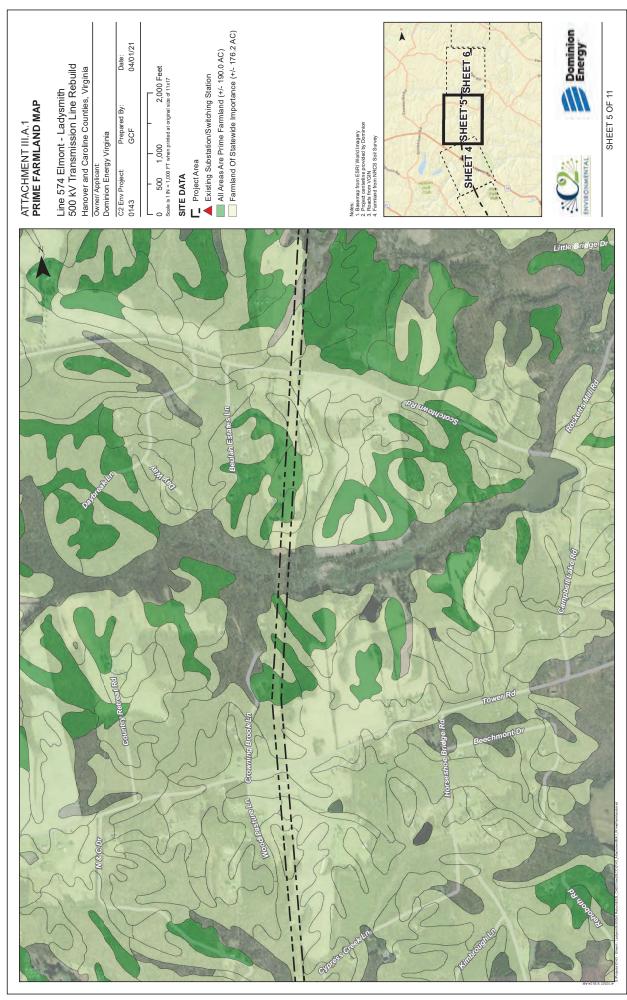
County	Dwellings Within 500 FT of Centerline	Dwellings Within 250 FT of Centerline	Dwellings Within 100 FT of Centerline
Hanover	156	58	1
Caroline	154	65	7

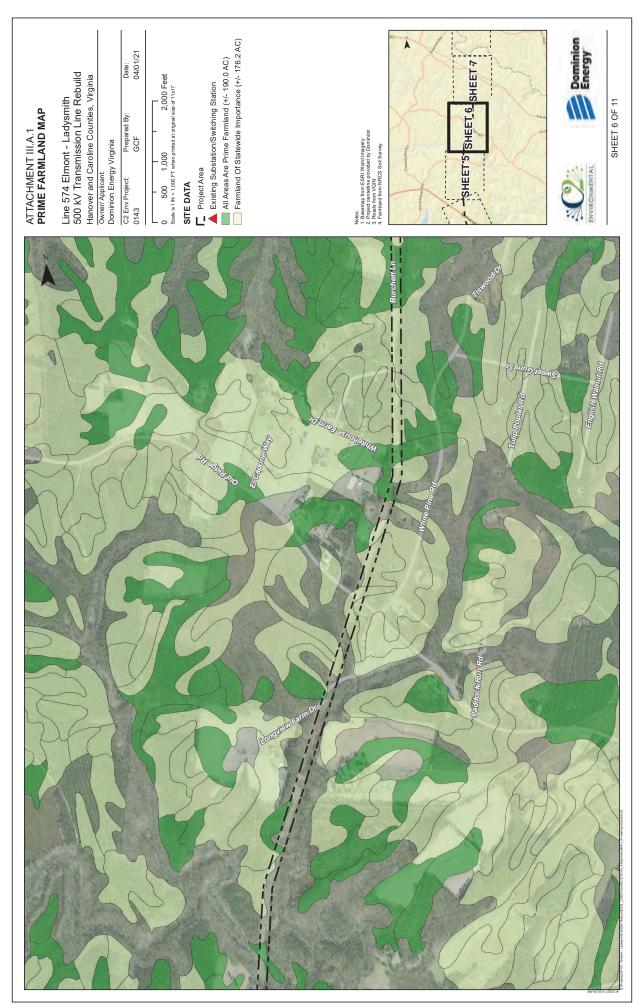






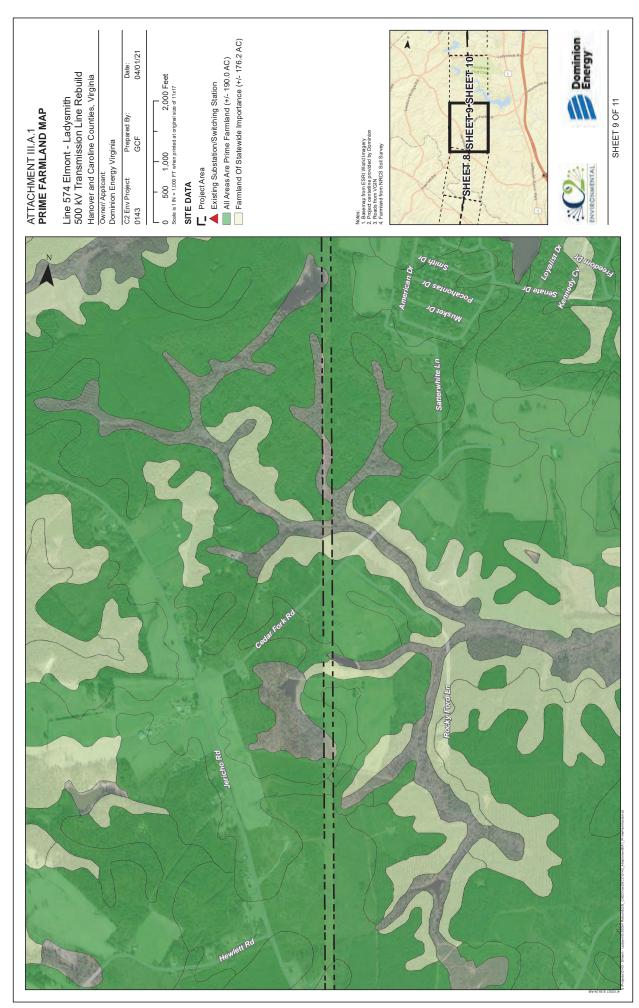
















## III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

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 accordance with § 15.2-2202 E of the Code of Virginia, letters were delivered to the County Administrator in each county where the Rebuild Project is located, advising of the Company's intention to file this Application and inviting these localities to consult with the Company about the Rebuild Project. These letters are included as <u>Attachments V.D.1</u> and <u>V.D.2</u>. See Section V.D of this Appendix.

In March 2021, the Company launched an internet website dedicated to the proposed Rebuild Project: DominionEnergy.com/ladysmith. The website includes a description and benefits of the proposed Rebuild Project, an explanation of need, route maps, photo simulations, a project overview video, an interactive tool to view individual structure height changes, and information on the Commission review process.

In March 2021, the Company sent project announcement mailers to approximately 880 property owners within 500 feet of the line. Each mailer included a letter and overview map. The letters provided a brief overview of the proposed Rebuild Project and advised of the virtual community meeting the Company would be holding at the end of March 2021. Copies of the letter and overview map are respectively included as <a href="https://dx.org/Attachment III.B.2">Attachment III.B.2</a>. An additional, separate letter with the same map (<a href="https://dx.org/Attachment III.B.2">Attachment III.B.2</a>) was mailed in March 2021, to various statewide interested stakeholders (Attachment III.B.3).

In March 2021, the Company sent informational postcards to the same property owners inviting them to attend a community open house to learn more about the proposed Rebuild Project. The postcard is included as <a href="Attachment III.B.4">Attachment III.B.4</a>. Newspaper advertisements for the open house, included as <a href="Attachment III.B.5">Attachment III.B.5</a>, were also placed in Hanover Local (13,802 circulation on Wednesday), and Mechanicsville Local (28,204 circulation on Wednesday) in hardcopy editions. In addition, digital advertisements for the open houses, included as <a href="Attachment III.B.6">Attachment III.B.6</a>, targeting residents in Hanover and Caroline Counties ran on Facebook, Twitter, and NextDoor. These digital advertisements made 756,136 impressions on desktop and mobile devices and 5,375 clicks on ads.

One virtual community meeting was held:

• On Tuesday, March 30, 2021, from 6-7 p.m. through Webex Events (link available on project website, DominionEnergy.com/ladysmith). There were 8 attendees. The meeting was recorded and posted on the project page April 1, 2021. As of April 23, 2021, the video has been viewed 95 times.

A variety of project information, graphics, and photographs were presented to the public at the open house, including overview maps, sample existing and proposed structure graphics, a project overview video, an interactive tool to view individual structure height changes (Attachment III.B.7 for screenshots of the tool) and photo simulations of the proposed Rebuild Project from key locations (Attachment III.B.8). The project team answered questions from the community following the presentation. The presentation is included as Attachment III.B.9. Open house materials have been posted on the website for the proposed Rebuild Project. A transcript of the project video, and County-specific videos for Caroline and Hanover Counties is included as Attachment III.B.10. Digital advertisements ran after the event to notify the public the recording of the virtual community meeting is available for viewing. The advertisements are included as Attachment III.B.11.

