

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Atlantic Coast Pipeline, LLC

Docket No. CP15-554-000

**COMMENTS OF FRIENDS OF WINTERGREEN, INC.  
ON PROPOSED AND ALTERNATIVE ROUTES**

Pursuant to the Supplemental Notice of Intent to Prepare an Environmental Impact Statement issued by the Federal Energy Regulatory Commission (“FERC” or the “Commission”) on May 3, 2016, Friends of Wintergreen, Inc. (“Friends of Wintergreen” or “FOW”) hereby provides its comments on the Applicants’ proposed new route. As part of these comments, FOW will also respond to the March 10, 2016 responses filed by Atlantic Coast Pipeline, LLC (“ACP”) and Dominion Transmission, Inc. (collectively “Dominion”) to the data requests concerning alternatives propounded by the Office of Energy Projects (“OEP”) on December 4, 2015 (the “Dominion Response”).

As explained below, Dominion’s newly proposed route remains deficient because it continues to cause significant adverse environmental, safety and economic impacts in the Wintergreen area. Moreover, Dominion has yet to perform a bona fide evaluation of alternatives that would avoid these impacts as requested by OEP in its data requests. Specifically, Dominion has steadfastly avoided an evaluation of the specific route alternatives and deviations proposed by FOW. As discussed in more detail below, any of the route alternatives proposed by FOW would avoid the substantial adverse impacts ACP would have on the Wintergreen area and all of these alternatives are environmentally preferable to Dominion’s proposed route.

FOW is authorized to state that Wintergreen Property Owners Association, Inc. (“WPOA”) and Wintergreen Resort (the “Resort”) join in and support these Comments fully.

## I. BACKGROUND

On October 23, 2015, Friends of Wintergreen moved to intervene and protest ACP's application for a certificate of public convenience and necessity authorizing the construction of facilities along the route proposed by ACP for in the above-captioned proceeding (the "Proposed Route"). FOW stated in its protest that it was not opposed to the ACP generally. FOW demonstrated, however, that the Proposed Route would cause serious adverse and unnecessary economic, safety and environmental impacts. FOW explained that all of these adverse impacts could be avoided without reducing the benefits of the ACP if the Proposed Route were slightly altered.

As detailed by FOW, ACP's Proposed Route would create the following serious economic and environmental impacts, safety risks, and disturbance of cultural resources and historical properties in the Wintergreen area that Friends of Wintergreen and other Intervenors have identified:

- The Proposed Route will prevent two economic development projects at Wintergreen Resort and Spruce Creek Spa and Market that are scheduled to bring \$75 million in initial investments, at least 250 full-time jobs and \$23-\$32 million in annual revenue to Nelson County, Virginia.
- The Proposed Route will decrease the value and economic opportunities for the largest employer in Nelson County, Wintergreen Resort, with a projected 20% drop in annual revenue, and will disrupt the burgeoning tourist industry in the Route 151 corridor. Dominion has recently indicated that it will use Wintergreen Drive, Fortunes Ridge Drive and Fortune's Point Lane, all of which are private roads at Wintergreen, as

“access roads” for its massive construction work, so the disruption to the Resort will be substantially greater than previously believed and the drop in annual revenue likely will exceed 20%.

- The Proposed Route will create a host of negative environmental issues, including unnecessarily impacting conservation lands, wetlands, source water protection areas, and other natural resources.

- The Proposed Route would pass directly across the sole entrance/exit to Wintergreen Resort. During peak vacation periods such as summer and the winter holiday, Wintergreen Resort routinely hosts more than 10,000 residents and guests. Because there is only one entry and exit road for Wintergreen Resort and the Wintergreen residential community, this creates an unnecessary and potentially catastrophic safety risk if an explosion or gas leak occurred.

- According to the Rockfish Valley Foundation, which is an Intervenor in this proceeding, the Proposed Route will disturb numerous cultural resources and historic properties, nature trails, waterbodies and the Spruce Creek Tributary Conservation Site.<sup>1</sup> Recently this area, which includes Coleman Mills, has been designated by Preservation Virginia as one of Virginia’s Most Endangered Historical Places.<sup>2</sup>

- According to Friends of Horizon Village, which is also an Intervenor in this proceeding, the Proposed Route will adversely impact approximately 40 properties in

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<sup>1</sup> See <http://www.rockfishvalley.org/blog/> and especially the documents that can be accessed in the following section: “Atlantic Coast Pipeline route destroys RVF resources” at <http://www.rockfishvalley.org/blog/acp-negative-impacts/>.

<sup>2</sup> See <http://preservationvirginia.org/press-room/release/2016-virginias-most-endangered-historic-places>

the 400-acre Horizon Village eco-village, including wetlands and other very environmentally sensitive areas in and around the Village.<sup>3</sup>

On December 4, 2015, presumably in light of the serious concerns with the Proposed Route expressed by FOW and others, OEP requested Dominion to evaluate three alternative routes that would avoid these adverse environmental and economic impacts. Specifically, OEP pursued the prospect of alternate routes to the Proposed Route in Data Requests 156, 157 and 158. In these data requests, OEP directed Dominion to evaluate three alternative routes for the ACP in an approximate 15-mile length of the Blue Ridge Parkway (“BRP”) beginning at Rockfish Gap/ Interstate 64, proceeding to the Reeds Gap area (where the Proposed Route crosses the Parkway), and ending at Love Gap and proceeding to Route 56. OEP’s directive that Dominion evaluate these routes was intended, at least in part, to explore route alternatives or variations that would avoid the adverse impacts on the Wintergreen Resort and nearby area. For example, in Data Request 156, OEP requested that Dominion evaluate an alternate route that “avoids or minimizes impacts on cultural and historic properties, nature trails, waterbodies, the Spruce Creek Tributary Conservation Site, and planned developments (i.e., Wintergreen Resort Expansion and Spruce Creek Resort).”

On December 29, 2015, Friends of Wintergreen filed a Motion for Leave to Answer and Answer (“FOW Motion”) that identified three specific alternative routes, including minor route deviations, which were consistent with the objective of Data Requests 156, 157 and 158 to identify and evaluate alternative routes that would avoid or minimize impacts on various resources and communities, including Wintergreen. FOW’s pleading was intended to inform both Dominion and the Commission that, as identified by its environmental consultants, there in

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<sup>3</sup> See Attachments 1-3.

fact exists alternative routes as contemplated by OEP's data requests that are both technically feasible and less environmentally and economically damaging than ACP's Proposed Route. FOW described these specific alternative routes, provided detailed maps illustrating their precise path, and explained why these alternatives would minimize or avoid adverse impacts on both the environment and the Wintergreen Resort and surrounding area. Consequently, FOW requested that both Dominion and the Commission Staff evaluate these specific alternative routes.

Despite the very serious economic, safety and environmental impacts of the Proposed Route in the Wintergreen area that have been detailed for over six months, the Dominion Response to Data Requests 156, 157 and 158 refused to identify *any* alternate route, including minor route variations, that would eliminate or even reduce the damage to the Wintergreen area. Instead, Dominion's response to the Data Requests has been to identify alternate routes that are unworkable from both a legal and engineering perspective and then to reject them.

While refusing to perform a good faith evaluation of the alternative routes identified by FOW, Dominion has proposed to modify its Proposed Route to address concerns expressed by the United States Forest Service ("USFS"). Dominion has sought to implement a major route alternative for the ACP that avoids certain resources within the Monongahela National Forest ("MNF") and George Washington National Forest ("GWNF") through an amendment to its application filed on March 1, 2016. On May 3, 2016, the Commission issued its supplemental notice of intent to prepare an EIS with a request for comments.

## **II. SUMMARY**

As previously detailed, Friends of Wintergreen identified three alternate routes in the FOW Motion filed on December 29, 2015 that (1) mitigate or eliminate the serious damage

referred to above, (2) are constructible, and (3) are clearly superior to the comparable sections of the Proposed Route. These routes have been developed with specific input from Integral Consulting Inc. (“Integral”), a national environmental consulting firm, and Tide Water Integrity Services, LLC. (“Tide Water”), an engineering consulting firm led by Bryan Melan, P.E., an engineer with 39 years’ experience in pipeline construction.<sup>4</sup>

Despite having over two months to evaluate these alternate routes, Dominion completely ignored them in its March 10, 2016 response to OEP’s data requests. The Dominion response does not reflect a bona fide effort to respond constructively to OEP’s data requests or the concerns raised by Friends of Wintergreen. As discussed below, the alternatives discussed by Dominion in its data responses represent a false choice by proposing infeasible and more environmentally damaging alternatives for the purpose of rejecting them.

While Friends of Wintergreen appreciate OEP’s efforts to request Dominion to evaluate alternative routes that avoid the adverse impacts on the Wintergreen Resort and surrounding communities, it appears that Dominion needs more specific direction than requests to explore alternatives in generally defined areas or that could achieve broadly stated objectives. FOW has proposed, and continues to propose, detailed and specific alternative routes, including a fourth alternative which deviates from the major route alternative proposed by Dominion in its Amended Application. FOW respectfully requests OEP to expressly direct Dominion to evaluate the three specific alternatives described in FOW’s prior Motion, as well as the fourth alternative arising from Dominion’s recent amendment, as discussed further below. If Dominion subsequently raises objections, FOW also requests that OEP direct Dominion to provide a complete list of any objections, including the specific issue for each, location and the impact of

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<sup>4</sup> See Declaration of Bryan Melan, Attachment 11, Paragraphs 2-9.

each on the project. Dominion's objections to route alternatives have been too generalized and lacking the transparency needed for FOW and others to properly evaluate the validity of its objections.

FOW submits that a comprehensive comparison of these alternatives to the newly revised route proposed by Dominion is necessary for the Commission to fulfill its responsibilities under NEPA.<sup>5</sup> The Commission has a statutory responsibility to ensure that all reasonable alternative routes be sufficiently analyzed, evaluated and compared to the route proposed by an applicant in an effort to minimize or avoid adverse environmental impacts.<sup>6</sup> Moreover, the Commission's Certificate Policy Statement encourages applicants to minimize adverse impacts on landowners and surrounding communities and states that projects will not be found in the public interest if unmitigated adverse impacts, including those on landowners and surrounding communities, exceed the project's benefits.<sup>7</sup> While Dominion's proposed amendment to its route may mitigate impacts to the affected national forests at the behest of the USFS, it fails to address the substantial adverse impacts on the Wintergreen area repeatedly described by FOW and other impacted parties.

In addition, Dominion has failed to provide FOW, WPOA and the Resort with complete information about the impact its construction activities from its Proposed Route will have on the

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<sup>5</sup> The alternatives analysis "is 'the heart' of an EIS." *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d 797, 813 (9th Cir. 2005).

<sup>6</sup> NEPA requires that FERC's EIS "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project. 40 C.F.R. § 1502.14(a). *See also Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1122-23 (9th Cir. 2002) *quoting Oregon Environmental Council v. Kunzman*, 614 F.Supp. 657, 659-60 (D. Or.1985) (alternatives that must be considered under NEPA are those that would "avoid or minimize" adverse environmental effects).

<sup>7</sup> *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999).

Resort, WPOA roads and land, Wintergreen residents and guests and others in the Wintergreen area. Dominion has only provided minor, piecemeal and sometimes contradictory information about its planned activities. FOW believes that the impact will be substantially greater and more harmful than Dominion has claimed. FOW requests that FERC require Dominion to respond specifically to the information requests contained in Attachment 13 to this Reply.

### **III. ANALYSIS OF ALTERNATE ROUTES**

#### **A. The Rockfish Gap / Dooms Bremo (“RG/DB”) Route**

In Data Request 157, OEP directed Dominion to “evaluate an alternative route and provide a table comparing the relevant environmental factors that crosses the Appalachian National Scenic Trail and Blue Ridge Parkway near Interstate 64 that also avoids the Lyndhurst Source Water Protection Area.” In the FOW Motion (at 7-11), FOW proposed an alternate route referred to as the Rockfish Gap/Dooms Bremo or RG/DB Route, which is demonstrably superior to the Proposed Route.<sup>8</sup> This route would traverse the following path (see Attachments 4, 5 and 5A for maps of the RG/DB Route).

1. The RG/DB Route would connect to the Proposed Route in the Lyndhurst area at approximately Milepost 148.1. The RG/DB Route would then proceed through sparsely settled areas roughly paralleling the I-64 right-of-way until it reaches Rockfish Gap. After crossing through Rockfish Gap, the Route would continue east between I-64 and Route 250 for

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<sup>8</sup> Because Dominion’s revisions to the Proposed Route do not address the adverse impacts on the Wintergreen area, FOW’s references to the Proposed Route herein apply to both proposed routes, except as to specific references to the Revised Proposed Route.

approximately 7.7 miles until it reaches the Dooms/Bremo electric transmission lines at Exit 107 on I-64.<sup>9</sup>

2. The Dooms/Bremo electric transmission lines are two large arrays of parallel electric transmission lines. The lines and the rights-of-way are owned by Dominion Electric, an affiliate of Dominion. The approximate width of the cleared electric transmission line right-of-way is 200 feet in the east-west direction and 100-150 feet in the north-south direction. The ACP could be collocated within or adjacent to this right-of-way, which would require only a small expansion to this existing right-of-way to accommodate the ACP.

3. From Exit 107 on I-64, FOW's RG/DB Route following the electrical transmission lines would head to the south. The RG/DB Route would proceed for approximately 34.8 miles to Bremo, where it would cross the James River and proceed approximately 24.2 miles to the point where it joins the Proposed Route in the Farmville area at approximately Milepost 227.9.<sup>10</sup>

Based on the evaluation of the experienced environmental consultants retained by FOW, the RG/DB Route is technically feasible and clearly superior to the Proposed Route in a number of respects, including the following:

- While the RG/DB Route is 7.75 miles longer than the Proposed Route, the RG/DB Route increases collocation significantly by locating adjacent to railroads, highways and electric transmission lines. This route option would result in approximately 75.27 miles of land using collocation with this existing

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<sup>9</sup> See Attachment 4 for map from Lyndhurst to Dooms.

<sup>10</sup> See Attachments 5 and 5A for maps from Lyndhurst to Farmville.

infrastructure. In the comparable portion of the Proposed Route from Milepost 148.1 to Milepost 227.9, the ACP appears to have no use of existing rights-of-way. This is a substantial benefit that by itself fully supports the adoption of the RG/DB Route. Dominion's use of colocation on its Proposed Route is one of the lowest levels of colocation in the American pipeline industry. Based on FOW's analysis of all interstate natural gas projects of 40 miles or longer in length approved or planned over the past several years, the average colocation usage across the industry is 50% or more. By adding 75.27 miles of colocation through the RG/DB Route, Dominion's use of existing or adjacent rights-of-way for the mainline pipelines would more than double. While still a level lower than the national average, this increased use of existing or adjacent right-of-ways would further reduce environmental fragmentation in these sensitive areas.

- The utilization of a large right-of-way owned by one of ACP's affiliates should facilitate land acquisition and construction of access roads.
- The RG/DB Route crosses 35.60 miles of forested land, while the Proposed Route crosses 49.73 miles of forested land. This route minimizes the use of USFS land in Virginia, a concern stated by that agency in communications with FERC and Dominion.
- The RG/DB Route also makes better use of agricultural land, crossing 18.88 miles of such land as compared to 8.30 miles for the Proposed Route.

Despite the fact that the RG/DB Route offers clear advantages over the Proposed Route and eliminates all of the adverse consequences to the Wintergreen area of the Proposed Route,

Dominion provided no response to the detailed analysis of the RG/DB Route that was contained in the FOW Motion.

The only response offered by Dominion in its response to Data Request 157 is contained in the following footnote to that response:

Atlantic investigated a potential route alternative which would cross the BRP and AT immediately adjacent to I-64 at Interchange 19. Atlantic's assessment concluded that a crossing immediately adjacent to the highway at the interchange is not feasible due to a combination of steep terrain and various land use constraints at Rockfish Gap, including a highway interchange and adjacent developed lands, a highway intersection, and an abandoned railroad tunnel.<sup>11</sup>

Dominion's conclusory rejection of the Rockfish Gap/I-64 location as a crossing point for the ACP is fully refuted by the detailed analysis of FOW's pipeline construction consultant, Tide Water, which analyzed this component of the RG/DB route and concluded that this route segment is feasible and would be environmentally preferable to the Proposed Route.<sup>12</sup> As FOW stated in its earlier Motion (at 9-10):

Tide Water completed a detailed evaluation of the constructability of the RG/DB Route from the point at which this route departs from the Proposed Route in the Lyndhurst area (Milepost 148.1) to the point where this route reaches the Dooms/Bremo electric transmission lines at Exit 107 on I-64. After reviewing a number of factors, including slope steepness, ridgeline crossings, width of available land for construction, availability of railroad rights-of-way, and location of residences and other structures, Tide Water concluded that this section of the RG/DB Route is constructible.<sup>13</sup>

By relegating its "analysis" to a footnote, Dominion noticeably avoided any constructive evaluation or dialogue with FERC and FOW regarding the RG/DB Route. More importantly,

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<sup>11</sup> ACP response to FERC December 4, 2015 Data Request No. 157 at p. 50, n.2, filed on March 10, 2016.

<sup>12</sup> Declaration of Bryan Melan, Attachment 11, Paragraph 5.

<sup>13</sup> *See id.*

Dominion's complete failure to analyze the significant benefits of the 75.27-mile-long RG/DB Route while commenting only on one point of the Route at Rockfish Gap, will prevent FERC from fulfilling its obligation under NEPA to take a "hard look" at this alternative.<sup>14</sup> FOW requests that FERC direct Dominion to provide a comprehensive and viable evaluation of the RG/DB Route.

Dominion's response to Data Request 157 needs little analysis. The alternate route chosen, evaluated and then rejected by Dominion unnecessarily crosses I-64 twice and then heads south of Rockfish Gap until it hits the Appalachian Trail ("AT") on National Park Service ("NPS") land. On its face, this alternate route is infeasible because, as Dominion acknowledges, NPS lacks the authority to grant a right-of-way across NSP-administered lands, with the exception of the BRP. In addition, Dominion explains that an HDD crossing of the AT and BRP along this alternative route is infeasible due to land use and terrain constraints. Dominion's alternative route proposal to FERC is a false choice -- an alternative route that is impossible to utilize and consequently deemed undesirable when compared to the Proposed Route. Again, FOW requests that FERC require Dominion to objectively and fully evaluate the RG/DB Route.

**B. The Love Gap/Route 56 Route.**

In Data Request 158, OEP directed Dominion to "evaluate an alternative route and provide a table comparing the relevant environmental factors that crosses the Appalachian National Scenic Trail and Blue Ridge Parkway along Highway 56." In the FOW Motion, Friends of Wintergreen presented a detailed route that fully responded to this Data Request – the

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<sup>14</sup> NEPA requires federal agencies to take a "hard look" at the environmental consequences of their actions before taking action. *Kleppe v. Sierra Club*, 427 U.S. 390, 410, n. 21 (1976); 40 C.F.R. § 1500.1(a).

Love Gap/Rte. 56 Route.<sup>15</sup> In its response to this data request, Dominion completely ignored the Love Gap/Rte. 56 Route. In this instance, Dominion did not even include a descriptive footnote and ignored the detailed analysis provided by FOW.

Dominion's response to Data Request 158 needs little analysis. On its face, the alternate route that Dominion has offered to OEP is seriously deficient. The alternate route is unnecessarily long at 40.8 miles, twists and turns through 13.2 miles of land with greater than a 30% slope, and requires a number of substantial route adjustments to avoid Designated Wilderness Areas, various Conservation Easements and other sensitive land. The route is so deficient that it does not deserve serious consideration. Instead, FOW requests that FERC require Dominion to fully evaluate and respond to the Love Gap/Route 56 Route.

### **C. The GWNF 6/Route 56 Route**

The revised route proposed by Dominion in its Amended Application – referred to as the GWNF 6 Route (“Revised Proposed Route”) - avoids Cheat Mountain, Back Allegheny Mountain, Shenandoah Mountain, and other sensitive public and resource areas within the Monongahela National Forest and the George Washington National Forest. More specifically, the Revised Proposed Route avoids occupied and suitable habitat for the Cheat Mountain Salamander, West Virginia Northern Flying Squirrel and Cow Knob Salamander in those National Forests.

After bypassing these USFS sensitive areas, however, the GWNF 6 Route inexplicably and sharply turns northeast and traverses 20 miles back to Augusta County, where it re-connects

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<sup>15</sup> See Motion for Leave to Answer and Answer of Friends of Wintergreen, Inc. at pp. 11-13 and attachments 5 and 6, filed on December 29, 2015. Also see Attachment 6 herein.

to the Proposed Route. There is no justification for creating the adverse impacts that would ensue from this circuitous routing. The GWNF 6 Route creates an excellent opportunity to avoid all the damage identified by FOW and other Intervenors, significantly shorten the route length, and employ more existing rights-of-way, by utilizing Route 56 to connect back to the GWNF 6 newly-proposed Route. FOW's proposed alternative route is referred to as the GWNF 6/Rte. 56 Alternative. As shown on Attachment 7, there is no justification for deviating substantially from a direct southeasterly route back to the Proposed Route and instead heading in the opposite northeasterly direction for 20 miles before it resumes its southeasterly path. The GWNF 6/Rte. 56 Alternative achieves the same objectives as the Revised Proposed Route by avoiding sensitive areas in the MNF and GWNF, but then continues in the same southeasterly direction until it intersects with the Proposed Route at Milepost 177.6 of the Proposed Route. FOW's alternative avoids all the adverse impacts to sensitive public and resource areas within the MNF and GWNF, traverses less land by taking a more direct route back to the Proposed Route, and avoids all the impacts to Wintergreen and surrounding communities.

The GWNF 6/Rte. 56 Alternative is superior to the comparable section of the Revised Proposed Route in virtually all the key measures, as shown in Table 1, shown on Attachment 8, which makes the GWNF 6/Rte. 56 Alternative clearly preferable to the Proposed Route. These measures include:

- The GWNF 6/Rte. 56 Alternative is 10.78 miles shorter than Dominion's GWNF 6 Route.

- The GWNF 6/Rte. 56 Alternative has 20.67 miles of colocation (“Adjacent to existing linear corridor facilities (total”), while Dominion’s GWNF 6 Route has virtually no colocation (0.75 miles).
- The GWNF 6/Rte. 56 Alternative crosses 3 Interstate or State/Commonwealth highways, while Dominion’s GWNF 6 Route crosses 6 highways.
- The GWNF 6/Rte. 56 Alternative affects 45 parcels, while Dominion’s GWNF 6 Route affects 53 parcels.
- The GWNF 6/Rte. 56 Alternative affects 141 residences within 660 feet of the pipeline centerline, while Dominion’s GWNF 6 Route affects 366 residences.
- Total wetlands crossed (all four categories) by the GWNF 6/Rte. 56 Alternative are 0.17 miles, The GWNF 6 Route crosses nearly four times as many wetlands – 0.60 miles.
- The GWNF 6/Rte. 56 Alternative crosses 65 intermittent streams/rivers, compared to 87 for Dominion’s GWNF 6 Route.
- The GWNF 6/Rte. 56 Alternative crosses 16.70 miles of agricultural land, while Dominion’s GWNF 6 Route crosses 29.41 miles.
- The GWNF 6/Rte. 56 Alternative has 1 National Register of Historic Places structure within 660 feet, while Dominion’s GWNF 6 Route has 3 such structures.

- The GWNF 6/Rte. 56 Alternative crosses 3.69 miles of Protected Federal Lands, while Dominion’s GWNF 6 Route crosses more than double this length, 8.38 miles.
- The GWNF 6/Rte. 56 Alternative crosses no Protected Private Conservation Lands, while Dominion’s GWNF 6 Route crosses 0.12 miles.
- The GWNF 6/Rte. 56 Alternative crosses 19.48 miles of U.S. Geological Survey karst topography, while Dominion’s GWNF 6 Route crosses 25.19 miles.

The comparable section of the Revised Proposed Route offers a minimal number of advantages over the GWNF 6/Rte. 56 Alternative with respect to substantially fewer metrics, as identified below:

- Dominion’s GWNF 6 Route crosses no Protected State Lands, while the GWNF 6/Rte. 56 Alternative crosses 6.99 miles.
- Dominion’s GWNF 6 Route crosses 6.11 miles of shallow bedrock, while the GWNF 6/Rte. 56 Alternative crosses 13.79 miles.
- Dominion’s GWNF 6 Route crosses 32.06 miles of land that is Highly Erodible by Wind, while the GWNF 6/Rte. 56 Alternative crosses 38.74 miles.
- Dominion’s GWNF 6 Route crosses 8.44 miles of land with “steep slope crossed (greater than 30 percent)” while the GWNF 6/Rte. 56 Alternative crosses 23.05 miles.

- Dominion’s GWNF 6 Route crosses 4.07 miles of conservation easements, while the GWNF 6/Rte. 56 Alternative crosses 6.17 miles.
- Dominion’s GWNF 6 Route crosses a total of 12.51 miles of VDCR easements and lands, while the GWNF 6/Rte. 56 Alternative crosses a total of 17.87 miles.

The remaining metrics are comparable for the GWNF 6/Rte. 56 Alternative and Dominion’s GWNF 6 Route.

Since the GWNF 6/Rte. 56 Alternative is both substantially shorter and superior to Dominion’s GWNF 6 Route with respect to most metrics, FOW requests that FERC require Dominion to fully and objectively evaluate and respond to the GWNF 6/Rte. 56 Alternative.

#### **D. The 664 South Route**

In Data Request 156, OEP directed Dominion to “evaluate a route variation and provide a table comparing the relevant environmental factors from approximate AP-1 MPs 159 to 165 that maximizes the use of pasture and agricultural land in the Rockfish Valley, minimizes ridgetop and forest impacts, and avoids or minimizes impacts on cultural and historic properties, nature trails, waterbodies, the Spruce Creek Tributary Conservation Site, and planned developments (i.e., Wintergreen Resort Expansion and Spruce Creek Resort).” In so doing, OEP directed Dominion to focus on the approximately 7.69 miles of the Proposed Route that create all of the damage detailed above and to identify an alternate route in this area that would minimize or eliminate this damage.

In its response to this data request, Dominion has failed to address the concerns identified by OEP. All of the damage to Wintergreen Resort and the residents and guests of the Resort

arises because the Proposed Route places the ACP directly across from the entrance to Wintergreen Resort (approximately MP 158.8) and then follows a 2,100-foot path with a minimum 125-foot clear cut up the side of a very steep mountain, Piney Mountain (approximately MP 159.5), crossing Wintergreen land. It is this portion of the Proposed Route that OEP refers to when it references the Wintergreen Resort Expansion and other negative impacts referred to in Data Request 156.

Incredibly, Dominion's response to Data Request 156 completely ignores this section of the Proposed Route and offers no solutions to the serious damage that the ACP will cause to Wintergreen Resort and its residents and guests. Instead, Dominion uses the same technique as it used with respect to Data Request 157 – in a footnote, it simply states that “beginning the route variation closer to MP 159 (rather than 160.9) and ending it closer to MP 165 (rather than 163.9) would not materially address the issues identified by FERC in this Question (e.g., maximizing the use of pasture and agricultural land and minimizing forest impacts).”<sup>16</sup> In other words, Dominion lists in a footnote only one aspect of the request relating to the type of land that is impacted, while ignoring all the other elements of the request. Dominion has not responded at all to the issues raised by FOW, WPOA and the Resort about disruption of business to Virginia's largest resort community, potential loss of property value or current and long-term risk in case of an accident during construction or after.

In sharp contrast, in the FOW Motion (at 13-14), FOW identified an alternate route that responds directly and fully to Data Request 156. FOW has now completed a detailed route – the 664 South Route – that minimizes, and in many instances eliminates, the adverse impacts of the

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<sup>16</sup> ACP response to FERC December 4, 2015 Data Request No. 157 at p. 42, n.1, filed on March 10, 2016.

Proposed Route and that is superior to the Proposed Route on key metrics.<sup>17</sup> The advantages of the Route 664 South Route are derived largely by shifting the exit point for the ACP from north of Route 664, directly across from the entrance to Wintergreen Resort, to south of Route 664 and then following a path that stays south of Route 664 and utilizes the maximum amount of pasture and agricultural land until the path crosses Route 151 and returns to a mountainous area that consists of very large parcels and few residences. The alternate route returns to the Proposed Route at approximately Milepost 165, which is consistent with OEP's Data Request. Table 2, shown on Attachment 10, provides comparisons of the key metrics for the 664 South Route and the comparable section of the Proposed Route, primarily using the metrics that Dominion identified when it responded to the OEP Data Request. FOW has prepared the metrics based on the longest section of the Proposed Route, the 5.24-mile section from the Reed's Gap area to Route 151 ("West of 151"), and then the next section from Route 151 to Milepost 165 ("East of 151"). These sections have different routing considerations. When the Proposed Route crosses Route 151, a decision has to be made whether to turn to the northeast, which crosses a number of parcels of pasture land, or to continue to the east, entering a mountainous area where the impact on private property is less. Based on FOW's knowledge of the local area, FOW's judgment is that the damage is less if the pipeline route proceeds east through the mountainous area. FOW requests that FERC require Dominion to fully evaluate the 664 South Route.

The 664 South Route is superior to the comparable section of the Proposed Route in many respects, including the following:

- The Wintergreen Resort Expansion will be allowed to proceed.

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<sup>17</sup> See Attachment 9. See also Declaration of Bryan Melan, Attachment 11, Paragraph 6.

- The development of the Spruce Creek Resort and Spa will be allowed to proceed.
- The adverse decline in Wintergreen Resort’s revenue of up to 20% per year will be eliminated. In maps submitted with ACP’s April 15, 2016 filing to FERC, Dominion specifies that it will use several private roads at Wintergreen - Wintergreen Drive, Fortunes Ridge Drive and Fortune’s Point Lane - as “access roads” for its massive construction work on their Proposed Route.<sup>18</sup> As Wintergreen Drive is the only road in and out of the Resort, the disruption to the Resort would be substantially greater than previously believed and the drop in annual revenue likely would exceed 20% if the Proposed Route is approved.
- The adverse impact on the tourism business generated by many businesses on Route 151 will be reduced or eliminated. For example, the Proposed Route goes directly past and impacts the views of customers of Bold Rock Cidery, which is one of the most successful cideries in the country.
- Serious environmental damage to the Wintergreen area will be avoided. The present Proposed Route will result in the loss of protected forested space and ancient Mountain Laurel forest voluntarily set aside in perpetuity by Wintergreen property owners and entrusted to the stewardship of WPOA. FOW’s

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<sup>18</sup> ACP response to FERC December 4, 2015, December 24, 2015, and January 5, 2016 data requests filed on April 15, 2016. *See also* Attachment 12.

- (1) ACP construction alignment sheets (42” AP-1 Pipeline) at pp. 198-205 of 341.
- (2) ACP resource report 1, appendix 1A (Topographic Route Maps, Nelson County, Va.) at pp. 50-51 of 169.
- (3) ACP resource report 1, appendix 1B (Aerial Route Maps, Nelson County, Va.) at pp. 50-51 of 169.

calculations indicate that the 125-foot clear cut will result in the destruction of at least 7,000 trees from Reed's Gap to Route 151.

- Significant construction and ongoing maintenance issues will be avoided. In particular, as indicated above, the Proposed Route includes a 2,100-foot path from the entrance to Wintergreen and then up the extreme slope of Piney Mountain. This creates significant construction challenges and risks.
  - Based on detailed analysis by Tide Water, utilizing Dominion's Alignment Sheets, of the 2,100 feet of the construction path up the side of Piney Mountain, approximately 1,679 feet is at a slope in excess of 40%. Other sections of this path show a slope of over 50% and as much as 64%. An additional analysis of the slope based on USGS topography shows portions of the slope as steep as 66%, 69%, 78% and 85%.<sup>19</sup>
  - According to Dominion's updated Resource Report 7, which was filed on April 15, 2016, with topsoil no deeper than 12 inches, the right of way clearing and grading for the pipeline will remove a significant amount of topsoil during the laying of the pipe.<sup>20</sup> In addition, this resource report identifies that the route up the steep side of Piney Mountain is highly susceptible to water erosion.

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<sup>19</sup> See Declaration of Bryan Melan, Attachment 11, Paragraph 6.

<sup>20</sup> ACP response to FERC December 4, 2015, December 24, 2015, and January 5, 2016 data requests filed on April 15, 2016; ACP resource report 7 (Soils – Updated).

- As explained by Tidewater, when the above factors are taken into account, the trenching and laying of pipeline up Piney Mountain at very steep grades increases the risk of rock and ground slides.<sup>21</sup> Risks from these slides would be exacerbated by frequent major storm conditions in this section of the Blue Ridge Mountains that is highly susceptible to water erosion. Such risks would continue long after construction was completed. These rock and ground slides would impact the South Fork of the Rockfish River, a tributary of the Rockfish River, which is a Virginia Scenic River. In addition, a rock slide could potentially bury Route 664 and any unfortunate travelers at the time of the slide. In addition, the construction process risks serious water run-off and mountain-side deterioration issues leading to the headwaters of the Rockfish River, the James River and eventually the Chesapeake Bay. Any affected waterways on the 664 South Route are major tributaries into the James River.<sup>22</sup> For all of these reasons, FERC's regulations advise that steep slopes should be avoided where practical.<sup>23</sup> FOW has offered a practical way to avoid these dangerous slopes.

- The very serious safety issues resulting from the fact that there is only one entrance/exit to Wintergreen Resort will be substantially mitigated by the adoption of the 664 South Route. As previously indicated, there frequently are

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<sup>21</sup> See Declaration of Bryan Melan, Attachment 11, Paragraphs 6-7.

<sup>22</sup> See *id* at Paragraph 7.

<sup>23</sup> 18 C.F.R. § 380.15(e)(3).

more than 10,000 residents and guests at Wintergreen Resort. The blast radius, or High Consequence Area, for the ACP is over 1,100 feet. If there is an explosion of the pipeline on the Proposed Route directly at the entrance/exit to the Resort, the potential for a catastrophic event as the resulting fire races up the slope is significant. The 664 South Route moves the pipeline to 1,700 feet from the entrance/exit to the Resort, which provides a substantially greater buffer if there is an incident. The 664 South Route also moves the pipeline to the south of Route 664, which gives emergency fire and rescue responders substantially more road access so they can better contain a fire before it heads up the slope to the Resort. Dominion's response that it will deal with a crisis response plan at some point in the future is a wholly inadequate approach when dealing with the safety of 3,500 property owners and potentially 10,000 residents and Resort guests at any point in time.

- By moving the exit point for the pipeline to the south of Route 664, the pipeline is kept 670 and 775 feet from the nearest residences at the exit point and it keeps the pipeline 1,000 feet from the Bed and Breakfast ("B&B") that is owned by Will and Lilia Fenton. The Proposed Route places the pipeline immediately adjacent to the Fenton's B&B and would seriously damage their business.
- The damage to wetlands and other environmentally sensitive areas in and around the 40-property 400-acre eco-village of Horizons Village will be eliminated.<sup>24</sup>

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<sup>24</sup> See Attachments 1-3.

- The damage to numerous cultural and historical structures and sites identified by the Rockfish Valley Foundation<sup>25</sup> will be avoided.

As indicated above, Table 2 shown on Attachment 10 provides comparisons of the key metrics for the 664 South Route and the comparable section of the Proposed Route, primarily using the parameters that Dominion identified when it responded to the OEP Data Request. With a small increase in the length of the pipeline of 0.9 miles (7.69 miles for the Proposed Route v. 8.59 miles for the 664 South Route), the 664 South Route accomplishes the objectives set forth by OEP in Data Request 156 better than the Proposed Route:

- The amount of agricultural and pasture land from Reeds Gap to Route 151 will increase by 0.51 miles by utilizing the 664 South Route. For the West of 151 segment, the 664 South Route crosses 0.69 miles of agricultural and pasture land, while the Proposed Route crosses almost no such land, 0.18 miles.
- The amount of forested land from Reeds Gap to Route 151 will decrease by 0.28 miles by utilizing the 664 South Route. For the West of 151 segment, the 664 South Route crosses 4.68 miles of forested land, while the Proposed Route crosses 4.96 miles of forested land.
- The number of residences within the FERC-designated safety concern area of 660 feet will be reduced from 33 on the Proposed Route to 22 on the West of 151 segment of the 664 South Route, which is a substantial improvement. In assessing the risk posed by a natural gas pipeline, Federal regulations, 49 CFR Part 192.5, provide the criteria that all houses within 200 meters (660 feet) of the

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<sup>25</sup> See notes 1 and 2, *supra*.

pipe centerline are to be considered in evaluating the “class location unit” under minimum Federal Safety Standards. The same criteria are also provided in 49 CFR Part 192.903 in defining a “High Consequence Area.” FOW has, therefore, used this objective standard in evaluating the number of houses on the Proposed Route and the 664 South Route that are located in the risk corridor. Dominion’s standard of whether a house is within 50 feet or 125 feet of the pipe centerline has no support in the Federal Safety regulations. Dominion’s use of this standard does, however, allow it to inaccurately suggest that there is no safety impact at all on houses on the Proposed Route.

- The Proposed Route is within 660 feet of 1 National Register of Historic Places, while the 664 South Route avoids all National Register of Historic Places.
- The 664 South Route crosses 4 Other State/Commonwealth or Local Roads, while the Proposed Route crosses 7 such roads.
- The 664 South Route crosses 0.07 mile of Protected Private Conservation Lands, while the Proposed Route crosses 0.12 miles of such land.
- The 664 South Route crosses no Shallow Bedrock, while the Proposed Route crosses 0.23 miles.

All other metrics in Table 2 of Attachment 10 are comparable for the 664 South Route and the Proposed Route except that there are a few less significant measures where the 664 South Route is less desirable than the Proposed Route, with the differences generally being small:

- The 664 South Route crosses 0.20 miles of Protected Federal Lands, while the Proposed Route crosses 0.14 miles of such land.
- The length of Steep Slope Crossed (Greater than 30 Percent) for the West of 151 segment of the 664 South Route is 2.27 miles, while the Proposed Route crosses 2.00 miles.
- The length of Moderate to High Landslide Incidence/Susceptibility area crossed by the West of 151 segment of the 664 South Route is 5.64 miles, while the Proposed Route crosses 5.25 miles.
- The length of VDCR Conservation Lands crossed by the 664 South Route is 0.27 miles, while the Proposed Route crosses 0.23 miles.