Ten property owners reached out to the project team before and after the meeting to ask questions. The Company has provided additional information for each and plans to meet with two property owners in summer 2021 who have requested an on-site meeting.

As part of preparing for the Rebuild Project, the Company researched the demographics of the surrounding communities using 2020/2025 ESRI Updated Demographics, HUD's Tribal Directory Assessment Tool (TDAT), and EPA's EJScreen. This information revealed that there are 17 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 U.S. Environmental Protection Agency threshold to be defined as Environmental Justice Communities ("EJ Communities").

Pursuant to Va. Code §§ 56.46.1 C and 56-259 C and FERC Guidelines, there is a strong preference for the use of existing utility right-of-way whenever feasible. The Rebuild Project is within the existing right-of-way and will not require any of the following: additional permanent or temporary right-of-way, the construction of a temporary line, or an increase in operating voltage. The structural height average will increase by 35 feet from 111 feet to 146 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.



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Rebuild Project

Dear Neighbor:

At Dominion Energy, we are committed to continually reviewing and analyzing our energy infrastructure to provide safe and reliable electric service to our neighbors. We are currently proposing to rebuild a 26.2-mile portion of an aging 500 kilovolt (kV) electric transmission line located near your property. The line was originally built in the 1960s and is nearing the end of its service life. The rebuild is necessary to bring facilities up to current reliability and safety standards.

Prior to filing an application with the Virginia State Corporation Commission (SCC), we would like to take the opportunity to share more information about the project and gather feedback from the community.

Due to the ongoing public health concerns resulting from the spread of the coronavirus, we plan to host a virtual community meeting from 6 p.m. – 7 p.m. on March 30, 2021.

In advance of the meeting, we encourage you to visit the project's dedicated webpage at DominionEnergy.com/ladysmith. This page will provide details on the need for the project, maps, and information on structural changes. Enclosed is a project overview map to help in your review.

Please be on the lookout for future communications and additional materials posted on this webpage to keep you informed and up-to-date on the project.

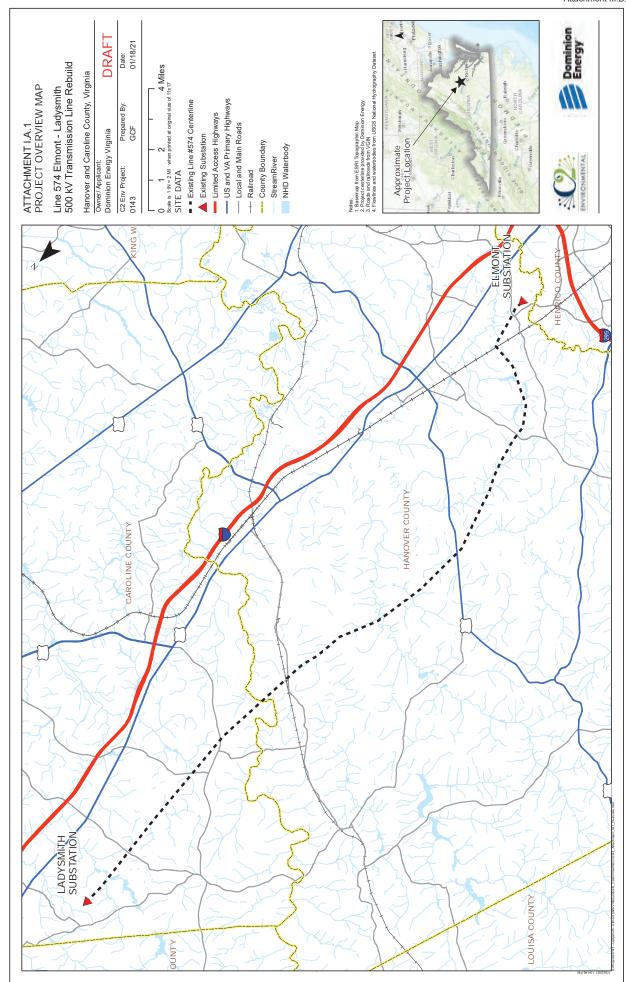
You may also contact us by sending an email to powerline@dominionenergy.com or calling 888-291-0190 with any questions.

Thank you in advance for your patience as we work to maintain reliable electric service in the communities we serve.

Sincerely,

The Electric Transmission Project Team

Enclosure





March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Ms. Kostelny,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

We are currently in the conceptual phase and are seeking input prior to submitting an application with the Virginia State Corporation Commission (SCC) in spring 2021. Doing so allows us to hear any concerns you may have as we work to meet the project's needs. Enclosed is a project overview map to help in your review. 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 countywide and statewide historic, cultural, and scenic organizations, as well as Native American tribes.

Please provide your comments by April 15, 2021, so we have adequate time to review and consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

Due to the ongoing public health concerns resulting from the spread of the coronavirus, we plan to host a virtual community meeting from 6 p.m. – 7 p.m. on March 30, 2021. In advance of the meeting, we encourage you to visit the project's dedicated webpage at DominionEnergy.com/ladysmith. This page will provide details on the need for the project, maps, and information on structural changes.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Mr. Gilmore.

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Mr. Campi,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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Please provide your comments by April 15, 2021, so we have adequate time to review and consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

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If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Mr. Williams.

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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Please provide your comments by April 15, 2021, so we have adequate time to review and consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

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Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Mr. Gary,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Ms. Powell.

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Mr. Macaulay,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Ms. Williamson.

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Mr. Holmes.

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

We are currently in the conceptual phase and are seeking input prior to submitting an application with the Virginia State Corporation Commission (SCC) in spring 2021. Doing so allows us to hear any concerns you may have as we work to meet the project's needs. Enclosed is a project overview map to help in your review. 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 countywide and statewide historic, cultural, and scenic organizations, as well as Native American tribes.

Please provide your comments by April 15, 2021, so we have adequate time to review and consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

Due to the ongoing public health concerns resulting from the spread of the coronavirus, we plan to host a virtual community meeting from 6 p.m. – 7 p.m. on March 30, 2021. In advance of the meeting, we encourage you to visit the project's dedicated webpage at DominionEnergy.com/ladysmith. This page will provide details on the need for the project, maps, and information on structural changes.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Dr. Newby-Alexander,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Mr. Kirchen,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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Please provide your comments by April 15, 2021, so we have adequate time to review and consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

Due to the ongoing public health concerns resulting from the spread of the coronavirus, we plan to host a virtual community meeting from 6 p.m. – 7 p.m. on March 30, 2021. In advance of the meeting, we encourage you to visit the project's dedicated webpage at DominionEnergy.com/ladysmith. This page will provide details on the need for the project, maps, and information on structural changes.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Ms. Birge-Wilson,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

We are currently in the conceptual phase and are seeking input prior to submitting an application with the Virginia State Corporation Commission (SCC) in spring 2021. Doing so allows us to hear any concerns you may have as we work to meet the project's needs. Enclosed is a project overview map to help in your review. 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 countywide and statewide historic, cultural, and scenic organizations, as well as Native American tribes.

Please provide your comments by April 15, 2021, so we have adequate time to review and consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

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If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

Dear Mr. Dutton.

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Hanover counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete this project.

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Please provide your comments by April 15, 2021, so we have adequate time to review and consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

Due to the ongoing public health concerns resulting from the spread of the coronavirus, we plan to host a virtual community meeting from 6 p.m. – 7 p.m. on March 30, 2021. In advance of the meeting, we encourage you to visit the project's dedicated webpage at DominionEnergy.com/ladysmith. This page will provide details on the need for the project, maps, and information on structural changes.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to send an email to powerline@dominionenergy.com or call 888-291-0190.

Sincerely,

The Electric Transmission Project Team



## **Investing in Our Communities**



217

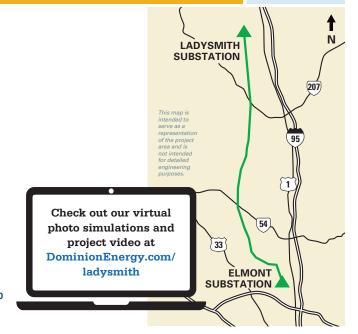
#### IMPORTANT

### **Local Power Line Project Information**

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



**Ladysmith-Elmont Rebuild Project** 



#### **CONTACT US**

ladysmith

DominionEnergy.com/ 888-291-0190

powerline@dominionenergy.com

#### WHAT:

This proposed project is to rebuild a portion of a 500 kV electric transmission line within an existing corridor. An application for project approval will be submitted in April 2021 to the Virginia State Corporation (SCC).

#### WHY:

The existing infrastructure has reached the end of its service life and needs to be replaced to maintain reliable service and comply with current safety standards. New structures will be built in the same general location as the existing structures.

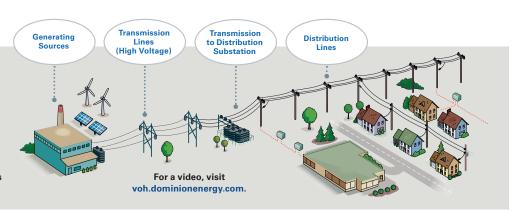
#### WHERE:

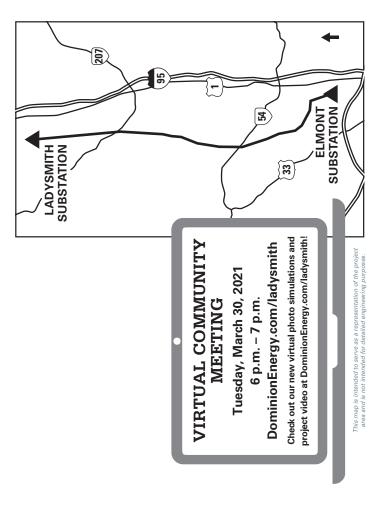
The 26.2-mile transmission line is located between our Ladysmith and Elmont substations in Caroline and Hanover counties.

At Dominion Energy, we know many of our customers are facing challenges due to the COVID-19 pandemic. We're here to help. In accordance with the law recently passed in Virginia, we're offering payment plans between 6 and 24 months. To set up a payment plan, or view additional assistance options, please visit DominionEnergy.com or call 1-866-366-4357.

Delivering Clean, Safe, Affordable and Sustainable Energy

Transmission lines are the tall, high voltage lines that carry electricity over long distances from power generation facilities to substations.





Ladysmith-Elmont Newsprint ad\_9.89x4.5\_March 2021.indd 1

# Dominion Energy Crystal Substation Improvement and Expansion Project dominion003696

#### **Virtual Community Meeting – Pre-Event Copy**

#### **Pre-Event Social Copy**

These ads will run from Monday, March 22 until Tuesday March 30. Each ad will be feature a short video featuring event details and will link to the DominionEnergy.com/ladysmith landing page.

#### Facebook:

**V1 Message:** Join us for a Virtual Community Meeting to learn about the upcoming Ladysmith-Elmont Transmission Line Rebuild Project. This project will help us strengthen the electricity grid and maintain reliable service in the region.

Link Headline: Virtual Community Meeting

Link Description: March 30, 6-7 p.m.

Call to Action Button: Learn More

**V2 Message:** Curious about upcoming work on the Ladysmith-Elmont Transmission Line Rebuild Project? Join us for a live Virtual Community Meeting.

**Link Headline:** Virtual Community Meeting

Link Description: March 30, 6-7 p.m.

Call to Action Button: Learn More

#### Twitter:

**V1 Tweet:** Join us for a Virtual Community Meeting to learn about the upcoming Ladysmith-Elmont Transmission Line Rebuild Project. This project will help us strengthen the electricity grid and maintain reliable service in the region. [link to www.DominionEnergy.com/ladysmith]

**V2 Tweet:** Curious about upcoming work on the Ladysmith-Elmont Transmission Line Rebuild Project? Join us for a live Virtual Community Meeting. [link to www.DominionEnergy.com/ladysmith]

### **Nextdoor:**

### **Headline (Character Limit: 70)**

Virtual Community Meeting

### **Body Text (Character Limit: 90)**

Join us to learn more about the Ladysmith-Elmont Transmission Line Rebuild Project

### Offer Text (Character Limit: 50)

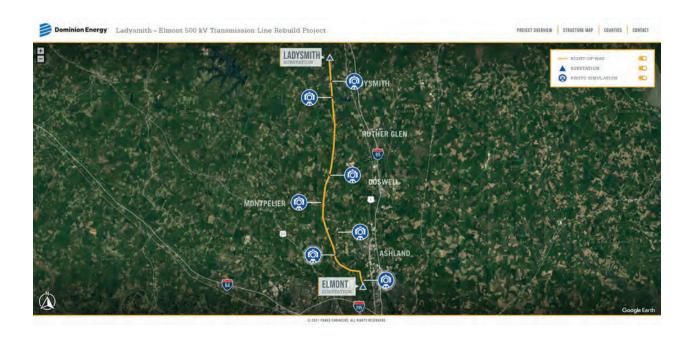
March 17, 6-7 p.m.

### CTA

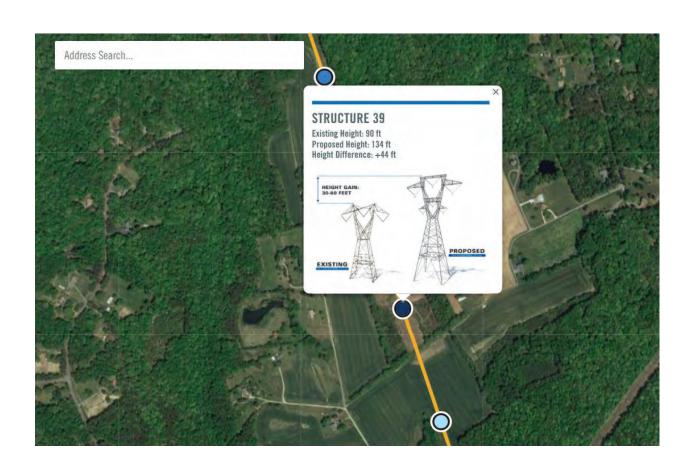
Learn More

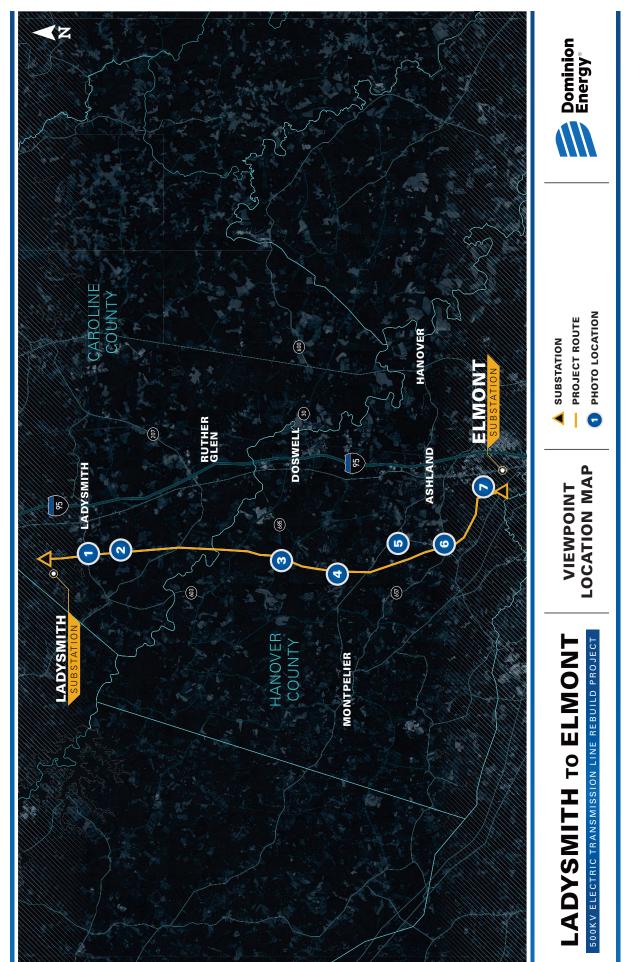
### Example of creative:



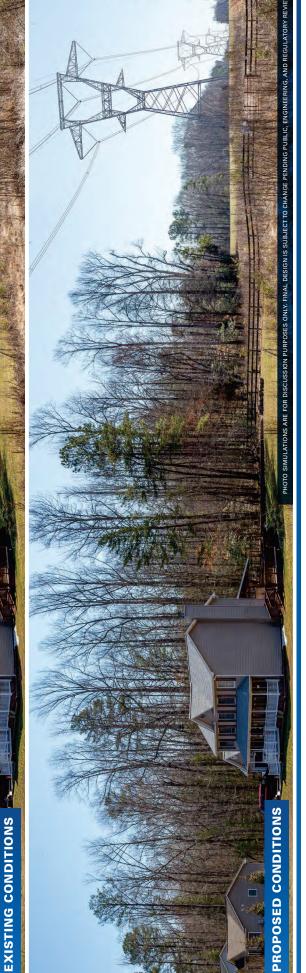
















### **VIEWPOINT 1**

PROPOSED CONDITI





M

PHOTO SIMULATIONS ARE FOR DISCUSSION PURPOSES ONLY, FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, ENGINEERING, AND REGULATORY REVIEW

### **VIEWPOINT 2**

PROPOSED CONDITIONS





PHOTO SIMULATIONS ARE FOR DISCUSSION PURPOSES ONLY. FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, ENGINEERING, AND REGULATORY



## **VIEWPOINT 3**





M

PHOTO SIMULATIONS ARE FOR DISCUSSION PURPOSES ONLY, FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, ENGINEERING, AND REGULATORY REVIEW.

### **VIEWPOINT 4**

PROPOSED CONDITIONS





PHOTO SIMULATIONS ARE FOR DISCUSSION PURPOSES ONLY, FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, ENGINEERING, AND REGULATORY REVIEW

### VIEWPOINT 5

500KV ELECTRIC TRANSMISSION LINE REBUILD PROJECT

OVERLAY

PROPOSED CONDITIONS



M

PHOTO SIMULATIONS ARE FOR DISCUSSION PURPOSES ONLY. FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, ENGINEERING, AND REGULATORY REVIEW

### **VIEWPOINT 6**

PROPOSED CONDITIONS

PROPOSED CONDITIONS



M

PHOTO SIMULATIONS ARE FOR DISCUSSION PURPOSES ONLY, FINAL DESIGN IS SUBJECT TO CHANGE PENDING PUBLIC, ENGINEERING, AND REGULATORY



### **VIEWPOINT 7**

# Welcome

## LADYSMITH TO ELMONT SOOKV ELECTRIC TRANSMISSION LINE REBUILD PROJECT Virtual Community Meeting Dominion Energy Actions Speak Louder

## Welcome



### Agenda

- Safety Message
  - Meet the Team
- Need Proposed Project Overview: Solution
  - Project Video
- Public Engagement & SCC Process Q A

# **About Webex Events**

- Your audio will remain muted and video off throughout the presentation.
- This meeting will be recorded and posted on our website for those who are unable to attend.