On April 15, 2015, representatives of Dominion attended a Board of Directors meeting of the Wintergreen Property Owners Association, and Jonathan Ansell, the Chairman of the Board of Friends of Wintergreen, discussed the 664 South Route with Gregory Park, the Supervisor of the ACP Gas Transmission Construction Project for Dominion. Mr. Park's primary objection to the 664 South Route was that there could be "side slope" construction issues. FOW's engineer, Tide Water, has evaluated this claim and concluded that any side slope issues with the 664 South Route are solvable:<sup>26</sup>

While side slopes exist along the proposed Route 664 South alignment, these issues are manageable. The INGAA Gas Pipeline Construction guide devotes an entire Chapter (4.6) to side slope construction. Generally, according to published literature, side slopes are manageable with conventional equipment up to 60% slope. A medium-sized bulldozer, such as a Caterpillar D6, performs at its

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<sup>26</sup> See Declaration of Bryan Melan, Attachment 11, Paragraph 8.

optimum level up to a side slope of 40%. At steeper slopes, hydraulic excavators, a slower but effective process, must be used.

We performed a detailed side slope analysis of the proposed 664 South Route alignment and evaluated over 77,000 linear feet of side slope crossing the pipeline route. The result was that 15 isolated individual instances of slopes exceeding 40% were found along the Route. These locations total about 1,000 feet in aggregate of the 77,000 linear feet evaluated. No side slopes exceed 60%.<sup>27</sup>

Dominion's response to Data Request 156 is seriously defective. As indicated above, Dominion's response ignores OEP's directive to evaluate an alternate route that avoids or minimizes impacts to the Wintergreen Resort, its residents and guests. Dominion proceeds to evaluate alternate routes further down the Proposed Route, but it then rejects the alternate routes that could avoid or minimize the other significant harms that are referred to in Data Request 156. Dominion thus does nothing to eliminate the damage caused by the Proposed Route with one exception – Dominion claims that it eliminates the damage to certain wetlands near Horizons Village by adopting the Horizons Village 2 Route Adjustment. This claim drew an immediate response from Friends of Horizon, which sharply disagreed that Dominion's route adjustment resolves any wetlands issue.<sup>28</sup>

Given the environmental destruction and risks associated with the Proposed Route, its unproven boring process, steep slope construction issues, disruption of business to Virginia's largest resort, and the long-term safety and value risks it poses to the community, there can be no doubt that the 664 South Route is preferable to the Proposed Route. FOW requests that FERC require Dominion to fully evaluate the 664 South Route.

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<sup>27</sup> *See id.*

<sup>28</sup> *See* Letter dated March 14, 2016, filed by Horizons Village Property Owners Association filed on March 15, 2016), attached hereto as Attachment 3.

#### **IV. DAMAGE TO WINTERGREEN AREA PROPERTY**

FOW has demonstrated herein that there are several alternative routes that are demonstrably and significantly superior to Dominion's Proposed Route. FOW strongly urges that FERC instruct Dominion to adopt one of these alternatives, or others that may be devised, that eliminate the adverse consequences also identified.

With respect to the Proposed Route, though, Dominion has failed to provide FOW, WPOA and the Resort with complete information about the impact that its construction activities will have on the Resort, WPOA roads and land, the Wintergreen residents and guests, and other Wintergreen area property owners. The information Dominion has provided verbally or in writing has been limited, fragmented and often contradictory about its planned activities. Based on an assessment of the impact of previously constructed pipelines and a close review of Dominion's FERC filings, FOW believes that the impact will be substantially greater, and more harmful, than Dominion has suggested. To better understand these implications FOW requests that FERC require Dominion to respond specifically and forthrightly to the information requests, some of which are listed in Attachment 13, and to clearly and fully describe and document the entire construction process in the Wintergreen area and how long this process will take.

The following are just two examples that illustrate the incomplete, inaccurate or inconsistent information provided by Dominion in recent meetings with the Board of Directors of WPOA:

- When asked whether Dominion intended to use Wintergreen's private roads in its construction activities, Dominion responded to WPOA's Board of Directors at its meeting on April 15 that it had made no decision. The company's filing to FERC,

submitted on the very same day, includes map showing Dominion's plans to use both Wintergreen Drive and Fortune's Ridge Drive as access roads.<sup>29</sup>

- Dominion stated that the "extra work space" directly across from the entrance/exit to Wintergreen Resort (the "WTG Work Space") will be used for approximately two weeks to drill two tunnels under Route 664, and any other activities will be very minor. However, in a filing with FERC<sup>30</sup> on Dominion provided substantially different information, stating that, solely with respect to its HDD drilling at the WTG Work Space: "The planned duration of the HDD process is 12 to 14 months, but may vary depending on the subsurface materials encountered."

FOW believes that the information Dominion has provided regarding the scope and damaging effects of its construction activities in the Wintergreen area is inaccurate,<sup>31</sup> incomplete or contradictory to that contained in its filings to FERC. Accordingly, FOW asks that FERC require Dominion to respond in a timely, transparent, and detailed manner to these and other questions put forth by our community and landowners.<sup>32</sup>

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<sup>29</sup> See Attachment 12.

<sup>30</sup> ACP response to FERC December 4, 2015 Data Request No. 103a, attachment 1 (Minutes from a National Park Service Meeting on January 11, 2016) at p. Q103a-15, filed on January 29, 2016.

<sup>31</sup> See Declaration of Bryan Melan, Attachment 11, Paragraph 9.

<sup>32</sup> See Attachment 13.

## V. CONCLUSION

Wherefore, Friends of Wintergreen respectfully requests FERC to:

1. Expressly direct Dominion to fully evaluate each of the four specific route alternatives or deviations described above, and either adopt one of these alternatives or explain in detail why they should not be adopted.
2. Direct Dominion to answer FOW's questions listed in Attachment 13 concerning impacts from construction of the ACP.
3. Unless Dominion proposes a route alternative that avoids the adverse impacts to Wintergreen and surrounding areas, such as the alternatives proposed by FOW herein, condition approval of ACP's application in the above-captioned proceeding with a requirement that the route for the ACP be moved from the Revised Proposed Route near Reed's Gap to one of the route alternatives or deviations identified above, or to some other alternative route that alleviates the serious negative consequences to Wintergreen and the surrounding area of the Revised Proposed Route.

Friends of Wintergreen reserves the right to respond to any supplemental responses by Dominion to further OEP Information Requests, to propose new alternatives, or to respond to new alternatives proposed by ACP or other parties in the proceeding.

Respectfully submitted,

*Howard L. Nelson*

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Dated: May 13, 2016

# **ATTACHMENT 1**



## FRIENDS OF HORIZONS

96 OLD TURTLE PLACE  
NELLYSFORD, VIRGINIA 22958-3074

April 6, 2015

Secretary Kimberly Bose  
Federal Energy Regulatory Commission  
888 First Street, NE Room 1A  
Washington, DC 20426

### **Re: Impact Statement for the Atlantic Coast Pipeline, Docket No. PF15-6-000**

Dear Secretary Bose:

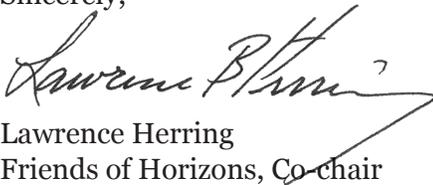
We live in Nelson County, Virginia, where the Atlantic Coast Pipeline (ACP), LLC, is proposing to bury a 42-inch natural gas transmission pipeline to move natural gas from its hydraulic fracturing (“fracking”) operation in West Virginia to the east coast of Virginia and into North Carolina (Docket No. PF15-6-000). The ACP plans do not include gas distribution benefits for our area. At least two alternate routes are being proposed that will cross the Blue Ridge Mountains and continue through Nelson County.

One of the proposed alternate routes, the Appalachian Trail South Alternate Route, passes through our 400-acre subdivision, Horizons Village. Our subdivision is similar to other areas along the eastern slopes of our Blue Ridge Mountains in Nelson County—clear mountain streams, areas of climax stage forests, steep, rocky mountain slopes, and an amazing collection of wildlife. Nelson County includes some of the most beautiful sections of the Blue Ridge Mountains, the George Washington National Forest, and the Rockfish Valley. Caring for the land, the forests, watersheds, and the wildlife is a priority to all of us in Nelson County.

Horizons Village property owners, working in conjunction with independent experts familiar with our area, conducted an assessment of the impacts that the installation and operation of a natural gas pipeline would have on Horizons Village. Enclosed, please find our initial assessment concerning the environmental, safety and economic impacts of installing a 42-inch pressurized gas line in this sensitive ecosystem along the Blue Ridge Mountains. We hope that the findings in our assessment will inform the FERC’s Environmental Impact Statement for this project, and will serve as an example for the types of impacts shared throughout communities in Nelson County.

On behalf of all of my neighbors at Horizons Village, Nelson County, Virginia, we thank you for taking the time to consider our concerns. Please contact me if I can provide more details about any of this information.

Sincerely,



Lawrence Herring  
Friends of Horizons, Co-chair

friends.horizons@gmail.com  
friendsofhorizons.org

# **ATTACHMENT 2**

# THE APPALACHIAN TRAIL SOUTH ALTERNATE ROUTE

## *IMPACT ON HORIZONS VILLAGE*



**Atlantic Coast Pipeline Impact Assessment**  
Prepared for the Federal Energy Regulatory Commission

**Docket Reference: PF15-6**

Prepared by Friends of Horizons  
March 26, 2015  
[friends.horizons@gmail.com](mailto:friends.horizons@gmail.com)  
[friendsofhorizons.org](http://friendsofhorizons.org)

FRIENDS OF  
HORIZONS



## EXECUTIVE SUMMARY

**H**orizons Village is a 400-acre neighborhood located in Nelson County, Virginia, and the George Washington National Forest proclamation boundary. The neighborhood comprises 40 lots, many of which are occupied by full-time residents, and more than 100 acres of common land subject to a conservation easement in perpetuity. Horizons Village's entire existence is predicated on ecological and environmental conservationism.

On February 22, 2015, residents of Horizons Village learned that one of the alternate proposed Atlantic Coast Pipeline routes—the Appalachian Trail South Alternate Route—runs directly through seven private lots and bisects 65 acres of common land in the neighborhood. (See Appendix A for a map showing the location of Horizons Village along the Alternate Survey Corridor.)

Approval of the Appalachian Trail South Alternate Route would trigger irreparable hazards and damages for those who own lots and live in Horizons Village via three primary areas of impact:

- 1. SAFETY: Construction and operation of the pipeline in Horizons Village would put residents' personal safety and property at risk.** The Appalachian Trail South Alternate Route would disturb at least five drainage streams, placing nearly every lot at risk for severe flooding, erosion and landslides, and other safety hazards. The Virginia Department of Forestry rates Horizons Village between high and extreme risk for wildfires. A highly combustible natural gas pipeline would only increase this risk.
- 2. ECONOMIC: Construction and operation of the pipeline are in direct opposition to purpose of Horizons Village—environmental and ecological conservation—and would undermine the identity of the neighborhood and thereby threaten its economic viability.** The pipeline would dissolve the neighborhood's identity as an environmentally sensitive subdivision, and the Appalachian Trail South Alternate Route has already taken an economic toll on the community.
- 3. ENVIRONMENTAL: Horizons Village is a carefully conserved ecosystem of critical wildlife habitats, fragile wetlands, and important historical and cultural artifacts that would be put in grave danger if the Appalachian Trail South Alternate Route were approved.** The Appalachian Trail South Alternate Route would fragment the forests, wetlands, and other terrain in Horizons Village that are home to a wide diversity of flora and fauna, some of which are rare and protected.

Horizons Village is not unlike other communities in Nelson County. It shares the same steep slopes and the same rocky terrain. It has the same forests and the same wildlife habitats. It relies on the same groundwater resources. It shares the same risk of wildfires, flooding, and erosion. And it hosts similar centuries-old historical and cultural artifacts.



**If the Atlantic Coast Pipeline were approved, it would immediately and irreversibly jeopardize the safety and well being of residents of not only Horizons Village but many other communities across Nelson County and surrounding areas.**

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# IMPACT ON SAFETY

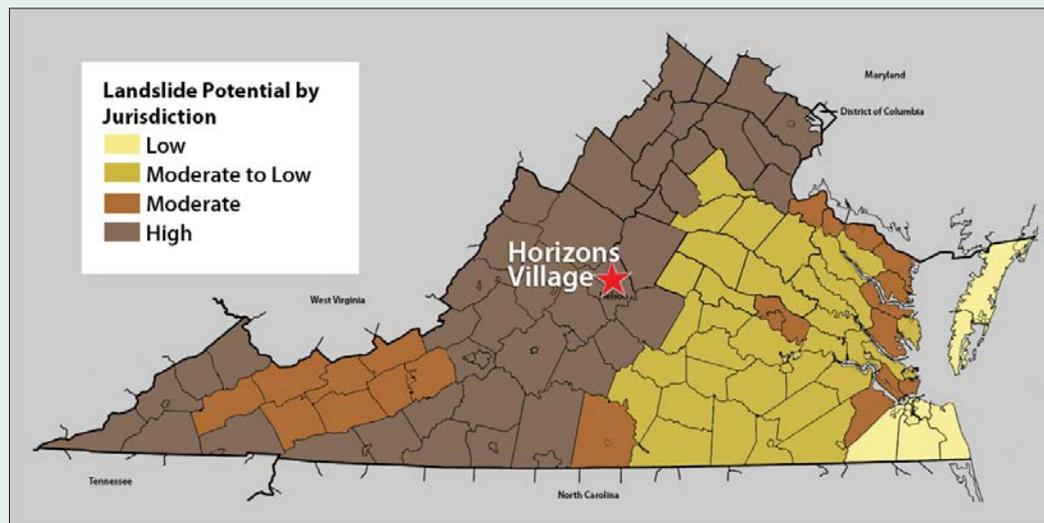
## Construction and operation of the pipeline in Horizons Village would put residents' personal safety and property at risk.

The Appalachian Trail South Alternate Route would cut across and clear-cut nearly 13 acres of forested land within the confines Horizons Village.<sup>1</sup> The elevation along the proposed pipeline route drops dramatically, plunging from 1,500 feet to less than 900 feet, with some grades being as steep as 58 degrees. Construction and operation of a pipeline along this route could endanger residents, personal property, roads, and water supplies through such hazards as landslides, flooding, erosion and sedimentation, endangering groundwater resources and wells, wildfires, and adverse effects on emergency management.

## LANDSLIDES

Like most of Nelson County, Horizons Village is located on steep slopes of highly fractured bedrock that are covered with a shallow layer of topsoil. The Virginia Department of Mines, Minerals, and Energy (DMME) states that these exact conditions lead to an increased frequency of landslides: specifically, rockfalls, rockslides, earthslides, and creep (the slow, continuous, imperceptible downslope movement of soil and rock particles).<sup>2</sup> The DMME therefore characterizes the likelihood of landslides in Nelson County as “high,” as indicated on the map below.<sup>3</sup>

*This map shows the landslide potential as assessed by the Virginia DMME. Horizons Village, along with all of Nelson County, is considered at “high” risk of landslides.*



The DMME also states that the risk of landslides is elevated in areas that have experienced previous landslides and in areas with “certain man-made changes to the land, such as slope modifications or drainage alteration.”<sup>4</sup> The clear-cutting, excavation, and blasting likely to be involved in digging a trench 8–12 feet deep are exactly the kind of manmade changes that increase the risk of landslides. As the Thomas Jefferson Soil and Water Conservation District states,

when the protective roots and canopy of forest trees are disturbed, similar impacts occur with even less significant rainfalls. For example, in 2003, Wintergreen Resort installed a “snow tube park,” which involved *clearing and grading on the steep slopes in Nelson County. Soon after grass stabilization was achieved, mountain storms resulted in severe erosion and landslides on these vulnerable slopes.* The shallow roots of grass, and lack of tree canopy, provided inadequate protection for the soils. It took several engineered attempts to finally create a stable environment [emphasis added].<sup>5</sup>



**T**he elevation along the proposed pipeline route drops dramatically, plunging from 1,500 feet to less than 900 feet, **with some grades being as steep as 58 degrees.**



See Appendix B for the assessment provided by the Thomas Jefferson Soil and Water Conservation District to the Federal Energy Regulatory Commission.

According to the DMME, these risks are exacerbated when they occur on slopes greater than 30 degrees. As noted earlier, slopes in Horizons Village are sometimes as great as 58 degrees.

These risks are also compounded by the frequency of high-rainfall events in our region, which are caused by a phenomenon known as *orographic lift*. Orographic lift occurs when an air mass is forced from a low elevation to a higher elevation as it moves over rising terrain. As the air mass gains altitude, “it quickly cools down adiabatically, which can raise the relative humidity to 100% and create clouds and, under the right conditions, precipitation.”<sup>6</sup>

If the Appalachian Trail South Alternate Route were approved and a landslide were to occur, the resulting damage would likely be devastating. This is because the proposed route roughly parallels one—and bisects another—of the private gravel roads in the community. Nine homes and eight building sites are within 1,350 feet of—and downhill from—the Appalachian Trail South Alternate Route. In the event of a landslide, these properties would likely be damaged or destroyed.

A landslide could also render one or both of these roads impassable. In this case, as many as half the residents in Horizons Village could be trapped, as there is only one means of entry and egress in the community. Blocked roads would also make it impossible for emergency crews to reach the affected lots.

The geography and related hazards described above are not unique to Horizons Village. The same circumstances—and therefore the same dangers—exist throughout Nelson County. Constructing and maintaining a pipeline through Horizons Village specifically, and through Nelson County in general, could cause a precipitous increase in the number and severity of landslides in these areas, with potentially devastating human and financial costs.

***Construction of a Dominion pipeline in West Virginia resulted in landslides due to steep slopes. Horizons Village has similar terrain along the Appalachian Trail South Alternate Route.***



# FLOODING

The Appalachian Trail South Alternate Route would disturb at least five seasonal drainage streams in Horizons Village, as shown on the map below. The drainage from these streams constitutes a combined watershed of approximately 250 acres. The proposed route through Horizons Village travels across and down a steep slope that is usually drained by these five seasonal streams. A shift in the flow of water into these drainage streams could place nearly every lot at risk of severe flooding, erosion, and other safety hazards. In fact, 37 of the subdivision's 40 lots—a total of 20 residences—are located downstream of or downhill from the proposed route. These lots constitute approximately 275 acres in Horizons Village.