# Dominion Energy®

# Safety Message

- Stay at least 30 feet away from downed lines consider them energized and dangerous.
- If a downed line presents clear and imminent danger to you, your property or to others, call **911** first.
- Electricity travels; never touch a power line with any part of your body or with objects.
- If someone makes contact with a downed power line, don't try to rescue them because you risk becoming a victim yourself. Call 911.
- Contact us if you experience an outage at DominionEnergy.com or by calling 866-366-4357.
- Download our app!



# **Submitting Questions**

- Submit questions through the Q Aat any time, select 'All Panelists'.
- Questions will not be answered until we reach the Q A session at the end of the presentation.
- If you have a specific question and would like us to follow up with you after the meeting, include your name and preferred method of contact.

Thank you for your patience as we try to make this virtual meeting as engaging as possible!



Actions Speak Louder

### Actions Speak Louder

# Dominion Energy®

# Project Team



Bob

Project Manager



Sherrill



Greg

Siting & Permitting



Ann Gordon

Max

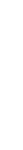


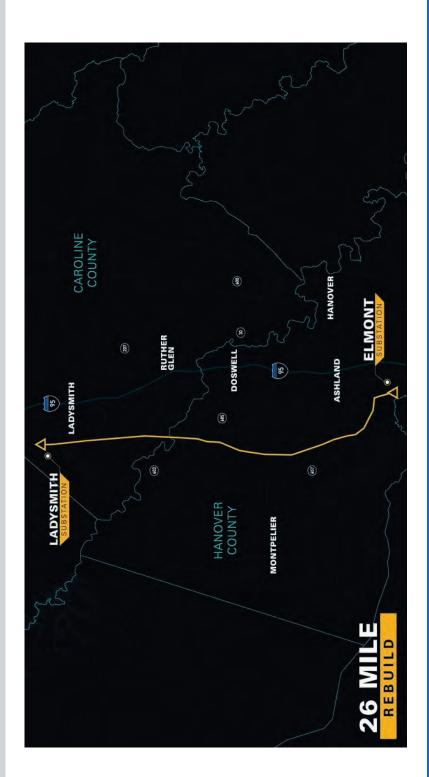
Q A Session Moderator

Environmental

Rachel

**Session Host** 





Actions Speak Louder

### .

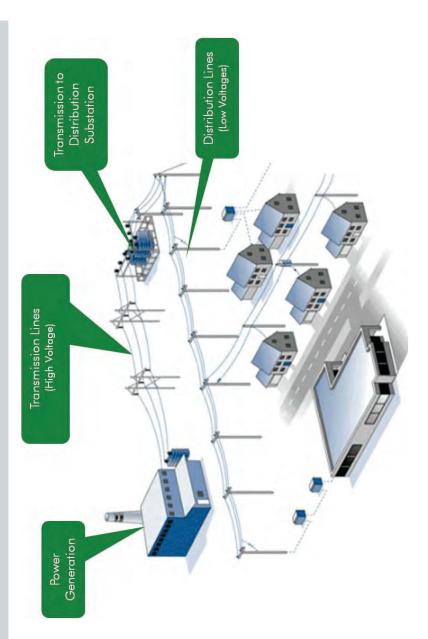
# Electric Transmission Lines 101



Electric transmission and electric distribution lines both carry electricity, but they look different and serve different functions.

Electric transmission lines are high voltage lines that carry electricity from our power stations to substations.

Once the transmission line reaches a substation, the voltage is lowered and delivered to your home or business via electric distribution lines.



# Reliability Concerns & Drivers



Approximately 26.2 miles of 500 kilovolt (kV) transmission line between Ladysmith and Elmont substations have reached the end of their service life.

- Structures were originally installed in the 1960s
- Continued operation risks negatively impacting service reliability



Representative picture of existing weathering steel structures.

Actions Speak Louder





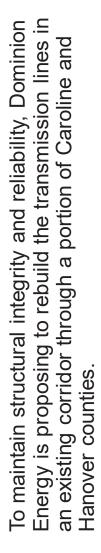
Representative pictures of aging structures.



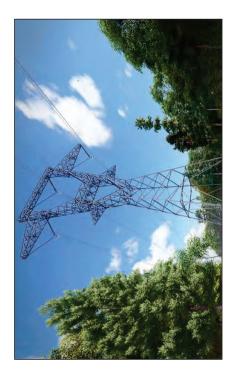


# **Proposed Solution**

Dominion Energy



- Proposed project is located entirely within existing right of way
- Nearly parallel with existing 115 kV line 3.5 miles
- Replaces lattice weathering steel with galvanized steel structures
- Rebuilding to current industry standards; meet future
- Height increases vary along transmission line

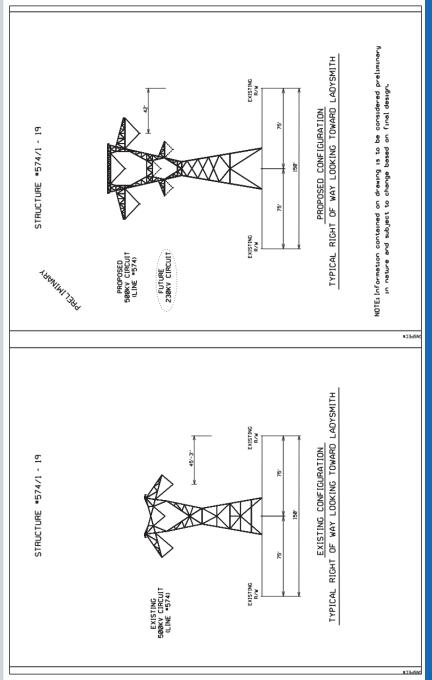


Representative picture of new galvanized steel structures.

# Target completion date: December 2025

# Typical Right of Way Cross-Section





design.

are preliminary and

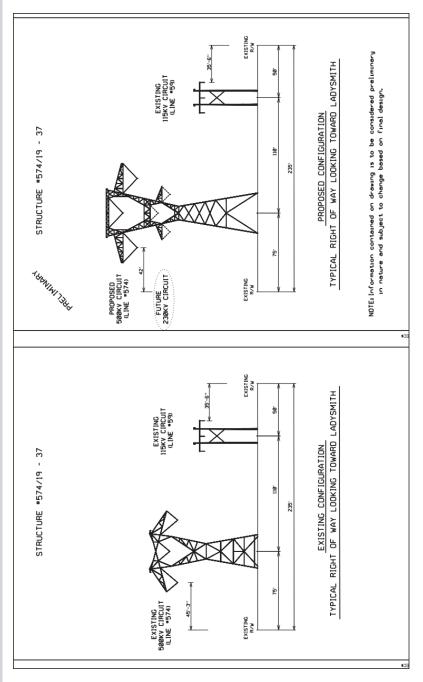
subject to change based on final

\*Heights provided

Actions Speak Louder

# Typical Right of Way Cross-Section





\*Heights provided are preliminary and subject to change based on final design.

Actions Speak Louder



# New Structure Heights





# Let's start the video...

## Actions Speak Louder



Public Engagement Process

# LEARN **Electric Transmission Line Planning and Public Engagement Process** NEWS Dominion Energy consults with key stakeholders throughout the planning process to gather and acorporate feedback into design plan





SCC Application Process

### Electric Transmission Line SCC Application Review Process SCC hearing exentines issues report of recommendation SCC validates the need for a proposed line and approves the route and structures. In reviewing a proposed project, the SCC must consider whether potential impacts on scenic assets, historic districts and the environment have been reasonably minimized. The Virginia State Corporation Commission (SCC) has regulatory authority over all energy provides in Virginia and requires certification fror all transmission lines out of the ordinary course of doing business or are at or above 138 kilovolts (WI). Among other responsibilities, the **B** Process could take as little as eight months to complete if uncontasted, with more complex proceedings ranging from 12-24 months from start to finish Proceedings Steps Optional Step



# Timeline

March 2021	Meet with local elected officials
	<ul> <li>Project website launched; Dedicated email/phone open</li> </ul>
	Solicit input from cultural advocacy groups
March 30, 2021	Virtual community meeting
April 2021	Community outreach continues
Late Spring 2021	File application with Virginia State Corporation Commission (SCC)
Fall 2022	Requested date for SCC approval

### Q&A



- Submit questions through the Q&A at any time, select 'All Panelists'
- Questions will not be answered until we reach the Q A session at the end of the presentation.
- If you have a specific question and would like us to follow up with you after the meeting, include your name and preferred method of contact.

Thank you for your patience as we try to make this virtual meeting as engaging as possible!



# What's Next?

Dominion Energy®



 This meeting will be recorded and posted on our website for those who were unable to attend.

For more information, please visit: **DominionEnergy.com/ladysmith** 





# Thank you for joining!

### Ladysmith-Elmont 500kV Transmission Line Rebuild Project

Welcome to the overview of Dominion Energy's Ladysmith to Elmont 500-kilovolt Electric Transmission Line Rebuild Project.

At Dominion Energy, we are committed to continually reviewing and maintaining our energy infrastructure to provide safe and reliable electric service.

Three primary forces drive the need for new electric transmission infrastructure:

- Economic development, such as population growth or business expansion
- · Aging assets, such as decades old structures that need to be replaced
- And complying with standards to ensure safety and reliability

At Dominion Energy, we believe solutions should always account for future energy needs while continuing to balance cost and impacts.

This project will replace 500-kilovolt weathering steel lattice structures with new galvanized steel lattice structures.

Although the existing structures have been well maintained since their construction in the 1960s, continued operation risks negative impacts to electric service reliability in the area.

Over 100 500-kilovolt weathering steel lattice structures will be replaced by modern galvanized steel, that will be pre-dulled to reduce the initial galvanized sheen. For more information on specific height changes at each tower location, visit the project website at dominionenergy.com/ladysmith. The proposed structures will be built in approximately the same locations as existing structures and the current project design will not require new, permanent rights-of-way.

The approximately 26-mile project will begin at the Ladysmith substation in Caroline County and will end at the Elmont Substation in Hanover County. The target completion date for this project is December 2025.

We know that keeping construction, environmental, and visual impacts to a minimum are important to you. At Dominion Energy, we know that Actions Speak Louder. Across every part of our company, we are transforming the way we do business to build a more sustainable future for the planet, our customers, our team, and our industry.

We are guided every day by a core set of values to ensure projects are successful from start to finish. We work safely, execute our jobs ethically, strive for excellence, foster innovation by welcoming new ideas, and employ strong teamwork with our colleagues and in the communities we proudly serve

Thank you for taking the time to learn about this important project. To learn more about the project, and how it effects each county, please visit our website at dominionenergy.com/ladysmith or email us at <a href="mailto:powerline@dominionenergy.com">powerline@dominionenergy.com</a>.

### **Caroline County**

Dominion Energy's Ladysmith to Elmont 500 kilovolt Electric Transmission Line Rebuild Project will partially take place in Caroline County.

The project will stretch approximately 8.8 miles in Western Caroline County from the Ladysmith Substation to the Hanover County Line.

Dominion Energy will replace 40, 500-kilovolt weathering steel lattice structures with new galvanized steel that will be pre-dulled to reduce the initial galvanized sheen. These 40 structures will be approximately 34 feet taller on average than existing structures, going from an average 116 feet tall, to an average 150 feet tall. For more information on specific height changes at each tower location, visit the project website at dominionenergy.com/ladysmith. The proposed structures will be in approximately the same locations as existing structures and the current project design will not require new, permanent rights-of-way.

This construction is proposed to be completed by December 2025.

Thank you for taking the time to learn how this project will affect Caroline County, for more information visit the project website at dominionenergy.com/ladysmith or email us at <a href="mailto:powerline@dominionenergy.com">powerline@dominionenergy.com</a>.

### **Hanover County**

Dominion Energy's Ladysmith to Elmont 500 kilovolt Electric Transmission Line Rebuild Project will partially take place in Hanover County.

The project will stretch approximately 17.3 miles in Hanover County from the Caroline County Line to the Elmont Substation.

Dominion Energy will replace 83, 500-kilovolt weathering steel lattice structures with new galvanized steel that will be pre-dulled to reduce the initial galvanized sheen. These 83 structures will be approximately 36 feet taller on average than existing structures, going from an average 108 feet tall, to an average 144 feet tall. For more information on specific height changes at each tower location, visit the project website at dominionenergy.com/ladysmith. The proposed structures will be in approximately the same locations as existing structures and the current project design will not require new, permanent rights-of-way.

This construction is proposed to be completed by December 2025.

The Company considers impacts to historic resources that are eligible for or listed in the National Register of Historic Places in proximity of the project. Assessment of impacts is conducted through a combination of field inspection, digital photography, and photo simulation. Assessment of impacts considers whether the project has the potential to alter or diminish the integrity of the property; and additionally, whether the proposed project may introduce new visual elements into a property's viewshed. This assessment conducted by qualified individuals, is performed in coordination with, and reviewed by, the Virginia Department of Historic Resources.

ink you for taking the time to learn how this project will affect Hanover County, for more rmation visit the project website at dominionenergy.com/ladysmith or email us at	re
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### Dominion Energy Ladysmith-Elmont Transmission Line Rebuild Project dominion003696

### **Virtual Community Meeting – Post-Event Copy**

### Pre-Event Social Copy

These ads will run from Monday, April 5 through Tuesday April 13. Each ad will be feature a short video featuring event details and will link to the DominionEnergy.com/ladysmith landing page where the event recording is hosted.

### Facebook:

**V1 Message:** We're keeping residents informed about the upcoming Ladysmith-Elmont Transmission Line Rebuild Project. This project will help strengthen our electric grid and maintain reliable service in the region.

Link Headline: Virtual Community Meeting

Link Description: Watch the Recording

Call to Action Button: Learn More

**V2 Message:** Curious about upcoming work on the Ladysmith-Elmont Transmission Line Rebuild Project? Watch our recent Virtual Community Meeting.

Link Headline: Virtual Community Meeting

Link Description: Watch the Recording

Call to Action Button: Learn More

### Twitter:

**V1 Tweet:** We're keeping residents informed about the upcoming Ladysmith-Elmont Transmission Line Rebuild Project. This project will help strengthen our electric grid and maintain reliable service in the region. [link to www.DominionEnergy.com/ladysmith]

**V2 Tweet:** Curious about upcoming work on the Ladysmith-Elmont Transmission Line Rebuild Project? Watch our recent Virtual Community Meeting. [link to www.DominionEnergy.com/ladysmith]

charlesryan.com

### Nextdoor:

**Headline (Character Limit: 70)** Virtual Community Meeting

**Body Text (Character Limit: 90)** 

Learn more about the Ladysmith-Elmont Transmission Line Rebuild Project.

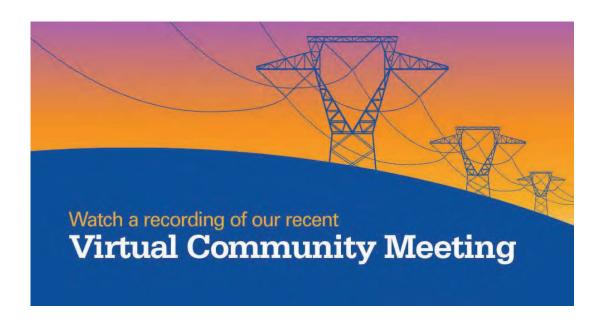
Offer Text (Character Limit: 50)

Watch the Recording

**CTA** 

Learn More

### Example of creative:



### 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:

During the initial review of the existing Rebuild Project transmission corridor, the Company identified 13 unauthorized encroachments in the Rebuild Project right-of-way. The encroachments will need to be addressed with the respective property owners as the Company continues to investigate the right-of-way. The Company is not aware of any residences encroaching on the existing corridor and does not expect to have any residences demolished or relocated in connection with the Rebuild Project.

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:

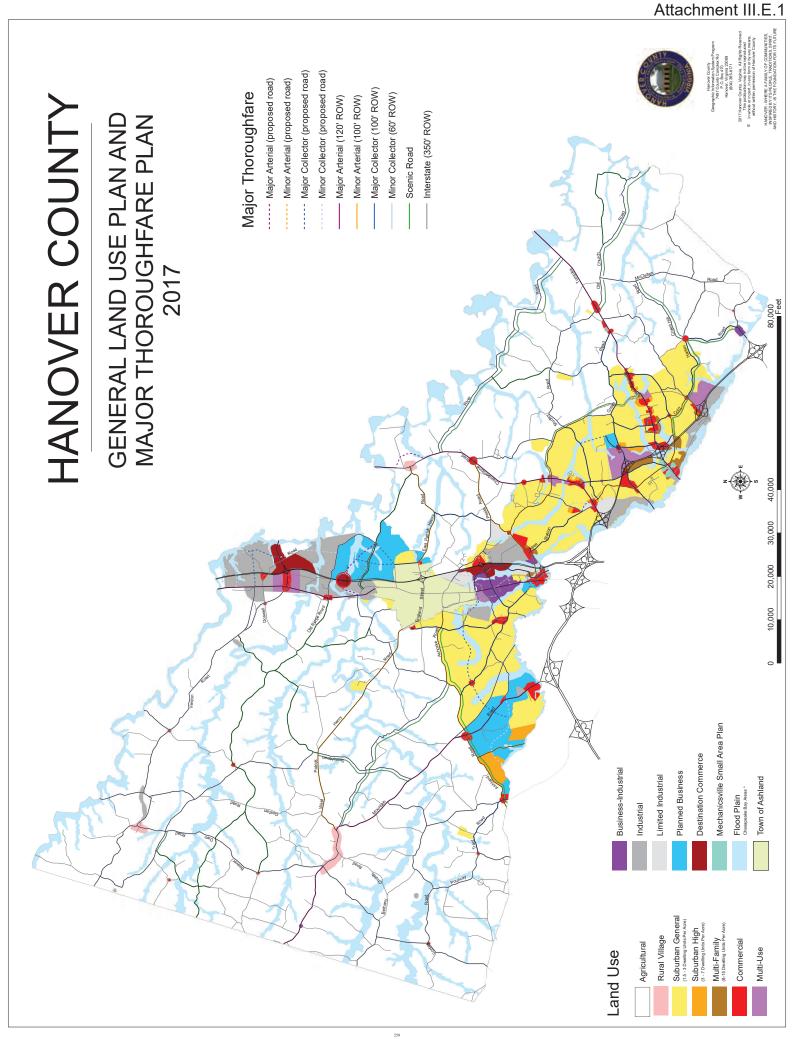
Construction of Line #574 was completed in 1966 and the right-of-way has been in continuous use since that time. The proposed Rebuild Project shares the existing transmission corridor right-of-way with Line #59 for approximately 3.5 miles from Structure #574/19 to Structure #574/37. A sewer line parallels and is co-located within the right-of-way for approximately 0.7 mile from Structure #574/111 to Structure #574/114. A waterline intersects the right-of-way between Structure #574/113 and Structure #574/114. A gas pipeline intersects the right-of-way at Structure #574/119, where Line #59 leaves the right-of-way.