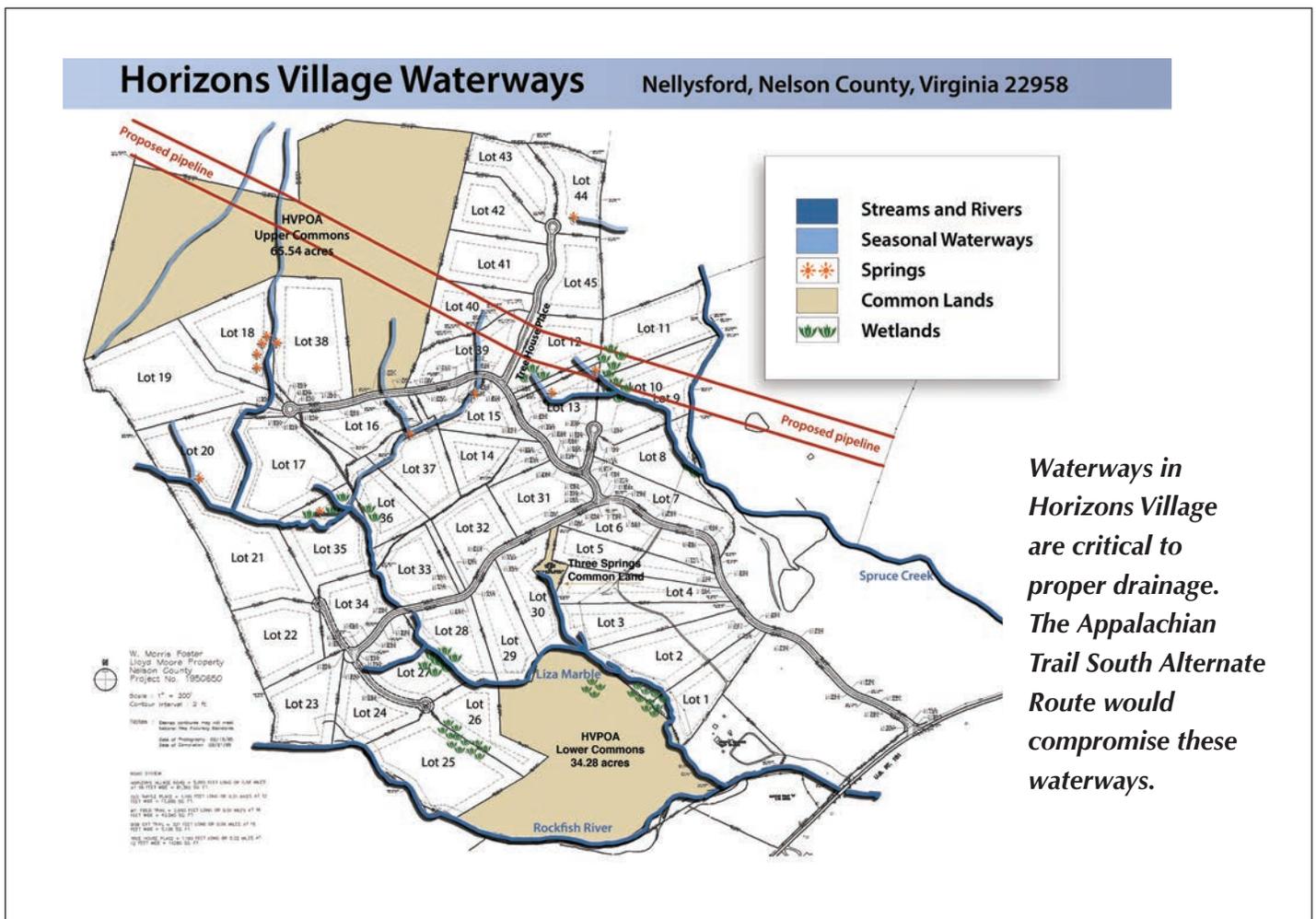
A hydrologist has warned against disturbing these drainage streams, indicating that they are critical for effective drainage of rainwater and runoff. If a pipeline were installed, the streams would deliver far more water than the ditches in Horizons Village were designed



The proposed pipeline route runs through at least five drainage streams in Horizons Village.

to handle. As the Thomas Jefferson Soil and Water Conservation District states, “the clearing of forests will significantly increase the volume and velocity of runoff into the valleys and stream channels below.”<sup>7</sup>

This increased water flow would flood the road, requiring significant investment on the part of the Horizons Village Property Owners Association to rebuild the road and upgrade the ditches and culverts to accommodate the increased volume of water. These costs would be borne by all of the neighborhood’s current residents—



*Waterways in Horizons Village are critical to proper drainage. The Appalachian Trail South Alternate Route would compromise these waterways.*



*These two neighborhood streams are in the path of the Appalachian Trail South Alternate Route. They already swell after rainfall.*

including those on fixed, single, or low incomes—and by future residents as well. Greatly increasing water flow into any of the community’s streams would likely increase incidents of flooding downstream, damage property and homes, and jeopardize the safety and well being of Horizons Village residents. As the Virginia Department of Emergency Management states in its “Commonwealth of Virginia Hazard Mitigation Plan,” “flash flooding is particularly dangerous in steep mountain valleys or other confined areas where there is little floodplain storage to attenuate the flood volume.”<sup>8</sup>

The Virginia Department of Emergency Management also warns that

transmission pipelines and supporting infrastructure are vulnerable to damage during flood events. Increased stream flow rates during flood events can erode banks at places where pipelines cross streams, potentially undermining the structural supports of the pipeline, and causing the pipeline to sag or break.<sup>9</sup>

This warning is of particular relevance to the Appalachian Trail South Alternate Route, which passes through Horizons Village by crossing Spruce Creek. Three years ago, Spruce Creek flooded and washed out a 5-foot culvert pipe and the gravel road that lay atop it. In 1969, Spruce Creek sustained lasting damage from Hurricane Camille, during which landslides and flooding caused 153 deaths. Spruce Creek, typically a 12-foot-wide waterway, regularly widens to 100 feet during heavy rains.

## EROSION AND SEDIMENTATION

**D**r. Richard Webb, a senior scientist in the University of Virginia Department of Environmental Sciences, warns that “soil erosion and sedimentation of streams will be difficult or impossible to avoid given the scale of earth disturbance and excavation on steep mountain sides.”<sup>10</sup> Dominion Resources, Inc., has a poor record of protecting surface water from sedimentation due to erosion.<sup>11</sup> Compounding this danger is the fact that the increased volume and velocity of runoff into stream channels created by the forest clearing necessary to construct the pipeline could create secondary erosion and sediment impact in waterways situated downhill from the pipeline.<sup>12</sup>

Sedimentation is the single largest contributor to pollution in the United States.<sup>13</sup> It fills “the interstices of gravel and cobble stream bottoms of rivers and streams, greatly decreasing the spawning areas for many fish species and the habitat for the macroinvertebrates” that fish eat.<sup>14</sup> As the U.S. Department of the Interior, U.S. Geological Survey, reports,

Many fish species in this region are sensitive to habitat degradation and are imperiled. By protecting sensitive fish species we protect not only an important and unique biological resource, but also our own source of clean freshwater.<sup>15</sup>

Horizons Village contains or borders three major, year-round waterways: the South Fork of the Rockfish River, Spruce Creek, and Liza Marble Creek. The potential for erosion and sedimentation of the waterways inside of Horizons Village is considerable. But our concerns extend beyond the community's borders. As the authors of *Green Infrastructure Strategies for Nelson County Virginia* report,

protecting the rivers[,] streams[,] lakes and tributaries of Nelson is critical for several reasons. Perhaps most importantly is the fact that local aquifers provide drinking water for the majority of the county, which has over 3,000 private wells within its borders. . . . Water resources within Nelson County are among the most critical for ensuring its long-term viability. Healthy streams and rivers are necessary to ensure safe drinking water, maintain ecological integrity and preserve the County's status as an area full of unspoiled natural beauty.<sup>16</sup>

Healthy streams and rivers are also important for the entire Commonwealth of Virginia, as Nelson County is a "headwater community." The headwaters of the Piney River, the Rockfish River, and the Tye River are located in Nelson County, and they extend across nine watersheds.<sup>17</sup> Approximately 2,220 miles of Nelson County's waterways drain directly into the James River and ultimately flow into the Chesapeake Bay.<sup>18</sup> Additionally, headwater streams influence downstream conditions through nutrient loads and by reducing sediment and other organic materials in the water. Collectively, headwater streams contribute approximately 90 percent of the Chesapeake Bay's freshwater flow.<sup>19</sup> Virtually all of the Chesapeake Bay is considered impaired, which has triggered new pollution reduction requirements for all states within the bay's 64,000-mile drainage area. Protecting the headwater streams in Nelson County will help improve the health of the county's streams, creeks, and rivers, and will help clean up the bay.<sup>20</sup>



**W**hen asked what **Dominion will do differently** in Virginia to avoid the sedimentation problems it has caused in West Virginia waterways, a Dominion environmental engineer said,

**"We don't know."**



Dominion has entered into a Consent Order with the West Virginia Department of Environmental Protection due to a staggering number of violations involving its pipelines and related sedimentation in West Virginia waterways. Dominion committed 16 water-sedimentation violations in the span of just eight months. The West Virginia Department of Environmental Protection repeatedly asked Dominion for information about the violations and received no reply for six months. Just one month later, Dominion failed to report a break in its pipeline and failed to take all necessary measures to contain the leak.

On March 10, 2015, at an open house, residents of Horizons Village asked a Dominion environmental engineer about the sedimentation problems it has caused in West Virginia waterways. The engineer's response was, "In that case, we [Dominion] did not even meet our own expectations." When asked what Dominion intended to do differently here in Virginia, the engineer's response was, "We don't know." At the same open house, Dominion's construction engineer was asked what vegetation Dominion would use to stabilize the pipeline right of way after construction, given the widespread knowledge that grass would not be sufficient to stabilize the steep mountain slopes in this area. The engineer stated that grass would be used and that if something different were required, it would be provided only at the lot owner's request and expense.

## GROUNDWATER RESOURCES AND WELLS

In Horizons Village, there are 17 wells, eight springs, five seasonal streams, four wetland areas, and two year-round streams within 1,320 feet of the Appalachian Trail South Alternate Route. One geologist noted that the proposed route would affect the immediate distal drainage waterways extending out from the pipeline. The trenching and blasting activities required to install the 42-inch piping to depth through the community would establish unnatural drainage pathways with the potential for unforeseen erosional impacts and unstable base formations during and after construction.

Degraded surface water drainage caused by disturbing overburdened soil and underlying rock formations would have significant deleterious effects on surface water features, including Spruce Creek, springs, seeps, wetlands, and the receiving Rockfish River. In addition, blasting activities could affect water supply wells due to potential fractures in geologic formations. If groundwater production were impeded by “short-circuiting” or “cave” to existing hydrogeological conditions, costly corrective measures would be required. Extensive assessment and evaluation are required to better understand the proposed route’s potential effects on groundwater resources and wells.

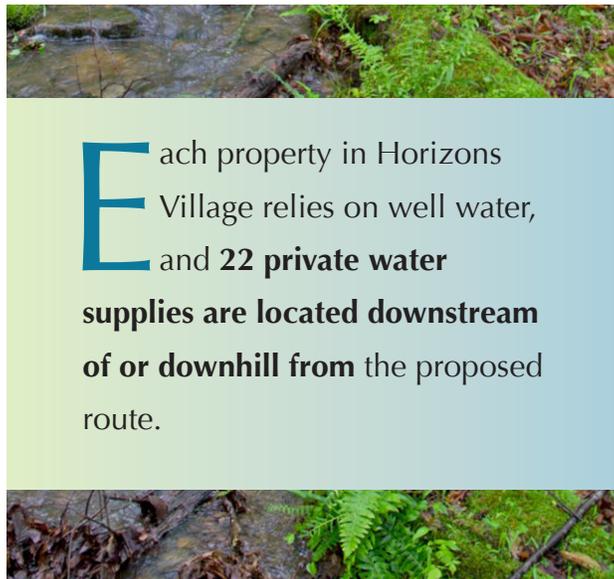
The Appalachian Trail South Alternate Route cuts through very large rock outcrops in Horizons Village’s collectively owned common land and surrounding areas. As noted earlier, blasting would undoubtedly be required to dig the pipeline trench. Streams, springs, and wells throughout the community could be severely compromised by this geological disruption. Each property in Horizons Village relies on well water, and 22 private water supplies are located downstream of or downhill from the Appalachian Trail South Alternate Route.

Exactly how extensively pipeline construction would degrade Horizons Village water supply wells will be difficult to estimate until the first series of explosions blast bedrock from the neighborhood’s hillsides to create the path. However, the side effects of these initial blasts could irreversibly harm private water supplies. Wells situated in the type of fractured bedrock found in Horizons Village are extremely sensitive to the groundwater environment. Consider the Virginia Department of Environmental Quality’s groundwater observation well, 27F2 SOW 019, which is near Christiansburg, VA. The Christiansburg well has responded to every major earthquake in the world. Seconds after an earthquake strikes, the water level in the Christiansburg well begins oscillating, sometimes continuing to oscillate for hours.<sup>21</sup> Seismic waves travel thousands of miles through the Earth’s crust, reaching the well almost instantaneously.

The oscillation of the Christiansburg well demonstrates the sensitivity of the Earth’s “plumbing.” Wells in Horizons Village could be similarly sensitive to any blasting of bedrock conducted to install the pipeline. Each detonation is intended to fracture and pulverize the bedrock, and each blast could send shockwaves into the adjacent formation, which could in

turn seal off the fractures that transmit groundwater throughout Horizons Village. One person’s well yield could increase drastically while another’s dries up altogether.

Private supply wells installed topographically up-gradient of the Appalachian Trail South Alternate Route could be partly or completely drained if the bedrock removed for the pipeline were to intercept crucial fracture pathways. The pipeline trench blasted into the bedrock could newly expose fractures that would drain surrounding groundwater into the trench and affect groundwater levels in the area. The impact on



Each property in Horizons Village relies on well water, and 22 private water supplies are located downstream of or downhill from the proposed route.

water levels in nearby wells could occur immediately or continue to evolve until the groundwater system stabilizes.

Private supply wells installed topographically down-gradient or side-gradient of the alternate route could experience lower water levels, depending on the depth of the blasts needed to excavate the pipeline trench. Wells located down-gradient of the pipeline trench could be affected if the fractures that supply the well are intercepted and redirected by the pipeline trench. Likewise, trenching action would change the surface topography, likely affecting the way the groundwater in the bedrock is recharged by precipitation. Once again, the impact on local private water supply wells could occur immediately or continue to evolve until the groundwater system stabilizes.

The bottom line is that blasting can seriously degrade local well water quality and quantity. Each detonation can leave explosive residue, and incomplete detonations can leave deposit explosive compounds that are detrimental to groundwater quality.

Dominion has stated that it will offer to conduct pre- and post-construction testing of any wells located within 150 feet of the pipeline. However, as the U.S. Department of the Interior, U.S. Geological Survey, reports, “the areal extent of ground-water-flow systems varies from a few square miles or less to tens of thousands of square miles.”<sup>22</sup> Therefore, more-extensive and more-expansive testing could be required to determine whether and how construction has degraded wells.

## WILDFIRES



The Virginia Department of Forestry rates Horizons Village between “**High Risk**” and “**Extreme Risk**” for wildfires.



On January 22, 2009, the Virginia Department of Forestry conducted a wildfire hazard assessment of Horizons Village, rating it between “High Risk” and “Extreme Risk.” (See Appendix C for the assessment.) Significant contributors to this assessment are the large number of pine trees surrounding many of the homes and the single, unpaved road available for entry and egress. Due to the neighborhood’s high risk for wildfires, the Department of Forestry strongly encouraged the Horizons Village become a “National FireWise Community,” which allows the community to receive annual grants for wildfire hazard mitigation. In 2014, Horizons Village contributed more than \$10,000 in cost sharing to the initial \$5,000 grant. The Department of Forestry has approved an additional \$3,500 grant to the community for its wildfire hazard mitigation efforts in 2015.

Common sense suggests that a highly combustible natural gas pipeline through any part of Horizons Village would only increase the risk of wildfires in the community. Certainly, no pipeline has ever been deemed to reduce the threat of wildfires in its vicinity. In the case of the Appalachian Trail South Alternate Route, the potential for casualties and property loss resulting from a wildfire is high. Forestland inside the boundaries of Horizons Village is contiguous with surrounding forestland on all sides. Therefore, any wildfire in the community could rapidly and easily spread throughout the neighborhood and up the mountain to Wintergreen Resort. In fact, the proximity of Wintergreen to Horizons Village contributed to Department of Forestry’s decision to grant funds to the community’s efforts to mitigate wildfires within Horizons Village. A wildfire could not only destroy Horizons Village but also endanger Wintergreen Resort and the millions of dollars it brings to Virginia as a popular year-round vacation spot.

## EFFECTS ON EMERGENCY MANAGEMENT

**H**orizons Village has only one access road for entry and egress. During a wildfire or other pipeline emergency, limited entry and egress could have catastrophic effects for both residents and first responders by delaying or completely inhibiting access to the community and trapping residents and first responders inside the emergency zone.

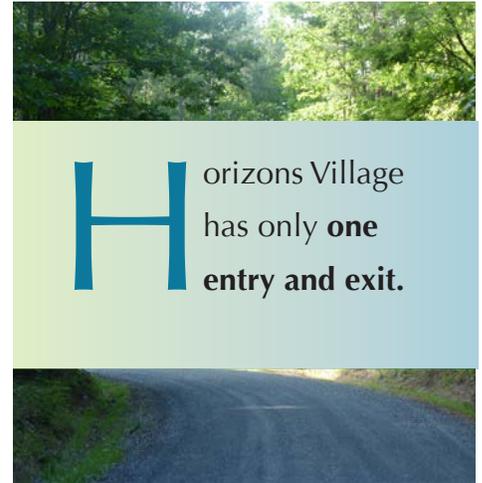
In the event of a fire in Horizons Village, emergency responders would have to truck in virtually all of the water needed for fire suppression. There are no fire hydrants in Horizons Village, and a fire department water tanker truck would have access to just one 3,000-gallon water vault for replenishment. (For reference, note that many fire trucks are equipped with a deluge gun that can pump out more than 1,000 gallons per minute.<sup>23</sup> A 3,000-gallon water vault could be depleted very quickly.) There are no local deep-water rivers, lakes, or ponds that could provide additional water.

Curtis Sheets, Deputy Executive Director and Chief of Wintergreen Fire and Rescue, provided Horizons Village with an assessment of its risk of a wildland-interface fire, and his findings warrant careful consideration. Chief Sheets warns that the entire neighborhood is at risk and that its western boundary is particularly vulnerable because of its slopes. These slopes could serve as a fire conduit to neighboring communities, including Fortune's Ridge, a mountain community adjacent to the entrance of Wintergreen Resort. Chief Sheets concludes his analysis with a question: "What does it take to stop a fire?" His answer:

Water. And there are no hydrants in the area. Tractors for plowing lines, the closest VA DoF dozer is in Amherst County. Air support, only available during fire season, staged at Shenandoah Valley Airport. Personnel, the County of Nelson has zero career firefighters, Wintergreen can reliably provide only 2–3. It's difficult to imagine a pipeline explosion scenario in Horizons Village which doesn't result in loss of homes.