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 *Hanover County Comprehensive Plan* and *Caroline County Comprehensive Plan* to evaluate the potential effect the Rebuild Project could have on future development. The placement and construction of electric transmission lines is not addressed within these plans. The Rebuild Project is located entirely within existing right-of-way or on Company-owned property and is not expected to affect land use. The Rebuild Project is not expected to impact the character of these localities as the transmission corridor has been in use for at least 54 years.

See <u>Attachment III.E.1</u> and <u>2</u> for the County Land Use Maps.



#### 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:

- Comprehensive Plans and County Ordinances were reviewed to determine
  whether the governing bodies of Hanover and Caroline Counties have
  designated important farmlands within their jurisdiction under Va. Code §
  3.2-205 B. No designations were identified. The proposed Rebuild
  Project is not expected to impact current land uses in Hanover or Caroline
  Counties as the Rebuild Project is being reconstructed within the existing
  corridor that has been in use since 1966.
- 2. Not applicable.

- 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. There is one architectural resource listed on the National Register of Historic Places within 1.5 miles of the project.
- 2. There is one battlefield that is crossed by the Rebuild Project, and seven architectural resources within one mile of the Rebuild Project that have been determined eligible for listing on the National Register of Historic Places by the Virginia Department of Historic Resources. Twenty-seven archaeological sites are located within one mile of the Rebuild Project. Of these, one has been determined eligible for listing on the National Register of Historic Places. However, none of the archaeological sites are located within or immediately adjacent to the right-of-way.
- 3. None.
- 4. None
- 5. None.
- 6. None.
- 7. None.
- 8. None.
- 9. The existing right-of-way intersects a small portion of a VOF easement (HAN-VOF-2872). There are four other VOF easements (HAN-VOF-3816, HAN-VOF-2317, HAN-VOF-2316, and HAN-VOF-3346) and one local easement (Handley Easement) within one mile of the Rebuild Project. See <a href="https://doi.org/10.1007/journal.com/">Attachment II.A.9</a>.
- 10. The project crosses the North Anna River and South Anna River, which are qualified state scenic rivers. These rivers have not yet been designated by the Department of Conservation and Recreation.
- 11. There are fifteen parcels owned by Hanover County or its school district, one parcel owned by Caroline County school district, and two parcels owned by Henrico County within one mile of the Rebuild Project.
- 12. The Richmond National Battlefield Park, which is crossed by the Rebuild Project, is owned by the National Park Service. In addition, the American Battlefield Trust owns a property adjacent to the battlefield and within one mile of the Rebuild Project.

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 website (<a href="https://oeaaa.faa.gov/oeaaa/external/portal.jsp">https://oeaaa.faa.gov/oeaaa/external/portal.jsp</a>) to identify airports within 10 miles of the proposed Rebuild Project. Based on this review, one FAA-restricted airport was identified:

• Hanover County Municipal Airport, 2.5 miles east of the Elmont Substation

In an email dated April 2, 2021, 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 Rebuild Project will not constitute a hazard to air navigation. The Company had previously submitted Form 7460 to the FAA on March 19, 2021, to initiate aeronautical studies and will design the proposed structures to avoid interference with air navigation. See also Section 2.N of the DEQ Supplement.

The existing right-of-way crosses an historic property (Cool Water) off of Old Ridge Road. There is a private grass air strip on this property for small planes located in close proximity to the existing line. The FAA only regulates public airports, not grass airstrips. Therefore, the FAA does not take any jurisdiction over this private airstrip. The FAA data shows just one airplane is based at this airstrip. While not required to do so by any government agency, the Company plans to communicate with the landowner about the Rebuild Project.

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 existing right-of-way to be used for 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.

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

Response:

As described in Section V.D, the Company solicited feedback from the Hanover County and Caroline County Administrators regarding the proposed Rebuild Project. Below is a list of coordination efforts that have occurred with other 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.H.2 of the DEQ Supplement.
- The Company solicited comments from the Virginia Marine Resources Commission ("VMRC") and the Corps regarding the proposed Rebuild Project. See Attachment 2 of the DEQ Supplement.
- The Company requested comments from the USFWS, DWR, and DCR regarding the proposed Rebuild Project. See Attachment 2 of the DEQ Supplement.
- The Company solicited the Hanover County and Caroline County Administrators for comments on the proposed Rebuild Project. See Attachment 2 of the DEQ Supplement.
- The Company solicited comments from the FAA and DOAv regarding the proposed Rebuild Project. See Attachment 2 of the DEQ Supplement.
- Letters were submitted to the agencies listed in Section V.C in March 2021 describing the Rebuild Project and requesting comment.
- Letters were submitted to Hanover County and Caroline County pursuant to Va. Code § 15.2-2202 E to describe the Rebuild Project and request comment. See Section V.D of this Appendix.
- In March 2021, the Company sent letters to the Virginia Department of Historic Resources.
- In March 2021, the Company solicited comments via letter from several federally-recognized and state-recognized Native American tribes, including:
  - o Cheroenhaka (Nottoway) Indian Tribe
  - o Chickahominy Indian Tribe
  - Chickahominy Indians Eastern Division
  - Mattaponi Tribe
  - o Monacan Nation
  - Nansemond Indian Nation
  - Nottoway Indian Tribe of Virginia
  - o Pamunkey Indian Museum and Cultural Center
  - o Pamunkey Indian Tribe

- o Patawomeck Indian Tribe of Virginia
- o Rappahannock Tribe
- o The Upper Mattaponi Indian Tribe

The same overview map (<u>Attachment III.B.2</u>) was sent to property owners along with an enclosed letter. A copy of the letter template is included as <u>Attachment III.J.1</u>

See also Sections III.B, III.K, and V.D of this Appendix, and the DEQ Supplement.

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



March 15, 2021

#### Proposed Ladysmith-Elmont Electric Transmission Partial Rebuild Project

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community, we invite you to participate in the development of an electric transmission partial rebuild project along an existing transmission corridor.

After more than five decades of operation, the weathering steel, lattice structures between our Ladysmith and Elmont substations located in Caroline and Elmont counties need to be replaced to maintain reliability for our customers and bring facilities up to current standards. The 26.2-mile 500 kilovolt (kV) line is positioned within an existing corridor and the currently proposed design requires no additional rights of way to complete the project.

We are currently in the conceptual phase and are seeking input prior to submitting an application with the Virginia State Corporation Commission (SCC) in spring 2021. Doing so allows us to hear any concerns you may have as we work to meet the project's needs. Enclosed is a project overview map to help in your review.

We are committed to the purposeful and early inclusion of tribal communities in project communication processes. By reaching out early and encouraging meaningful conversation, we hope to keep tribal communities informed and engaged.

Please provide your comments by April 15, 2021, so we have adequate time to review and consider your comments in our project design and as part of our SCC application. We appreciate your assistance as we move through the planning process.

Due to the ongoing public health concerns resulting from the spread of the coronavirus, we plan to host a virtual community meeting from 6 p.m. – 7 p.m. on March 30, 2021. In advance of the meeting, we encourage you to visit the project's dedicated webpage at DominionEnergy.com/ladysmith. This page will provide details on the need for the project, maps, and information on structural changes.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to contact our team by sending an email to powerline@dominionenergy.com or calling 888-291-0190. You may also contact Ken Custalow, our Tribal Liaison, by email at ken.custalow@dominionenergy.com or by calling 804-837-2067.

Sincerely.

The Electric Transmission Project Team

**Enclosure: Project Overview Map** 

cc Ken Custalow

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

Response:

In March 2021, 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.J.1.

Name	Organization
Ms. Elizabeth S. Kostelny	Preservation Virginia
Mr. Thomas Gilmore	American Battlefield Trust
Mr. Jim Campi	American Battlefield Trust
Ms. Kym Hall	Colonial National Historical Park
Mr. Jack Gary	Council of Virginia Archaeologists
Ms. Leighton Powell	Scenic Virginia
Mr. Alexander Macaulay	Macaulay & Jamerson
Ms. Sharee Williamson	National Trust for Historic Preservation
Mr. Dan Holmes	Piedmont Environmental Council
Dr. Newby-Alexander	Norfolk State University

In a letter dated April 15, 2021, the VOF indicated that they hold five (5) open space easements located within 1.5 miles of the Rebuild Project and requested that Project components be minimized in their presence on the landscape, or at the least, mimic the characteristics of the existing towers in height, size, and reflectivity to the greatest extent practicable. See Attachment 2.K.2 to the DEQ Supplement. While the proposed structures will be taller than the existing, the Company will use galvanized steel towers with a dulled finish and dulled conductor and shield wire to reduce glare.

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

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

### **Potential Permits**

Activity	Permit	Agency
Impacts to wetlands and	Nationwide	U.S. Army Corps of
waters of the U.S.	Permit 57	Engineers
Impacts to wetlands and waters of the U.S.	Virginia Water Protection Permit	Virginia Department of Environmental Quality
Work within, over or under state subaqueous bottom	Subaqueous Bottom Permit	Virginia Marine Resources Commission
Discharges of Stormwater from Construction Activities	Construction General Permit	Virginia Department of Environmental Quality
Work within VDOT right-	Land Use Permit	Virginia Department of
of-way		Transportation
Airspace obstruction	FAA 7460-1	Federal Aviation
evaluation		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 transmission line. EMF levels are provided for both historical (2020) and future (2025) annual average and maximum (peak) loading conditions.

#### Existing lines – Historical average loading

EMF levels were calculated for the existing lines at the *historical average* load condition (121 amps for line 59 and 367 amps for line 574) and at an operating voltage of 120.75 and 525 kV when supported on the existing structures – see Attachment II.A.5.a, b, and c.

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 rights-of-way for the existing lines at the historical average loading:

	<u>Western Edge</u>		<u>Eastern Edge</u>	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	2.832	21.486	2.832	21.486
Attachment II.A.5.b	2.843	21.746	0.549	9.960
Attachment II.A.5.c	2.833	21.456	2.833	21.456

#### Existing lines – Historical peak loading

EMF levels were calculated for the existing line at the *historical peak* load condition (744 amps for line 59 and 1533 amps for line 574) and at an operating voltage of 120.75 and 525 kV when supported on the existing structures – see Attachment II.A.5. a, b, and c.

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

EMF levels at the edge of the rights-of-way for the existing lines at the historical peak loading:

	Western Edge		Eastern Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	2.828	90.759	2.828	90.759
Attachment II.A.5.b	2.839	92.537	0.542	56.253
Attachment II.A.5.c	2.829	90.660	2.829	90.660

#### **Proposed project – Historical average loading**

Western Edge

EMF levels were calculated for the proposed Rebuild Project at the *historical average* load condition (121 amps for line 59 and 367 amps for line 574) and at an operating voltage of 120.75 and 525 kV when supported on the proposed Rebuild Project structures – see Attachment II.A.5.a, b, and c.

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

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

Factorn Edge

	Western Euge		<u> Eastern Euge</u>	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	<u>1</u> 2.586	15.127	2.587	15.128

Attachment II.A.5.b	2.598	15.262	0.605	9.858
Attachment II.A.5.c	2.548	14.893	2.548	14.893

### Proposed project - Historical peak loading

EMF levels were calculated for the proposed Rebuild Project at the *historical peak* load condition (744 amps for line 59 and 1533 amps for line 574) and at an operating voltage of 120.75 and 525 kV when supported on the proposed Rebuild Project structures – see <u>Attachment II.A.5.</u> a, b, and c.

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

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

	Western Edge		Eastern Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	2.608	63.731	2.608	63.735
Attachment II.A.5.b	2.619	64.615	0.602	55.518
Attachment II.A.5.c	2.570	62.748	2.570	62.752

#### Proposed project – Projected average loading in 2025

EMF levels were calculated for the proposed Rebuild Project at the *projected average* load condition (126 amps for line 59 and 382 amps for line 574) and at an operating voltage of 120.75 and 525 kV when supported on the proposed Rebuild Project structures – see <u>Attachment II.A.5. a, b, and c.</u>

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 rights-of-way for the proposed Rebuild Project at the projected average loading:

### Western Edge

### **Eastern Edge**

	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	2.589	15.761	2.589	15.762
Attachment II.A.5.b	2.601	15.901	0.605	10.263
Attachment II.A.5.c	2.550	15.516	2.550	15.517

### **Proposed project – Projected Peak loading in 2025**

EMF levels were calculated for the proposed Rebuild Project at the *projected peak* load condition (774 amps for line 59 and 1595 amps for line 574) and at an operating voltage of 120.75 and 525 kV when supported on the proposed Rebuild Project structures – see <u>Attachment II.A.5. a, b, and c.</u>

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

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

	Western Edge		Eastern Edge	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
Attachment II.A.5.a	2.611	66.370	2.611	66.374
Attachment II.A.5.b	2.622	67.290	0.601	57.864
Attachment II.A.5.c	2.572	65.343	2.572	65.347

#### 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 two decades are the foundation of the Company's opinion that no adverse health effects will result from the operation of the proposed 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 biological and health research have been conducted by numerous scientific and health agencies, including 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")] (EFHRAN, 2010, 2012; ICNIRP, 2010; WHO, 2007; SCENIHR, 2009, 2015; SSM, 2015, 2016, 2018, 2019; 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 WHO, for example, states on their website: "Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any

health consequences from exposure to low level electromagnetic fields" (WHO, 2020).

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, 2016, 2018, and 2019). 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 the International Commission on Non-ionizing Radiation (ICNIRP) and the IEEE's International Committee on Electromagnetic Safety (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 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.

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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.

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

World Health Organization (WHO). Electromagnetic fields (EMF). World Health Organization, 2020.

http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html (last accessed March 23, 2020).

#### 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." <sup>10</sup>

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. One of the most comprehensive and detailed reviews of the relevant scientific peer-reviewed literature was published by the WHO in 2007. The conclusion of the WHO, as currently expressed on its website, is consistent with the earlier VDH conclusions: "Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields." 11

Research published in the peer-reviewed literature subsequent to the WHO report has been reviewed by several scientific organizations, including most notably:

- SCENIHR, a committee of the European Commission, that published its assessments in 2009 and 2015;
- The Swedish Radiation Safety Authority ("SSM"), formerly the Swedish Radiation Protection Authority ("SSI"), that has published annual reviews of the relevant peer-reviewed scientific literature since 2003, with its most recent

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<sup>&</sup>lt;sup>10</sup> See http://www.vdh.virginia.gov/content/uploads/sites/12/2016/02/highfinal.pdf.

<sup>&</sup>lt;sup>11</sup> See http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html.

review published in 2019; 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 to exposure to EMF are consistent with the conclusions of the VDH and the WHO reports. 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, 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.

Recent epidemiologic studies of EMF and childhood leukemia 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) reanalyzed 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 kilovolts ["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 Quebéc. 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 [i.e., 4 milligauss]). No associations were observed with low-voltage power lines (< 200 kV).
- 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.

Recent epidemiologic studies of EMF and neurodegenerative diseases 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 Parkinsonism <sup>12</sup> 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.
- 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.

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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).

- 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.
- 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.
- Röösli 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.

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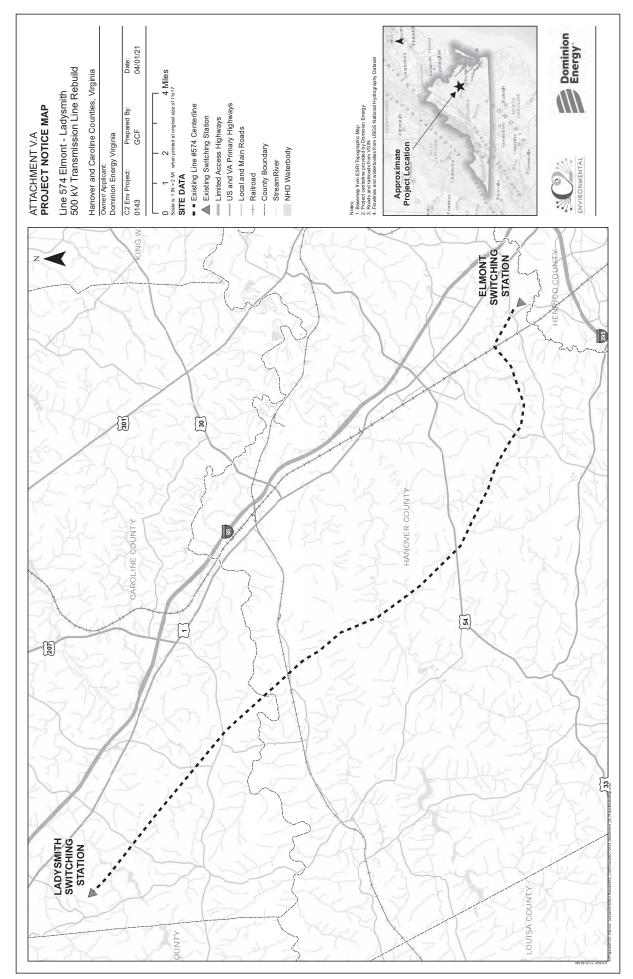
A. Furnish a proposed route description to be used for public notice purposes. Provide a map of suitable scale showing the route of the proposed project. For all routes that the Applicant proposed to be noticed, provide minimum, maximum and average structure heights.