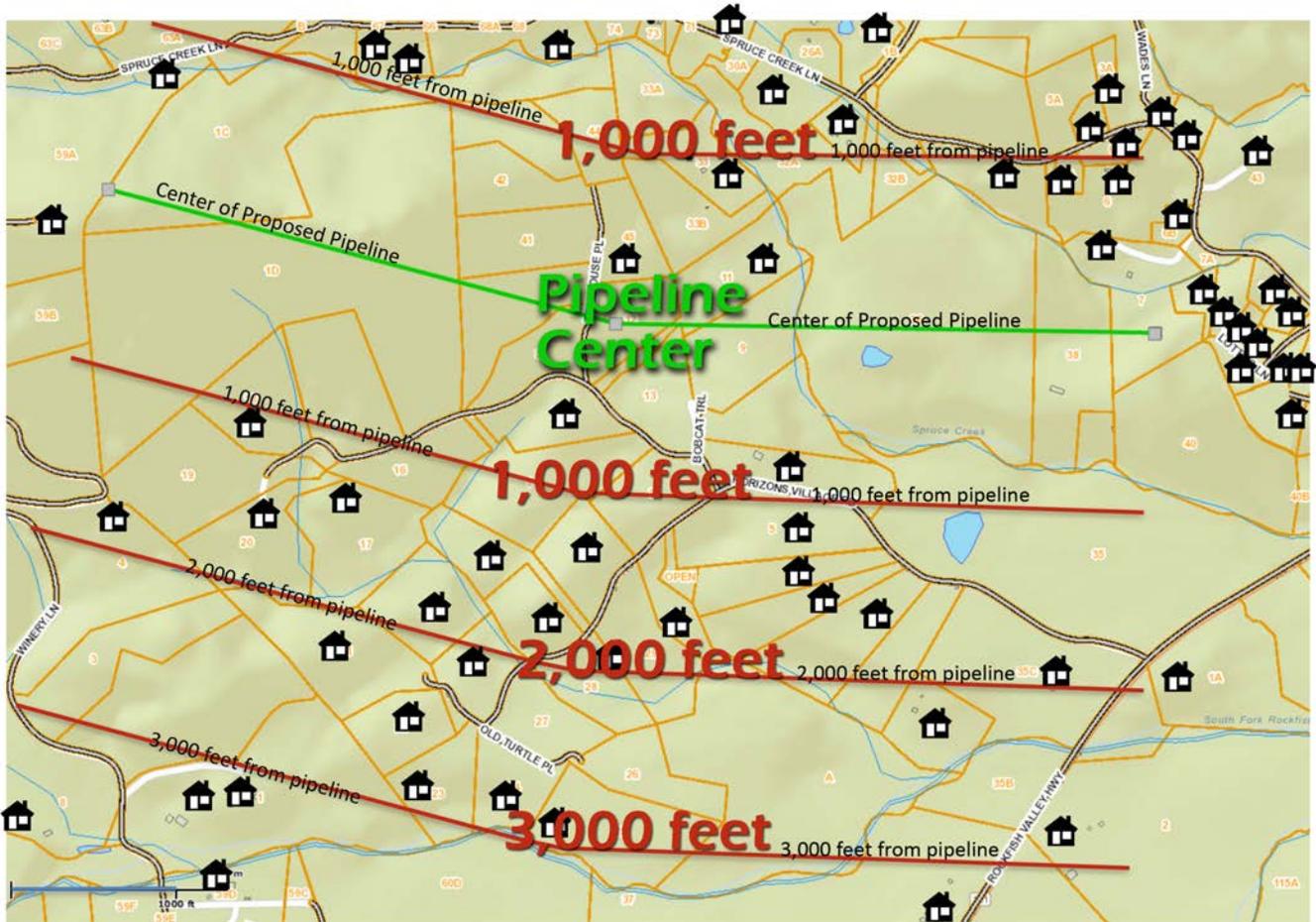
Chief Sheets concurs with the Virginia Department of Forestry's assessment that Horizons Village has an elevated risk of wildfires and warns that this fact should not be taken lightly.

Calculating the blast-zone radius is a useful way for neighborhoods and first responders to determine fire risk levels in pipeline emergencies. Studies have shown that the blast-zone radius for a 42-inch pipeline under high pressure is approximately 1,100 feet.<sup>24</sup> This blast-zone radius encompasses 20 lots Horizons Village, as well as four homes outside the boundaries of the neighborhood.



*The Sissonville, West Virginia, pipeline explosion on December 11, 2012.*

According to calculations tabulated by the Pipeline Association for Public Awareness, the recommended minimum evacuation distance for a 42-inch natural gas pipeline is 3,317 feet—more than 100 football fields.<sup>25</sup> As shown below, every single resident of Horizons Village would have to evacuate the neighborhood in a pipeline emergency. As noted earlier, there is only one road out of the community, and that road could be blocked or otherwise compromised due to other pipeline effects described earlier in this impact assessment.



***Every lot in Horizons Village is within the recommend evacuation distance of the Appalachian Trail South Alternate Route.***

In thinking about a pipeline emergency, it is important to consider not only the delicate infrastructure of Horizons Village but also the challenges that rural emergency services could face during such an emergency. Rural responders often have limited numbers of adequately trained staff and limited access to sufficient equipment. The separation and remoteness of rural communities contribute to longer response time. And, as noted earlier, the single means of entry into the community would compound the challenges that emergency personnel would face when responding to a pipeline disaster in Horizons Village.

# IMPACT ON ECONOMIC VIABILITY

**Construction and operation of the pipeline are in direct opposition to the purpose of Horizons Village—environmental and ecological conservation—and would undermine the identity of the neighborhood and thereby threaten its economic viability.**

## NEIGHBORHOOD IDENTITY

To understand the Appalachian Trail South Alternate Route's effect on the economic viability of Horizons Village, one must first understand the circumstances of the neighborhood's founding and operation. Horizons Village is an eco-sensitive subdivision with unique, legally binding covenants designed to recognize and protect the natural environmental features and sensitive location of the neighborhood, which is situated in the George Washington National Forest proclamation boundary and home to a wide diversity of flora and fauna.

The principles of environmental and ecological conservationism are woven throughout these covenants, which govern where residents site their homes, encourage energy-efficient and environmentally sensitive design and construction, and guide the way residents maintain their lots and care for the surrounding environment.

Construction and operation of a pipeline are in direct opposition to the neighborhood's purpose and identity as reflected in these covenants, which expressly prohibit unnecessary disruption of the natural environment. For example, the covenants limit tree clearing to no more than 40 percent per lot, require express written permission from the Property Owner's Association before cutting any trees more than 8 inches in diameter, require a 75-foot visual screen of natural vegetation as a setback from property lines, and prohibit the use of toxic chemicals and insecticides.

In certain affected lots, the pipeline's 125-foot-wide plow zone would account for a substantial portion of the allowable clearing amount, leaving little to no room for lot owners to construct homes and other permanent structures. The Appalachian Trail South Alternate Route would also destroy 20 natural vegetation setback areas across eight different properties. (See Appendix D for relevant excerpts from the Horizons Village covenants.)

Since its establishment in 1997, the neighborhood and its residents have been committed to environmental and ecological conservation and to creating and enforcing protections against haphazard or inharmonious development. Construction and operation of a pipeline in Horizons Village would permanently endanger this carefully conserved land and instantly undermine and violate the community's covenants. The principles of environmental and ecological conservation that underlie the neighborhood would be irrevocably subverted.



The Horizons Village covenants are designed to **prevent haphazard or inharmonious development of the neighborhood.**



## ECONOMIC VIABILITY

This eco-sensitive identity isn't just critical to the overall health of the neighborhood: It is why people choose to purchase property and live in Horizons Village. The scar that the pipeline and its right-of-way easement would create has already driven off prospective buyers and caused current lot owners to reconsider their plans to permanently move to Nelson County. Each resident lost is one less resident to serve as a steward of the land.

Properties within sight, sound, blast radius, spill plumes, and other physical contact with the pipeline corridor would obviously suffer the greatest losses in terms of value. But according to multiple real estate agents familiar with Horizons Village, even lots outside those zones would likely become less desirable, marketable, and valuable. (See Appendix E for a formal statement from a realtor on the pipeline's likely effect on property values.)

Although some studies have indicated that natural gas pipelines do not significantly harm property values, these studies did not specifically consider the impact of the right-of-way easement, which would have a tremendous negative visual effect on areas that, like Horizons Village, are cherished for their rural, scenic, and wooded environment.

Additionally, higher-pressure and larger-diameter pipelines, such as the one proposed for the Appalachian Trail South Alternate Route, are more dangerous because the risk of explosion is higher and the impact area is larger. These factors could exacerbate adverse effects on property values throughout the neighborhood and on the neighborhood's overall appeal.

As noted earlier, even the prospect of pipeline construction in Horizons Village has already made the neighborhood less attractive to prospective buyers. In late February 2015, a buyer cancelled her contract on a lot in Horizons Village after learning about the Appalachian Trail South Alternate Route. (See Appendix F for a letter from this former potential buyer explaining that the pipeline was the determining factor in her decision *not* to purchase land in Horizons Village.)

The Appalachian Trail South Alternate Route also bisects 65 acres of collectively owned common land



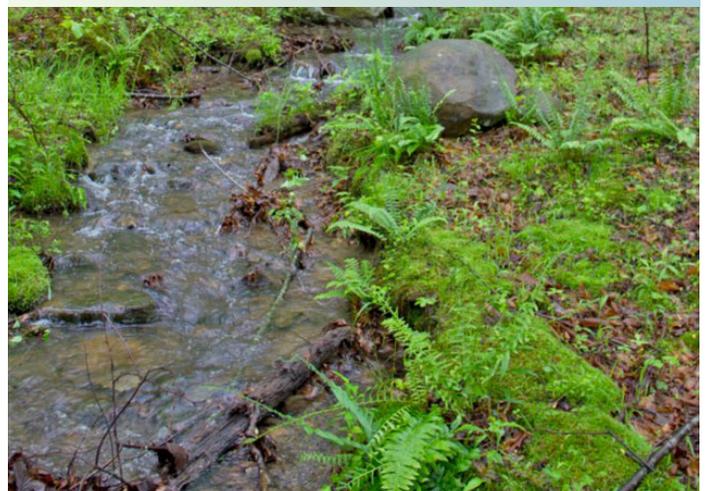
“If the pipeline came through, this was **no longer a place we wanted to live, no longer a place we felt safe investing our money.** With great regret, we asked for and received a release from our contract to purchase.”

—Cathy Mohn

“A pipeline would **deny us the right to choose where and if we even build our home.**

We're not sure what the future holds for us in Horizons Village now.”

—Will and Melissa Barr, owners of Lot 9



(the “Upper Commons”). Construction and operation of a pipeline would displace native wildlife and severely alter the landscape, rendering it essentially useless. This would directly affect every single property owner in Horizons Village, as each of the community’s 40 property owners has equity in this common land (currently assessed at \$196,500) and would suffer financial loss if it were disfigured by the pipeline.

Additionally, at least one of the affected lots would likely need to be abandoned, as the Appalachian Trail South Alternate Route and resulting easement cut directly through the only feasible building site. This would cause the affected owners financial hardship, but the entire community would also forfeit property owner dues (currently assessed at \$525 per lot annually) for the foreseeable future.

The residents of Horizons Village would likely experience additional adverse financial consequences. The roads in Horizons Village are private gravel roads, maintained by the property owners in the development through the Property Owners

Association at a cost of approximately \$20,000 annually. Ditches are maintained on the uphill sides of all roads, and eight culverts that pass under the roads might be affected by Appalachian Trail South Alternate Route. Any landslide or flooding event, even if it were slow-moving, could impede or plug those culverts. If this happened, the ditches that drain water from the road would fill with water. The best-case scenario is that the ditches would overflow and wash the road out. The worst-case scenario is that the culverts would be impeded, causing excess water to sit in the ditches and soak into the roads, causing them to slide as vehicles pass over them. Both scenarios jeopardize the safety residents and could cost the Property Owners Association thousands of dollars in repair costs.

The installation and operation of the pipeline might also prevent residents from obtaining a mortgage, or put residents in violation of their current mortgages. For example, Fannie Mae and Freddie Mac mortgage agreements include sections that prohibit properties from storing or releasing “hazardous substances” on the property. One mortgage section pertaining to hazardous materials says that the

borrower shall not cause or permit the presence, use, disposal, storage, or release of any hazardous substances, or threaten to release any hazardous substances, on or in the property. Borrower shall not do, nor allow anyone else to do, anything affecting the property . . . which creates an Environmental Condition, or . . . which, due to the presence, use, or release of a Hazardous Substance, creates a condition that adversely affects the value of the property.<sup>26</sup>



# IMPACT ON THE ENVIRONMENT

**Horizons Village is a carefully conserved ecosystem of critical wildlife habitats, fragile wetlands, and important historical and cultural artifacts that would be put in grave danger if the alternate pipeline route were approved.**

## WILDLIFE

**H**orizons Village, like most Nelson County communities along the eastern slope of the Blue Ridge Mountains, borders national forest land and the Blue Ridge Parkway corridor. This 20-mile segment of the Blue Ridge Mountains is home to a wide variety of wildlife that are continuously moving between the protected forests of the higher elevations and the wetlands and meadows of the lower Rockfish Valley.

This segment of the Blue Ridge Mountains is also the narrowest segment of the mountain range and, therefore, an attraction to utility companies looking for the easiest and cheapest path over the Blue Ridge Mountains. This 20-mile segment from Rockfish Gap to Reeds Gap has, for decades, been the target of power line utility rights of way, railroad routes, and interstate highways. The wildlife occupying this area already struggle to find safe ways to move around these interruptions in the protected, canopied pathways they prefer. The Atlantic Coast Pipeline would create one of the widest swaths of interruption across this already sensitive wildlife area—an area where the cumulative effect of these clear-cut pathways across this particular segment of the Blue Ridge Mountains is becoming overwhelming to the wildlife that are at high risk of losing their homes and hunting grounds.

In Horizons Village, the Appalachian Trail South Alternate Route would cut directly through terrain home to widely diverse, rare, and protected flora and fauna. Horizons Village is a steward of the land, helping to protect the environment and ecosystem not only of the neighborhood but also of the surrounding areas. The Appalachian Trail South Alternate Route would place this stewardship in jeopardy.

The Rockfish Valley Foundation Trail borders the neighborhood's southwest border, and animals from this protected area freely traverse Horizons Village. The neighborhood has set aside 100 acres of common land that is subject to a conservation easement in perpetuity in favor of owners in Horizons Village.



*The Blue Ridge Red Salamander lives in and around “clear, cold springs and small streams of wooded ravines, swamps, open fields, and meadows.”<sup>27</sup> It is threatened by habitat loss. (Photo by John P. Clare, Virginia Herpetological Society.)*

The pure water of streams and natural springs in Horizons Village is an ideal habitat for many creatures, including the Blue Ridge Red Salamander—an endangered species in parts of the United States. There have also been multiple sightings of the Eastern Cougar—previously thought by the state of Virginia to be extinct—in Horizons Village. Other wildlife living in Horizons Village includes black bears, turkey, deer, owls, hawks, bobcats, and foxes. (See Appendix G for a list of wildlife spotted by residents in Horizons Village. See Appendix H for pictures of wildlife in Horizons Village taken by residents.)



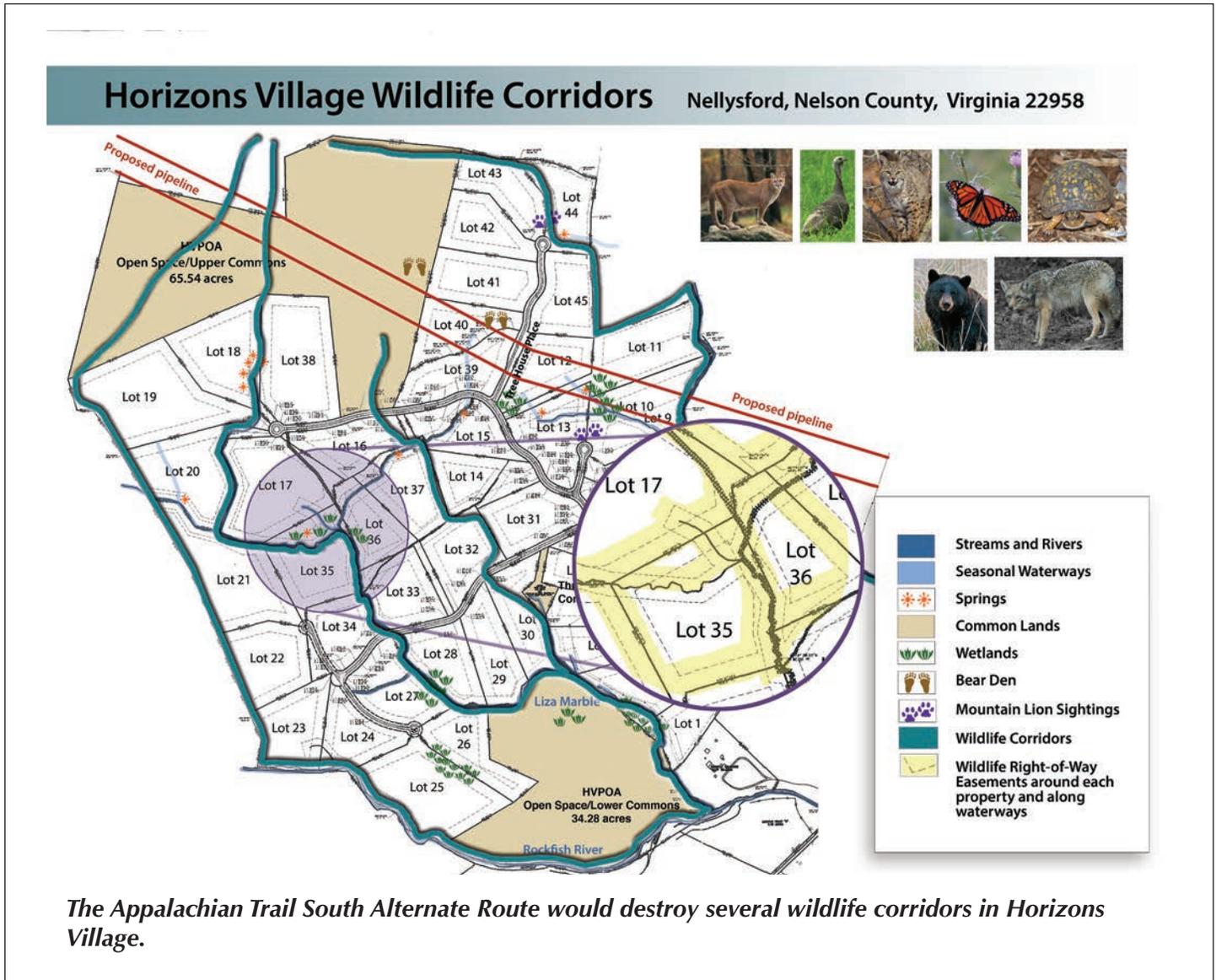
*A stream in Horizons Village. Inset: Spotted Salamander eggs. (Photo by Devin Floyd, Center for Urban Habitats.)*

Wildlife are very sensitive to the intrusion of people into their ecosystem. Horizons Village residents have dedicated considerable energy, time, and money to protect this ecosystem. For example,

**1. Horizons Village residents reserve common land and continuous corridors of relatively undisturbed forest throughout the neighborhood.**

- Residents have set aside 65 acres of wild, undisturbed common land on the mountain above the community. Strict rules concerning the use of this land protect its natural deep forest environment. This steep area is a natural, protected habitat for wildlife, dotted with small caves formed by granite rock outcrops and an abundance of safe alcoves for bears, foxes, coyotes, cougars, and other animals.
- Residents have set aside another 35 acres of common meadowland on the opposite side of the neighborhood. It is bordered by the Rockfish River and Rockfish Valley Foundation Trail.
- Owners of private lots between these common lands are required to maintain a 75-foot setback area on each of their property borders.<sup>28</sup> Where two properties meet, this creates a 150-foot natural vegetation buffer.
- Owners of private lots must also reserve space along property boundaries and waterways for residents and wildlife to move easily through the neighborhood.<sup>29</sup>
- The founders of the community carefully placed property boundaries along natural features, such as streams and creeks, to minimize disruption to the land and wildlife.
- The construction of homes is subject to restrictions limiting how much vegetation and forest can be removed. These restrictions are designed to preserve the natural vegetative environment.

As shown below, Horizons Village is bordered by two areas of common land: an upper highland and the meadowland beside the Rockfish River. Note the 75-foot setback areas of natural vegetation along the borders of each lot and the special 100-foot rights of way along streams and creeks. Wildlife move freely throughout the neighborhood, along the waterways, and between the upper and lower common areas.



**2. Horizons Village prohibits hunting, fishing, and other destruction of native animals.<sup>30</sup>**

Neighborhood covenants expressly prohibit deliberate injury to wildlife in Horizons Village. Bears, coyotes, foxes, deer, turkeys, snakes, birds, and other common Blue Ridge Mountain animal species roam freely across the property free from deliberate injury or destruction by humans.

**3. Horizons Village prohibits the use of toxic chemicals, insecticides, and other poisons.<sup>31</sup>**

Prohibitions on the use of toxic chemicals and poisons help protect the sensitive ecology that supports the native wildlife in Horizons Village, across the Rockfish Valley, and throughout Nelson County.

#### 4. Horizons Village controls roadway water runoff.

The Property Owners Association spends nearly \$20,000 each year to maintain the community's gravel roads, ditches, and culverts, all of which minimize erosion and sedimentation deposits into the neighborhood streams and wetlands that feed the Rockfish River.

Horizons Village is a haven for wildlife, comprising deep forest and meadowland habitats, chemical-free land, and a zone where hunting, fishing, and trapping are not tolerated. Wildlife find safe places to build temporary shelters and nests to raise families. Wild animals are frequently observed around neighborhood properties and homes. They are safe here.



*Old mountain laurel plants have survived for decades in Horizons Village.*

The Appalachian Trail South Alternate Route would fragment and destroy many of these protected areas in the community. It would cut a 125-foot path through the middle of the 65-acre highland common area, cleaving asunder this deep forest wildlife haven.

The Appalachian Trail South Alternate Route would also cut a wide swath through the community's natural vegetation setback areas and natural 100-foot easement areas along neighborhood creeks and streams, cutting off the natural corridor of forests and vegetation necessary for protected wildlife movement.

Even after the initial construction, a 75-foot open path would remain, according to Dominion.<sup>32</sup> This 75-foot open area would permanently fragment the neighborhood's forested areas.

Open areas in forests create barriers to the movement of many creatures, including amphibians that live on the forest floor. Even where conditions are such that the construction corridor can be graded and planted with grass, forest floor conditions cannot be recreated. The heavy-duty access roads necessary for pipeline would be additional barriers to the movement of wildlife. According to the Virginia Department of Forestry,

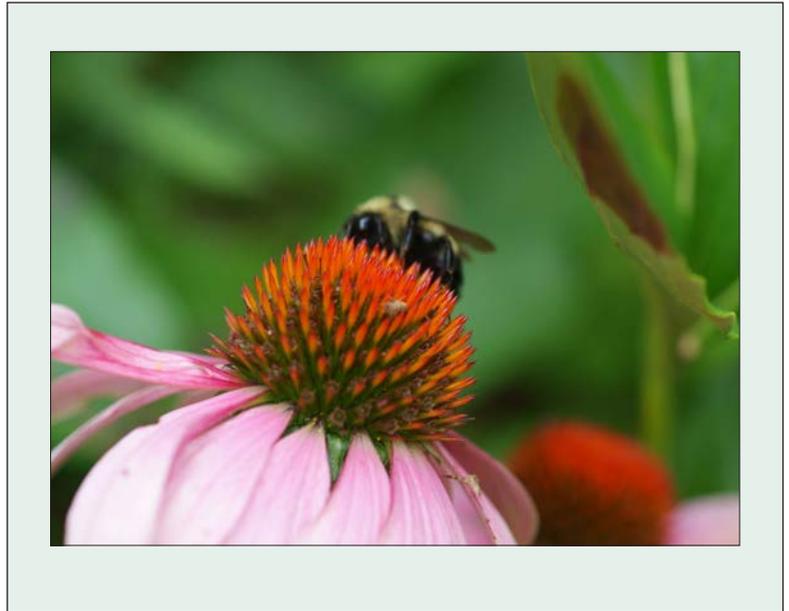
larger intact parcels support more plant and animal species, more effectively resist diseases and better support sustainable forest products timber management. Large parcel size is important, but so is connectivity. A connected forest landscape provides more benefits than a disconnected one. When forests are isolated, species within them are at greater risk to decline since animals and plants cannot re-colonize isolated areas. Connecting forests through wide, vegetated corridors facilitates the movements of animals, pollinators and plants over time to ensure that species can repopulate.<sup>33</sup>

Many different species of birds, including many migrant birds, depend on the interior forest habitat of Horizons Village. Loss of interior forest creates "edge conditions" favored by species that prey on birds that nest on the forest floor and in understory vegetation.<sup>34</sup> Nest parasitism increases with interior forest loss. For example, the cowbird, which lives on the forest edge, lays its eggs in the nests of other birds, resulting in recruitment failure for the host species.

## POLLINATORS

The pollination of flowering plants by animals is a critical ecosystem service of great value to humanity, both financially and otherwise. However, the need for active conservation of pollination interactions is only now being appreciated. Pollination systems are under increasing threat from anthropogenic sources, including fragmentation of habitat and changes in land use.<sup>35</sup>

The forests within Horizons Village support a variety of native pollinators, which are put at risk when their environment changes. These native pollinators include mason bees, leafcutter bees, digger bees, and carpenter bees. Clear-cutting forest areas removes the hardwood bloom that feeds bees early in the season, obliterates the hollow trees used by feral honey bees, and razes the dead stubs used by many solitary bees.<sup>36</sup>

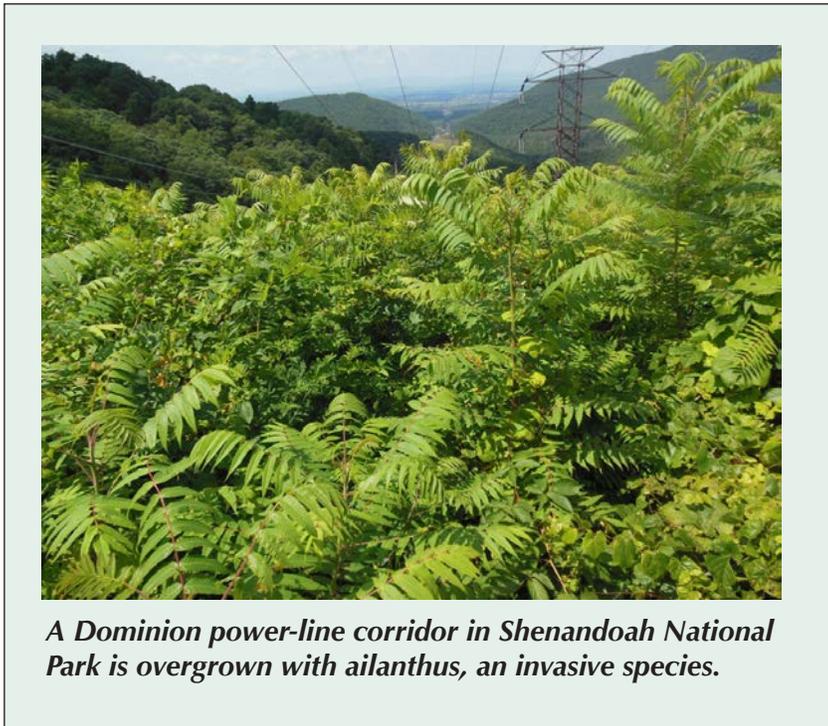


Pipeline construction would clear-cut 65 acres of natural pollinator habitat, resulting in the fragmentation of pollination systems in and around that area. Ultimately, the pipeline would destroy much of the natural environment that these important native pollinators depend on for survival.

## INVASIVE SPECIES

Cleared areas in Horizons Village forests would facilitate the introduction of invasive species that could crowd out native species of plants and animals. Nonnative wildlife would likely be attracted to the nonnative plants and trees that would undoubtedly spring up in the pipeline's path.

As shown at left, at least one Dominion power-line corridor in Shenandoah National Park has been overtaken by ailanthus, an invasive from Asia. Ailanthus a serious problem in many disturbed areas, where it crowds out native plant species. Horizons Village constantly battles invasive species by removing them wherever possible and by avoiding the creation of open areas that cannot be easily maintained.



*A Dominion power-line corridor in Shenandoah National Park is overgrown with ailanthus, an invasive species.*

## WETLANDS

**W**etlands are part of the foundation of the water resources in Horizons Village and are vital to the health of downstream waterways and communities. Horizons Village wetlands feed downstream waters, trap floodwaters, recharge groundwater supplies, remove pollution, and provide fish and wildlife habitat.

Wetlands in Horizons Village can be categorized as bottomland hardwood swamp. According to the Environmental Protection Agency, these types of wetlands serve a critical role in the watershed by reducing the risk and severity of flooding to downstream communities by providing areas to store floodwater. Wetlands act as a natural sponge, storing water and gradually releasing it. The ability of wetlands to store floodwaters reduces the risk of loss of life and costly property damage. Wetlands in Horizons Village provide an important ecosystem for plants and animals and help prevent flooding.



*Frog eggs are found in the wetlands of Horizons Village.*

When the wetlands in Horizons Village function properly, they protect water quality, provide a safe wildlife habitat, help store natural floodwater, and reduce the erosive potential of surface water. The construction and operation of the pipeline in Horizons Village could jeopardize these wetlands, with potentially devastating effects for residents, wildlife, and ecology.



*Wetlands in Horizons Village provide an important ecosystem for plants and animals and help prevent flooding.*



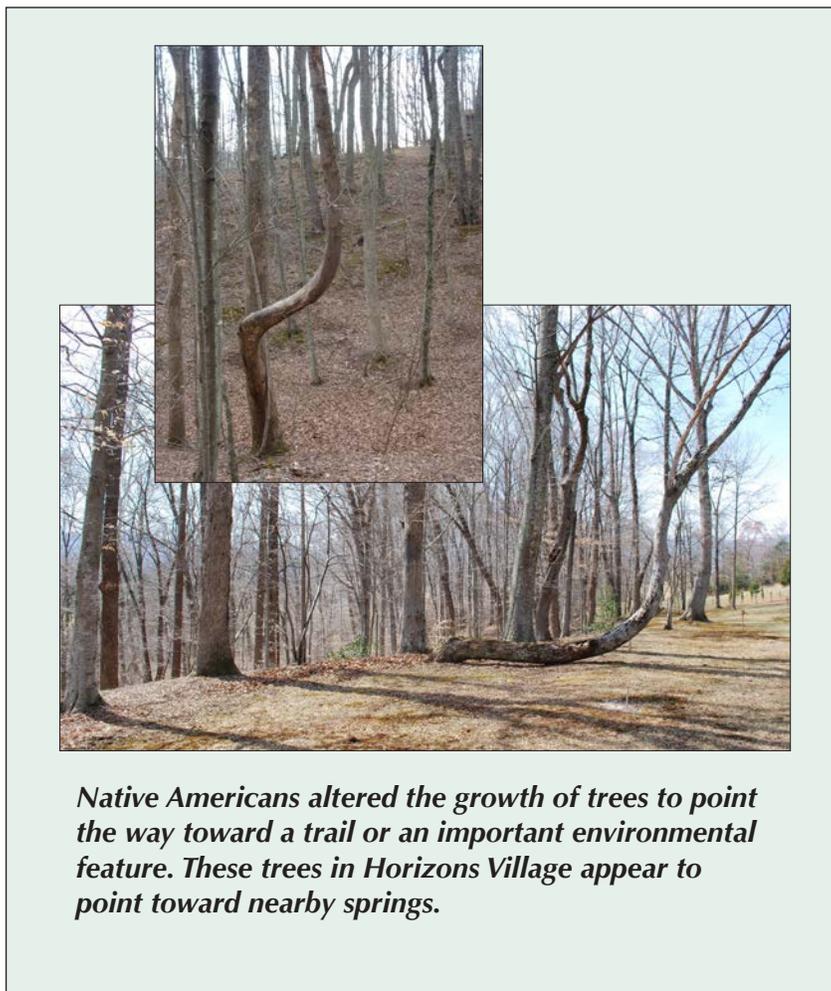
## HISTORY AND CULTURE

**H**orizons Village is home to cultural and historical resources. Local historians and the director of the Wintergreen Nature Center have advised the community that the Monacan Indian tribe used the land in and around Horizons Village for hunting and likely created summer encampments near the streams and springs found within the neighborhood's borders. Two private lot features what we believe are Native American marker trees.

Indeed, many Monacan artifacts have been found in Horizons Village and along Spruce Creek in areas directly in the path of the Appalachian Trail South Alternate Route.

Horizons Village encompasses the whole of Liza Marble Creek, from its headwaters to where it empties into the south fork of the Rockfish River. This creek is named after Liza Marble, a freed slave once attached to the nearby Elk Hill plantation. Liza Marble's cabin was once located next to the waterway that now bears her name.

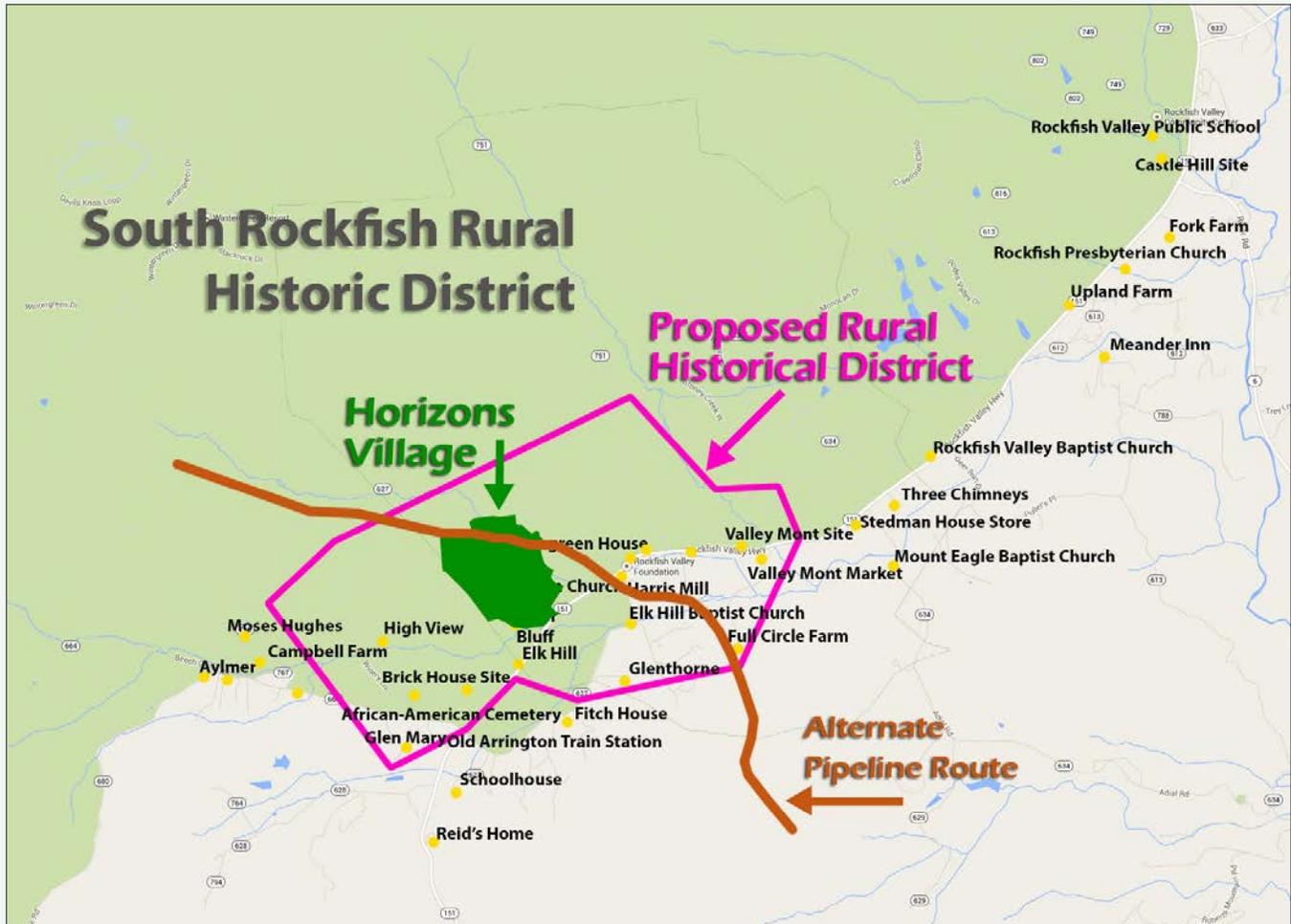
Horizons Village also lies within the proposed South Rockfish Rural Historic District. Indeed, once the district is approved, Horizons Village will lie at its heart, constituting about 20 percent of its total acreage. The Rockfish Valley Foundation is currently working with the Virginia Department of Historic Resources to make part of the Southern Rockfish Valley an official Rural Historic District. Construction of a pipeline in Horizons Village and Nelson County as a whole would likely disturb many cultural artifacts and hurt the historical resources of the area.



*Native Americans altered the growth of trees to point the way toward a trail or an important environmental feature. These trees in Horizons Village appear to point toward nearby springs.*



*This collection of arrowheads was found along the Rockfish River.*



*Horizons Village lies in the heart of the proposed rural historic district. (Image courtesy of the Rockfish Valley Foundation.)*

## CLOSING STATEMENT

This assessment has described the many ways in which the Appalachian Trail South Alternate Route would immediately and irreversibly jeopardize the people, property, wildlife, animal habitats, forests, and streams of Horizons Village—a unique, vibrant ecosystem that is the product of decades of careful stewardship. Independent experts have confirmed the significant safety, economic, and environmental risks that the Appalachian Trail South Alternate Route poses for Horizons Village and all of its residents, great and small. But Horizons Village is just one of the many Nelson County communities that the proposed route would endanger, disfigure, and damage for the foreseeable future.

The Appalachian Trail South Alternate Route passes directly through the scenic and historic Rockfish Valley—the heart of Nelson County’s tourism industry. The likely effects of the pipeline on future opportunities to carefully and sensitively develop what might be the region’s most dynamic and sustainable economic sectors are almost beyond count and measure.

We urge the Federal Energy Regulatory Commission to carefully consider all of the facts and concerns articulated in this assessment. We welcome opportunities to provide additional information and documentation.

We encourage the commission to take into account Dominion’s own admission that the Atlantic Coast Pipeline presents “a lot of firsts”—a statement made by Dominion’s manager of environmental business support—gas, Bill Scarpinato.<sup>37</sup> We respectfully submit that this vulnerable, precious land is not the right place for experimentation and learning through mistakes.

Finally, we exhort the commission to do what no other agency or regulatory body can: Protect the residents, property, ecosystem, and environment of Horizons Village and surrounding areas from the inevitable hazards and permanent losses associated with the Appalachian Trail South Alternate Route.