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 26.2-mile right-of-way currently occupied by an existing 500 kV transmission corridor. The existing transmission corridor right-of-way for the proposed route originates at Structure #574/1A within the Company's existing Elmont Substation in Hanover County and heads north for approximately 17.4 miles in Hanover County and continues approximately 8.8 miles in Caroline County before reaching Structure #574/124 within the Company's existing Ladysmith Substation in Caroline County. The right-of-way crosses Stony Run, Stagg Creek, Dog Branch, South Anna River, Beaver Creek, Newfound River, Little River, North Anna River, Polecat Creek, Stevens Mill Run, and South River. In Hanover County, the Rebuild Project crosses Cedar Lane (Route 623), Ashcake Road (Route 657), Blanton Road (Route 666), W. Patrick Henry Road (Route 54), Scotchtown Road (Route 685), Old Ridge Road (Route 738), and Verdon Road (Route 684). In Caroline County, the Rebuild Project crosses Jericho Road (Route 658) and Ladysmith Road (Route 639).

For the overall Rebuild Project, the minimum structure height is approximately 119 feet, the maximum structure height is approximately 174 feet and the average structure height is approximately 146 feet, based on preliminary conceptual design, not including foundation reveal and subject to change based on final engineering design.



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: Due to the ongoing public health crisis, the application is available for public inspection electronically at the following website:

https://www.dominionenergy.com/ladysmith.

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.

Ms. Bettina Rayfield,
Manager, Environmental Impact Review and Long Range Priorities
Office of Environmental Impact Review
Department of Environmental Quality, Central Office
PO Box 1105
Richmond, Virginia 23218

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

Ms. Trisha Beasley VWP Permit Manager, Northern Regional Office Department of Environmental Quality 13901 Crown Court Woodbridge, VA 22193

Ms. Jaime Robb Water Program Manager, Piedmont Regional Office Department of Environmental Quality 4949-A Cox Road Glen Allen, Virginia 23060

Ms. Robbie Rhur Environmental Specialist, Planning & Recreation Department of Conservation and Recreation 600 East Main Street, 24th Floor Richmond, Virginia 23219

Ms. S. Rene Hypes Environmental Review Coordinator, Natural Heritage Program Department of Conservation and Recreation 600 East Main Street, 24th Floor Richmond, Virginia 23219 Ms. Amy M. Ewing Environmental Services Biologist Manager Virginia Department of Wildlife Resources P.O. Box 90778 Henrico, Virginia 23228

Mr. Keith Tignor Endangered Plant and Insect Species Program Virginia Department of Agriculture and Consumer Affairs 102 Governor Street Richmond, Virginia 23219

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

Mr. Terry Lasher Forestland Conservation Division Virginia Department of Forestry 900 Natural Resources Drive, Suite 800 Charlottesville, Virginia 22903

Mr. Tony Watkinson Habitat Management Division Virginia Marine Resources Commission Building 96, 380 Fenwick Road Fort Monroe, Virginia 23651

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

Mr. Todd Miller U.S. Army Corps of Engineers Norfolk District, Southern Section 9100 Arboretum Parkway, Suite 235 Richmond, VA 23236

Ms. Martha Little Virginia Outdoors Foundation 600 East Main Street, Suite 402 Richmond, Virginia 23219 Mr. Conrad Spencer, III Virginia Department of Mine, Minerals, and Energy 1100 Bank Street Washington Building, 8<sup>th</sup> Floor Richmond, Virginia 23219

Mr. Michael Dowd Department of Environmental Quality Air Division P.O. Box 1105 Richmond, Virginia 23218

Mr. Robert Alexander Obstruction Evaluation Specialist, Eastern Regional Office Federal Aviation Administration 159-30 Rockaway Blvd Jamaica, New York 11434

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

Mr. Marshall Winn Ashland Residence Administrator, Richmond District Virginia Department of Transportation 2430 Pine Forest Drive Colonial Heights, VA 23834

Mr. Kyle Bates, P.E. Fredericksburg Residence Engineer, Fredericksburg District Virginia Department of Transportation 87 Deacon Road Fredericksburg, VA 22405

Mr. John A. Budesky Hanover County Administrator 7516 County Complex Road Hanover, VA 23069

Mr. Charles M. Culley, Jr. Caroline County Administrator P.O. Box 447 Bowling Green, VA 22427

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 March 18, 2021, were sent to Mr. John A Budesky, County Administrator in Hanover County, and Mr. Charles M. Culley, Jr., County Administrator in Caroline County, advising of the Company's intention to file this Application and inviting the counties to consult with the Company about the proposed Rebuild Project. These letters are included as Attachments V.D.1 and V.D.2.

Dominion Energy Virginia 10900 Nuckols Rd, 4<sup>th</sup> Floor Glen Allen, VA 23060 DominionEnergy.com



March 18, 2021

Mr. John A. Budesky Hanover County Administrator 7516 County Complex Road Hanover, VA 23069

Reference: Dominion Energy Virginia's Proposed Elmont - Ladysmith 500 kV Transmission

Line #574 Rebuild, Hanover and Caroline Counties, Virginia

Notice Pursuant to Va. Code §15.2-2202 E

Dear Mr. Budesky,

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing Elmont – Ladysmith 500 kV Transmission Line #574 along a 26.2-mile corridor between the existing Elmont Substation in Hanover County and the existing Ladysmith Substation in Caroline County (collectively, the "Rebuild Project"). Approximately 17.4 miles of the project is located directly in Hanover County. The Rebuild Project will replace aging infrastructure that is at the end of its service life, thereby continuing to enable the Company to maintain safe and reliable electric transmission service to its customers. The Rebuild Project is entirely within existing transmission line right-of-way or on Company-owned property and no additional right-of-way is necessary.

The Company is preparing an application for Certificate of Public Convenience and Necessity ("CPCN") from 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 Project within 30 days of the date of this letter. Enclosed is a Project Location Map depicting the rebuild route and project location.

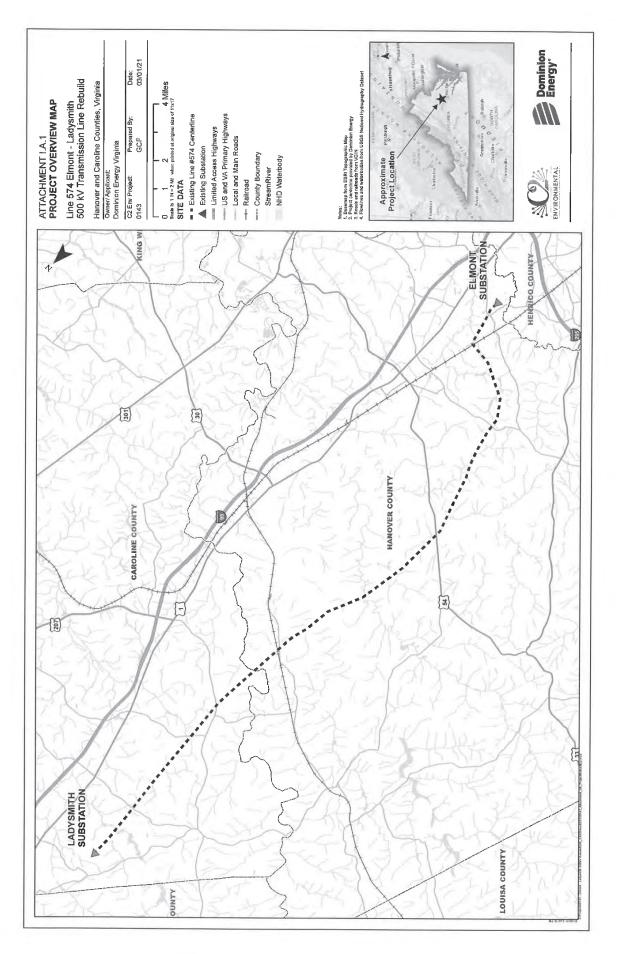
If you would like to receive a GIS shapefile of the rebuild route to assist in your project review or if you have any questions, please do not hesitate to contact me directly at (804)201-3053 or <a href="mailto:Greg.R.Baka@dominionenergy.com">Greg.R.Baka@dominionenergy.com</a>. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Greg R. Baka

Siting and Permitting Specialist

Attachment: Project Location Map



Dominion Energy Virginia 10900 Nuckols Rd, 4<sup>th</sup> Floor Glen Allen, VA 23060 DominionEnergy.com



March 18, 2021

Mr. Charles M. Culley, Jr.
Caroline County Administrator
P.O. Box 447
Bowling Green, VA 23089 1247

Reference: Dominion Energy Virginia's Proposed Elmont - Ladysmith 500kV Transmission

Line Rebuild, Hanover and Caroline Counties, Virginia

Notice Pursuant to Va. Code §15.2-2202 E

Dear Mr. Culley,

Dominion Energy Virginia (the "Company") is proposing to rebuild the existing Elmont – Ladysmith 500 kV Transmission Line #574 along a 26.2-mile corridor between the existing Elmont Substation in Hanover County and the existing Ladysmith Substation in Caroline County (collectively, the "Rebuild Project"). Approximately 8.8 miles of the project is located directly in Caroline County. The Rebuild Project will replace aging infrastructure that is at the end of its service life, thereby continuing to enable the Company to maintain safe and reliable electric transmission service to its customers. The Rebuild Project is entirely within existing transmission line right-of-way or on Company-owned property and no additional right-of-way is necessary.

The Company is preparing an application for Certificate of Public Convenience and Necessity ("CPCN") from 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 Project within 30 days of the date of this letter. Enclosed is a Project Location Map depicting the rebuild route and project location.

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)201-3053 or <a href="mailto:Greg.R.Baka@dominionenergy.com">Greg.R.Baka@dominionenergy.com</a>. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Greg R. Baka

Siting and Permitting Specialist

Attachment: Project Location Map