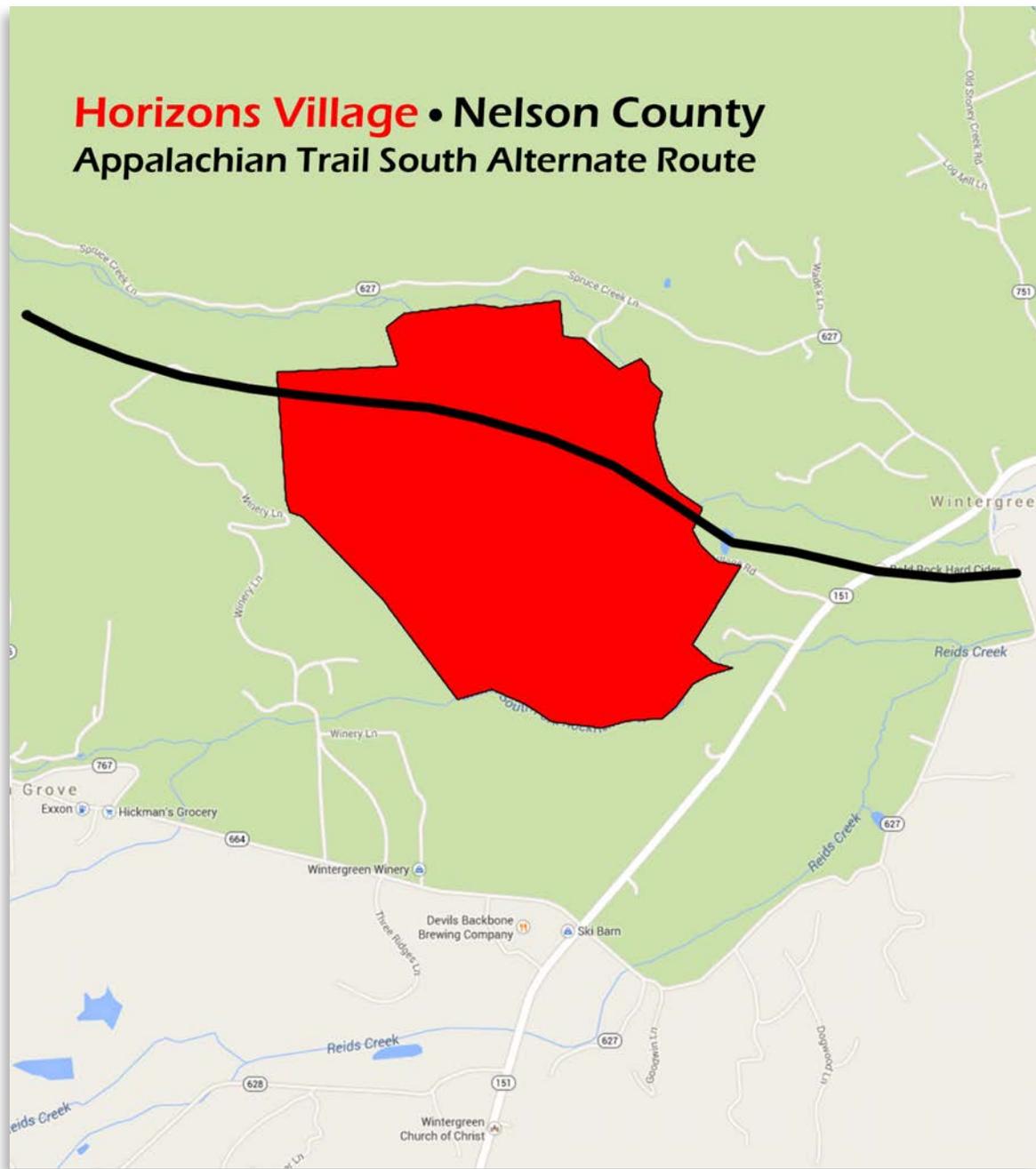


**“The Atlantic Coast Pipeline does not belong at Horizons Village, in Nelson County, or anywhere.** We love this land, the plants, the animals, and the natural wildness. **Should a pipeline come through here, or anywhere near here, it would be a horrible loss spiritually, emotionally, and financially.** We could not be paid enough money for the irreparable damage that would be done if Dominion were allowed to have its way with the land.”

—Keith and Merri Ehrhard, Horizons Village property owners



## Appendix A. HORIZONS VILLAGE LOCATION



## Appendix B. THOMAS JEFFERSON SOIL AND WATER CONSERVATION DISTRICT ASSESSMENT

The following letter cautions the Federal Energy Regulatory Commission against the Atlantic Coast Pipeline.

20150112-5140 FERC PDF (Unofficial) 1/12/2015 12:16:41 PM



### Thomas Jefferson Soil and Water Conservation District

706G Forest Street, Charlottesville, VA 22903

Tel: (434) 975-0224 Fax: (434) 975-1367

Web Page: [www.tjswcd.org](http://www.tjswcd.org)

Louisa Office: 39 Industrial Dr, Louisa, VA 23093

Phone: 540-967-5940 Fax: 540-967-2557

December 5, 2014

Kimberly Bose, Secretary  
Federal Energy Regulatory Commission  
888 First St., N.E.  
Washington D.C. 20426

Re: Dominion Power - Atlantic Coast Pipeline

Dear Ms. Bose and Members of the Commission:

The Thomas Jefferson Soil and Water Conservation District (TJSWCD) has been providing technical assistance related to land management and conservation of soil and water resources for over 75 years. In that capacity, we are all too familiar with the vulnerability of the land in Nelson County to erosion, landslides and debris flows. While the land is extremely vulnerable in its natural, forested state, land disturbance exacerbates these problems significantly. The Atlantic Coast Pipeline (ACP), as proposed, will result in the clearing of wide swaths of forests on steep, geologically unstable slopes. Based on our local knowledge of the critical environmental concerns associated with clearing and grading in this terrain and geology, the TJSWCD respectfully requests that an alternative route for Dominion Power's Atlantic Coast Pipeline be chosen.

Nelson County's mountainous terrain is characterized by shallow soils above granite bedrock. The bedrock contains fractures that convey water underground near the surface. This in itself creates unstable conditions, as the soil is very susceptible to sliding along the smooth bedrock. This was catastrophically demonstrated in 1969 when the remnants of Hurricane Camille came through the area, causing landslides and debris flows, killing hundreds of people, and leaving terrain scars still visible today. While Hurricane Camille was an extreme event, "(s)ignificant rain events that trigger landslides occur in Virginia every 10-15 years" (<http://www.dmme.virginia.gov/DGMR/landslides.shtml>).

When the protective roots and canopy of forest trees are disturbed, similar impacts occur with even *less* significant rainfalls. For example, in 2003, Wintergreen Resort installed a "snow tube park", which involved clearing and grading on the steep slopes in Nelson County. Soon after grass stabilization was achieved, mountain storms resulted in severe erosion and landslides on these vulnerable slopes. The shallow roots of grass, and the lack of tree canopy, provided inadequate protection for the soils. It took several engineered attempts to finally create a stable environment. (See photos of landslides below)

\_\_\_\_\_ *"To exercise leadership in promoting natural resource protection"* \_\_\_\_\_

## Appendix B. THOMAS JEFFERSON SOIL AND WATER CONSERVATION DISTRICT ASSESSMENT

20150112-5140 FERC PDF (Unofficial) 1/12/2015 12:16:41 PM



Photos – Wintergreen 2003, mudslides after clearing & grading

In addition to the soil stability impacts along the pipeline route, the clearing of forests will significantly increase the volume and velocity of runoff into the valleys and stream channels below, creating secondary erosion and sediment impacts in those channels. Additional environmental concerns include the well-known problems of forest fragmentation with associated losses of habitat, and the spreading of invasive species.

The TJSWCD urges the Federal Energy Regulatory Commission to require Dominion to satisfactorily show why they think the proposed route is the best route and how they will address the following issues and concerns:

- Management of post construction stormwater runoff to ensure that the volume and velocity of runoff will not increase along the entire pipeline route
- Documentation of risk analyses on similar terrain and geology to predict the landslide potential with clearing and pipeline installation
- Stabilization criteria to guarantee stability on shallow, slide-prone soils (types of vegetation and establishment methods to be used; maintenance criteria to ensure long-term stability)
- Impact of blasting on the surrounding land that is vulnerable to landslides
- Impact of blasting on the water-filled fractures in the bedrock. These rock fractures contain the water that ultimately recharges the wells and springs which supply domestic water to Nelson County residents.
- Protection of public safety in the event the pipeline is exposed through erosion and landslides
- Protection of the pipeline at stream crossings, through streams which are known to constantly move and change shape due to the large amounts of flow from the mountains during storms.

In light of the concerns outlined above, the TJSWCD requests that an alternative route be chosen for the Atlantic Coast Pipeline. The alternative should avoid the sensitive landscapes, geology and terrain that are characteristic of the proposed route.

Respectfully,

Alyson Sappington  
District Manager

Cc. U.S Congressman Dave Brat, 7<sup>th</sup> District  
U.S. Congressman Robert Hurt, 5<sup>th</sup> District

*“To exercise leadership in promoting natural resource protection”*

# Appendix C. WILDFIRE ASSESSMENT

The Virginia Department of Forestry conducted a wildfire hazard assessment of Horizons Village, rating it between “High Risk” and “Extreme Risk.”

#26

Form 140  
06/01/2003

**VIRGINIA DEPARTMENT OF FORESTRY**  
WILDLAND URBAN INTERFACE FIRE PROTECTION PROGRAM  
**WOODLAND COMMUNITY WILDFIRE HAZARD ASSESSMENT**

Page 1

Subdivision Name(s): HORIZONS VILLAGE

Location: State Route 151 + Horizons Village Rd. north of Wintergreen

Tax Map Id.: \_\_\_\_\_

Latitude: 37.8812 Longitude: W078.90676

Fire Department Jurisdiction: \_\_\_\_\_

Date: \_\_\_\_\_ Date Evaluated: 01/22/09

No. Acres: \_\_\_\_\_ No. Lots: \_\_\_\_\_ No Homes Built: 12 No. Homes Under Construction: 1

**CALCULATING THE WILDFIRE HAZARD RATING**

SUBDIVISION DESIGN HAZARD RATING	+	SITE HAZARD RATING	+	BUILDING CONSTRUCTION HAZARD RATING	+	ADDITIONAL FACTOR HAZARD RATING	=	OVERALL WILDFIRE HAZARD RATING
<u>12</u>	+	<u>56</u>	+	<u>20</u>	+	<u>47</u>	=	<u>135</u>

SUBDIVISION DESIGN RATING:	Rating	
<b>ACCESS</b>		
2 or more roads in and out	0	
One road in and out (entrance and exit is the same)	5	<u>5</u>
<b>SUBDIVISION BRIDGES</b>		
No bridges or bridges with no weight and/or width restrictions	0	<u>0</u>
Low weight bridges restricting emergency vehicle access	5	
<b>ROAD WIDTH</b>		
At least 20 feet wide	2	<u>2</u>
Less than 20 feet wide	4	
<b>ROAD ACCESSABILITY</b>		
All weather access	0	<u>0</u>
Limited access or unmaintained access	5	
<b>SECONDARY ROAD CHARACTERISTICS</b>		
Road ends in a cul-de-sac		
Cul-de-sac diameter > 100 feet	1	
Cul-de-sac diameter < 100 feet	2	<u>2</u>
Dead end road <200 feet long	3	
Dead end road >200 feet long	5	
<b>STREET SIGNS</b>		
Present with >4 inch letters and reflective	1	
Missing, <4 inches or non-reflective	3	<u>3</u>
<b>TOTAL SUBDIVISION HAZARD RATING</b>		<u>12</u>

# Appendix C. WILDFIRE ASSESSMENT

Form 140  
06/01/2003

**VIRGINIA DEPARTMENT OF FORESTRY**  
WILDLAND URBAN INTERFACE FIRE PROTECTION PROGRAM  
**WOODLAND COMMUNITY WILDFIRE HAZARD ASSESSMENT**

Page 2

SITE HAZARD RATING: (Within 30 feet of structure based on a majority of the properties in the community)	Rating	
<b>DRIVEWAY CHARACTERISTICS</b>		
Less than 150 feet long	0	
More than 150 feet with minimum 45 foot outside radius turnaround	3	
More than 150 feet with an inadequate turnaround	5	5
Average driveway width more than 12 feet wide	0	0
Average driveway width less than 12 feet wide	5	
No obstructing overhead branches below 15 feet	0	0
Obstructing overhead branches below 15 feet	5	
No bridges or bridges with no weight and/or width restrictions	0	0
Inadequate surface or low weight bridges restricting emergency vehicle access	5	
Slopes level or less than 10%	0	
Slopes over 10%	5	5
No gate/non-locking gate	0	
Locked gate restricting access	5	5
Address clearly visible from the road	0	
Address not visible from the road	2	2
<b>DOMINANT TREES (within 100 feet of homes)</b>		
Deciduous (Hardwoods)	1	
Mixed (Hardwoods and Conifers)	5	5
Conifers (Pines and or Red Cedar)	10	
<b>LADDER FUELS</b>		
Conifer branches close to the ground	5	5
Conifer branches pruned up at least 6 feet	0	
<b>VEGETATION (predominant type throughout the community)</b>		
Low fire hazard	5	
Grasses less than 6 inches tall		
Hardwood leaves		
Medium fire hazard	10	16
Grasses greater than 6 inches		
Pine needles		
Mixed stands of hardwoods and pines		
High fire hazard	20	
Dense stands of pines or other conifers		
Moderate to heavy dead and downed vegetation		
<b>SLOPE OF PROPERTY</b>		
Flat (0-5%)	0	
Moderate (6-20)	2	
Steep (over 20%)	4	4
<b>DEFENSIBLE SPACE (around the majority of homes)</b>		
No trees, shrubs or tall grass within the 30 foot zone	0	
Well spaced trees and shrubs within the 30 foot zone	10	10
Touching crowns or tall grass within the 30 foot zone	20	
<b>DEFENSIBLE SPACE (around the majority of homes)</b>		
No un-thinned or unmanaged timber within the 100 foot zone	0	
Un-thinned or unmanaged timber within the 100 foot zone	5	5
<b>TOTAL SITE HAZARD RATING</b>		<b>56</b>

# Appendix C. WILDFIRE ASSESSMENT

Form 140  
06/01/2003

**VIRGINIA DEPARTMENT OF FORESTRY**  
WILDLAND URBAN INTERFACE FIRE PROTECTION PROGRAM  
**WOODLAND COMMUNITY WILDFIRE HAZARD ASSESSMENT**

Page 3

<b>BUILDING CONSTRUCTION HAZARD RATING:</b>	<b>Rating</b>	
<b>ROOFING MATERIALS</b>		
Greater than 75% of homes have metal, tile or class A asphalt or fiberglass shingles	0	0
50 to 75% of homes have metal, tile or class A asphalt or fiberglass shingles	10	
Less than 50% of homes have metal, tile or class A asphalt or fiberglass shingles	15	
<b>SIDING / SOFFETS</b>		
Greater than 75% of homes have fire resistant siding and soffets	0	10
50 to 75% of homes have fire resistant siding and soffets	5	
Less than 50% of homes have fire resistant siding and soffets	10	
<b>UNDERSKIRTING (if applicable)</b>		
Greater than 75% of the homes have the equivalent of fine mesh screening underneath	0	10
50 to 75% of the homes have the equivalent of fine mesh screening underneath	5	
Less than 50% of the homes have the equivalent of fine mesh screening underneath	10	
<b>TOTAL BUILDING CONSTRUCTION HAZARD RATING</b>		20

<b>ADDITIONAL HAZARD FACTORS:</b>	<b>Rating</b>	
<b>FIRE CONTROL WATER SUPPLY</b>		
Pressurized hydrants with minimum 500 GPM spaced less than 1000 feet apart	0	7
Pressurized hydrants with less than 500 GPM or spaced more than 1000 feet apart	2	
Dry Hydrant(s) available year round within the community	2	
Other accessible sources within community	5	
Water sources located within 4 road miles of community	7	
No water sources in or within 4 miles of the community	15	
<b>ELECTRIC UTILITIES</b>		
Underground clearly marked	0	0
Underground not clearly marked	2	
Overhead with adequate (at least 20 foot) right of way	2	
Overhead with right of way un-maintained	5	
<b>GAS UTILITIES</b>		
Underground clearly marked	0	0
Underground not clearly marked	1	
Above ground with 15 feet of brush clearance, grater than 30 feet from the homes	2	
Above ground no brush clearance or within 30 feet of homes	5	
<b>SURROUNDING ENVIRONMENT</b>		
Community is not surrounded by any large forested areas.	0	15
Large forested area adjoins one side of the community.	5	
Large forested area adjoins 2 sides of the community.	10	
Large forested area adjoins 3 sides of the community.	15	
Community is completely surrounded by large forested areas.	20	
<b>UNDEVELOPED LOTS</b>		
Less than 10% of lots have not been developed and pose an additional wildfire hazard due to lack of maintenance or restricted access.	0	5
10% to 50% of lots have not been developed...	3	
51 to 75% of lots have not been developed...	5	
Greater than 75% of lots have not been developed...	10	

# Appendix C. WILDFIRE ASSESSMENT

Form 140  
06/01/2003

**VIRGINIA DEPARTMENT OF FORESTRY**  
 WILDLAND URBAN INTERFACE FIRE PROTECTION PROGRAM  
**WOODLAND COMMUNITY WILDFIRE HAZARD ASSESSMENT**

Page 4

RISK LOCATION		
Community is located within the following designated Wildfire Risk Areas according to the VA Dept of Forestry's Risk Analysis.		
Low	0	
Medium	10	
High	20	20
<b>TOTAL ADDITIONAL HAZARD FACTORS</b>		47

**What does the Wildfire Hazard Rating number mean?**  
 Using the Wildfire Hazard Assessment, the highest possible rating is 206 points. Woodland communities can be divided into the following four/three risk categories:

**Low Risk: Total Wildfire Risk Rating is 0 - 75 points**  
 The chances of your home surviving a wildfire are GOOD. Little is needed to improve your situation. Keep up the good work!

**Moderate Risk: Total Wildfire Risk Rating is 76 - 130 points**  
 The chances of your home surviving a wildfire are FAIR. Some Minor improvements will make your home more fire resistant. Check the areas on the form in which you scored poorly.

**High Risk: Total Wildfire Risk Rating is Over 130 points**  
 The chances of your home surviving a wildfire are NOT GOOD. Improvements are necessary. Some improvements in structure and site are necessary.

**Extreme Risk: Total Wildfire Risk Rating is Over 140 points**  
 Your home MAY NOT SURVIVE if a wildfire passes through the area. In fact, a fire could even start on your property. Take a serious look at your property and make improvements. If you don't, you may be facing disaster. You'll find that even small changes could make the difference between losing or saving your home.

**HAZARD** is defined as the potential fire behavior based on physical fuel characteristics.

**RISK** is defined as the probability of fire occurrence determined by the number, presence and activity of potential ignition sources.

This form may be used to evaluate your community and determine the level of wildfire risk. It covers roughly one-half of the hazards normally taken into account in calculating fire risk, but does provide an approximate indication of true risk. For more information on your home's fire risk, or for a more complete evaluation of your property, contact your local Department of Forestry office.

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## Appendix D. EXCERPTS FROM HORIZONS VILLAGE COVENANTS

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**These paragraphs are excerpts from the Horizons Village covenants and bylaws. To request a copy of the full covenants and bylaws, please write to David Bennett at [horizons.village@gmail.com](mailto:horizons.village@gmail.com).**

### **GENERAL CHARACTER AND PURPOSE:**

The Horizons Village Subdivision, Phase I and Phase II is subjected to these Protective Covenants in recognition of the Horizons Village Subdivision, Phase I and Phase II's natural environmental features and sensitive location and to ensure a unified, managed, sustainable use development, distinguished by visual quality, sensitivity to the natural setting and to promote beneficial single family residential development. It is the intent of these Protective Covenants to ensure that the Property be maintained as an attractive setting for single family residential use in harmony with the natural setting of the area; to encourage a sense of community environmental values; to protect the Owners of the Lots and the natural inhabitants against improper and undesirable use of surrounding Lots and/or Open Space land; to prevent improvements built of undesirable or unsuitable materials or design; to encourage the creation of attractive sustainable improvements with appropriate locations; and to prevent haphazard and/or inharmonious development of the Property.

### **ARTICLE III: PROTECTIVE COVENANTS, RESTRICTIONS AND RESERVATIONS:**

Clearing of Lots shall not exceed forty percent (40%) of natural tree cover, and any trees larger than 8 inches diameter at a height of 6' may be cut only by express written approval of the Declarant or subsequent Owners Association.

**3. BUILDING SETBACK LINES**—Setback lines shall be a seventy-five foot visual screen of natural vegetation. Exceptions may be permitted due to Lot shape or terrain and shall require express written approval of the Declarant or subsequent Owners Association.

**4. PROTECTION OF ANIMALS**—Horizons Village Subdivision is intended to be a sanctuary for all residents, including wildlife. No hunting, fishing, or destruction of native animals (including, without limitation, opossum, deer, squirrels, beavers, etc.) is permitted.

**6. NUISANCE**—Except as part of the normal construction process of Improvements, no use shall be permitted or maintained on any portion of any Lot which causes, produces or contributes to any of the following:

- a. Noxious, toxic, or corrosive fumes or gases.
- b. Noise that, because of excessive or unusual volume, duration, intermittence, beat, frequency, or pitch is objectionable to Owners of other Lots. Loud noises, such as are generated by power tools, heavy machinery and amplified music should be minimized and confined to normal daylight business hours.

## Appendix D. EXCERPTS FROM HORIZONS VILLAGE COVENANTS

c. Odors which permeate or in any way adversely affect Owners of other Lots on the Horizons Village Subdivision, Phase I and Phase II.

d. No use or discharge of toxic chemicals, insecticides or other poisons will be permitted on or in the land, air or waters, including ground water.

g. Any fuel storage tanks, trash and garbage receptacles shall not be buried in the ground and shall be placed so as not to be visible from any roadway or outside the Lot boundaries.

**7. OPEN SPACE**—The Declarant reserves 100 acres of land shown as Open Space on the attached plat, to be available for use by Owners and their guests, subject to a conservation easement in perpetuity in favor of Owners in the Horizons Village subdivision. Said Open Space area within seventy-five (75) feet of the mean low water mark shall remain as close to its natural state as practicable and is not to be cleared of its tree cover. No building, fence, structure and/or improvement, either temporary or permanent, and no vehicle, equipment or property of any kind shall be constructed, erected, placed upon or stored within the confines of the Open Space area. No tree, bush, shrub or other plant within the confines of the forested Open Space area may be cut, trimmed, disturbed, or removed except as necessary for fire prevention or emergencies, or for nature trails and small areas for picnicking, primitive camping or guided trail walks, it being the intention to preserve the area in a natural and undisturbed state.



*The Upper Commons comprises 65 acres of open space. (Chestnut Oak photo by Devin Floyd, Center for Urban Habitats.)*

## Appendix E. REALTOR ASSESSMENT

**Friends of Horizons asked Linda McGovern, a former resident of Nelson County with more than 25 years of real estate agent experience, for an assessment of how the pipeline might affect property values in Horizons Village.**

March 9, 2015

Mr. Larry Herring  
Friends of Horizons  
43 Old Turtle Place  
Nellysford, VA 22958

Mr. Herring:

I am writing in response to your request for an assessment of the potential impact on property values in Horizons Village should a natural gas pipeline be constructed in the neighborhood.

I have sold several properties in Horizons Village. Residents are certainly attracted to the neighborhood's natural beauty and proximity to local amenities, outdoor recreation, and wildlife. However, in my experience, it is the neighborhood's commitment to environmental conservation that most appeals to potential residents. Buyers know that their property will be protected from unnecessary development, providing them with privacy, security, and scenic beauty that are unmatched in Nelson County.

Given these factors, it is my professional opinion that buyers would be discouraged from considering Horizons Village if a pipeline were constructed there. Additionally, I strongly suspect that property values across the neighborhood would decline—particularly those within sight, sound, blast radius, or spill plumes of the pipeline corridor.

Please let me know if you have any further questions.

Regards,

*Linda McGovern*  
Assoc. Broker  
Marmory Homes & Land  
434 386-6216

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## Appendix F. LETTER FROM FORMER POTENTIAL BUYER

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**This letter was provided by Cathy Mohn, who recently backed out of her contract to purchase land in Horizons Village because of the prospect of the pipeline.**

We first visited Nelson County in 2012 on our way to somewhere else. But we found ourselves coming back to Nelson County to enjoy the area for its own sake. We were attracted to its close proximity to Shenandoah National Park and the Blue Ridge Parkway for hiking and camping. We enjoyed the craft beer from the local breweries along Highway 151. We visited Charlottesville and Monticello. As amateur musicians, we were pleased to find community orchestras in the area. And through it all, we took in the Beauty. Such beauty all around! It wasn't long before we began to imagine ourselves with a more permanent connection to the place. Perhaps a few acres of wooded land on which we could build our dream home and enjoy our own piece of this beautiful area. We searched and found the perfect spot for us: 12.7 acres of hardwoods next to a vineyard, bordered by wooded common area to the north, and within a community of residents whose priority was to preserve the very privacy and unspoiled natural beauty of the area that we so craved. In early February we had a signed agreement to purchase the property. We looked forward to the spring thaw when we could really get started making our dream a reality.

Just two weeks later, that all changed. We learned that the proposed route for the Atlantic Coast Pipeline had moved and was now coming directly through the very subdivision that contained our property! The pipeline was now slated to cut through the wooded common area adjacent to our property and from there would continue directly through the middle of this beautiful "eco-village." All those covenants put in place to make sure that the pristine beauty of the neighborhood was preserved would be no match for the huge scar to be ripped through its heart. If the pipeline came through, this was no longer a place we wanted to live, no longer a place we felt safe investing our money. With great regret, we asked for and received a release from our contract to purchase.

We are back to square one. We would still love to build our home in Nelson County, and in Horizons Village if possible. But right now, our plans are on hold until we know where the pipeline will run, because if the pipeline can come through the national forest, through the Wintergreen resort, through the Horizons Village, then no place is safe.

—Cathy Mohn

## Appendix G. WILDLIFE KNOWN TO LIVE IN HORIZONS VILLAGE

### *Mammals*

- bats
- black bears
- bobcats
- coyotes
- eastern cougars
- fishers
- groundhogs
- moles
- opossums
- rabbits
- raccoons
- red foxes
- squirrels
- voles
- white tailed deer

### *Amphibians*

- Blue Ridge salamanders
- grey tree frogs
- Eastern red-backed salamanders
- mole salamanders
- other salamanders
- toads

### *Birds*

- barred owls
- blue herons
- bluejays
- bluebirds
- cardinals
- chickadees
- goldfinches
- indigo buntings
- pileated woodpeckers
- red-bellied woodpeckers
- red-tailed hawks
- ruby-throated hummingbirds
- scarlet tanagers
- tufted titmice
- turkeys
- warblers
- wood thrushes

### *Pollenators/Bees*

- carpenter bees
- digger bees
- leafcutter bees
- mason bees

### *Reptiles*

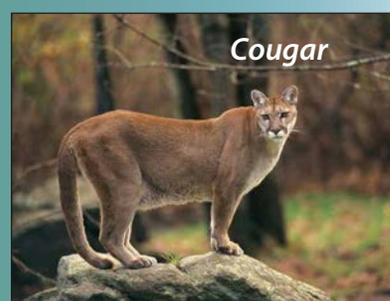
- black snakes
- copperhead snakes
- corn snakes
- eastern box turtles
- garden snakes
- lizards
- rat snakes
- rattlesnakes
- ringed snakes
- skinks
- snapping turtles

### *Other*

- beetles
- cecropia moths
- crayfish
- dragonflies
- luna moths
- male Melissa blue butterflies
- meadow fritillary butterflies
- monarch butterflies
- mourning cloak moths
- polygonia moths
- polyphemus moths
- swallowtail butterflies
- tobacco moths
- viceroy butterflies



## Appendix H. PICTURES OF WILDLIFE IN HORIZONS VILLAGE



## Appendix H. PICTURES OF WILDLIFE IN HORIZONS VILLAGE



*Black Snake*



*Lizard*



*Red-Backed Salamander*



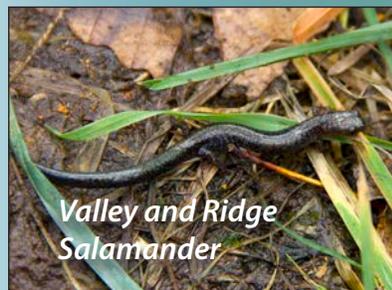
*Bat*



*Frog Eggs*



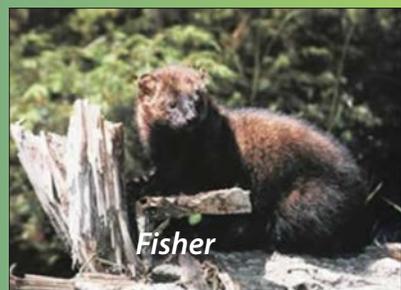
*Luna Moth*



*Valley and Ridge Salamander*



*Raccoon*



*Fisher*



*Green Tree Frog*



*Mourning Cloak Moth*



*Polygonia Moth*

“The pipeline would threaten the habitat of the endangered species, including Cow Knob Salamander, James spiny mussel, Indiana Bat, Northern Long-Eared bat, and Virginia Big-Eared Bat . . . construction of the pipeline would fragment habitat, isolate populations, and increase forest edge thereby threatening the survival of populations of the wildlife species that make the George Washington National Forest special.”

—WildVirginia.org

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# Endnotes

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<sup>1</sup>Calculation based on information from the Nelson County VA GIS Parcel Viewer. As of March 26, 2015: <http://www.nelsoncountygis.org>

<sup>2</sup>Virginia Department of Mines Minerals and Energy, “Landslides,” web page, copyright 2012. As of March 26, 2015: <http://www.dmme.virginia.gov/dgmr/landslides.shtml>

<sup>3</sup>Virginia Department of Emergency Management, “Commonwealth of Virginia Hazard Mitigation Plan,” web page, copyright 2012. As of March 26, 2015: <http://www.vaemergency.gov/em-community/recovery/haz-mit-plans>

<sup>4</sup>Virginia Department of Mines Minerals and Energy, “Landslides,” web page, copyright 2012. As of March 26, 2015: <http://www.dmme.virginia.gov/dgmr/landslides.shtml>

<sup>5</sup>Alyson Sappington, Thomas Jefferson Soil and Water Conservation District, “Letter to Kimberly Bose, Secretary Federal Energy Regulatory Commission,” dated December 5, 2014.

<sup>6</sup>Wikipedia, “Orographic Lift,” last modified on January 26, 2015. As of March 26, 2015: [http://en.wikipedia.org/wiki/Orographic\\_lift](http://en.wikipedia.org/wiki/Orographic_lift)

<sup>7</sup>Virginia Department of Emergency Management, “Commonwealth of Virginia Hazard Mitigation Plan,” web page, copyright 2012. As of March 26, 2015: <http://www.vaemergency.gov/em-community/recovery/haz-mit-plans>

<sup>8</sup>Virginia Department of Emergency Management, “Commonwealth of Virginia Hazard Mitigation Plan,” web page, copyright 2012. As of March 26, 2015: <http://www.vaemergency.gov/em-community/recovery/haz-mit-plans>

<sup>9</sup>Virginia Department of Emergency Management, “Commonwealth of Virginia Hazard Mitigation Plan,” web page, copyright 2012. As of March 26, 2015: <http://www.vaemergency.gov/em-community/recovery/haz-mit-plans>

<sup>10</sup>Rick Webb, “Pipeline Across the Allegheny Highlands: Wild Landscape at Risk,” presentation, October 28, 2014. As of March 26, 2015: [https://dl.dropboxusercontent.com/u/21393847/Pipeline\\_Across\\_the\\_Allegheny\\_Highlands\\_Annotated\\_10-28-14.pdf](https://dl.dropboxusercontent.com/u/21393847/Pipeline_Across_the_Allegheny_Highlands_Annotated_10-28-14.pdf)

<sup>11</sup>West Virginia Department of Environmental Protection, “Consent Order Issued Under the Water Pollution Control Act West Virginia Code, Chapter 22, Article 11 and the Groundwater Protection Act West Virginia Code, Chapter 22, Article 12,” October 2, 2014. As of March 26, 2015: <http://www.dep.wv.gov/pio/Documents/Settlements%20and%20Orders/DOMINION%20TRANSMISSION%20INC.pdf>

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# Endnotes

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<sup>12</sup>Alyson Sappington, Thomas Jefferson Soil and Water Conservation District, “Letter to Kimberly Bose, Secretary Federal Energy Regulatory Commission,” dated December 5, 2014.

<sup>13</sup>Judy L. Meyer and Byron J. Freeman, “Water Resources Research Grant Proposal: Effects of Sedimentation on Biodiversity in Rivers and Streams of the Southeastern United States,” web page, last updated March 23, 2005. As of March 26, 2015: <http://water.usgs.gov/wrri/97grants/ga97sei2.htm>

<sup>14</sup>Judy L. Meyer and Byron J. Freeman, “Water Resources Research Grant Proposal: Effects of Sedimentation on Biodiversity in Rivers and Streams of the Southeastern United States,” web page, last updated March 23, 2005. As of March 26, 2015: <http://water.usgs.gov/wrri/97grants/ga97sei2.htm>

<sup>15</sup>Judy L. Meyer and Byron J. Freeman, “Water Resources Research Grant Proposal: Effects of Sedimentation on Biodiversity in Rivers and Streams of the Southeastern United States,” web page, last updated March 23, 2005. As of March 26, 2015: <http://water.usgs.gov/wrri/97grants/ga97sei2.htm>

<sup>16</sup>Judy L. Meyer and Byron J. Freeman, “Water Resources Research Grant Proposal: Effects of Sedimentation on Biodiversity in Rivers and Streams of the Southeastern United States,” web page, last updated March 23, 2005. As of March 26, 2015: <http://water.usgs.gov/wrri/97grants/ga97sei2.htm>

<sup>17</sup>Green Lands Class, University of Virginia, *Green Infrastructure Strategies for Nelson County Virginia*, December 16, 2010. As of March 26, 2015: [http://www.gicinc.org/PDFs/GreenLands\\_UVA\\_Nelson\\_Report.FINAL\\_web.pdf](http://www.gicinc.org/PDFs/GreenLands_UVA_Nelson_Report.FINAL_web.pdf)

<sup>18</sup>Nelson County, Virginia, Skeo Solutions, the Green Infrastructure Center, and the University of Virginia, *Healthy Watersheds, Healthy Communities: The Nelson County Stewardship Guide for Residents, Businesses, Communities and Government*, undated. As of March 26, 2015: [http://www.gicinc.org/PDFs/Nelson\\_Stewardship\\_Guide.pdf](http://www.gicinc.org/PDFs/Nelson_Stewardship_Guide.pdf)

<sup>19</sup>Leccese et al., 2004.

<sup>20</sup>Green Lands Class, University of Virginia, *Green Infrastructure Strategies for Nelson County Virginia*, December 16, 2010. As of March 26, 2015: [http://www.gicinc.org/PDFs/GreenLands\\_UVA\\_Nelson\\_Report.FINAL\\_web.pdf](http://www.gicinc.org/PDFs/GreenLands_UVA_Nelson_Report.FINAL_web.pdf)

<sup>21</sup>U.S. Department of the Interior, U.S. Geological Survey, “Hydrologic Response in Well 27F2 SOW 019 to Worldwide Earthquakes,” web page, last modified June 24, 2014. As of March 26, 2015: <http://va.water.usgs.gov/earthquakes/index.htm>

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# Endnotes

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<sup>22</sup>Judy L. Meyer and Byron J. Freeman, “Water Resources Research Grant Proposal: Effects of Sedimentation on Biodiversity in Rivers and Streams of the Southeastern United States,” web page, last updated March 23, 2005. As of March 26, 2015: <http://water.usgs.gov/wrri/97grants/ga97sei2.htm>

<sup>23</sup>Kevin Bonsor, “How Fire Engines Work,” HowStuffWorks.com, undated. As of March 26, 2015: <http://science.howstuffworks.com/transport/engines-equipment/fire-engine2.htm/printable>

<sup>24</sup>Mark J. Stephens, “A Model for Sizing High Consequence Areas Associated with Natural Gas Pipelines,” C-FER Report 99068, C-FER Technologies, Alberta, Canada, October 2000.

<sup>25</sup>Pipeline Association for Public Awareness, *Pipeline Emergency Response Guidelines*, 2014. As of March 26, 2015: <http://www.pipelineawareness.org/wp-content/uploads/2014/09/2014-Pipeline-Emergency-Response-Guidelines.pdf>

<sup>26</sup>Richie Davis, “Pipeline Put on Your Property May Be Mortgage Violation,” *The Recorder*, June 18, 2014. As of March 26, 2015: <http://www.recorder.com/news/12178349-95/pipeline-put-on-your-property-may-be-mortgage-violation>

<sup>27</sup>Virginia Department of Game and Inland Fisheries, “Blue Ridge Red Salamander (*Pseudotriton ruber nitidus*),” web page, copyright 2015. As of March, 25, 2015: <http://www.dgif.virginia.gov/wildlife/information/?s=020066>

<sup>27</sup>Horizons Village Property Owners Association, Covenants, Article III, Section 3: “Building Setback Lines—Setback lines shall be a seventy-five foot visual screen of natural vegetation. . . . All buildings and above-ground improvements shall be screened from sight from subdivision roads and adjoining Lot(s) by a visual screen of natural vegetation.”

<sup>29</sup>Horizons Village Property Owners Association Covenants, Article II, Section 2: “Paths—There shall be a ten (10) foot wide right-of-way/easement along the boundary of each Lot within Horizons Village subdivision. There shall be a hundred (100) foot wide right-of-way/easement along the inner creeks and waterways within the Property, generally consisting of approximately fifty-feet (50) on each side of the waterways unless otherwise specified. There shall be a fifty-foot (50) right-of-way/easement along waterways that form the outer boundaries of the Property.”

<sup>30</sup>Horizons Village Property Owners Association Covenants, Article III, Section 4: “Protection of Animals—Horizons Village Subdivision is intended to be a sanctuary for all residents, including wildlife. No hunting, fishing, or destruction of native animals (including, without limitation, opossum, deer, squirrels, beavers, etc.) is permitted.”

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# Endnotes

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<sup>31</sup>Horizons Village Property Owners Association Covenants, Article III, Section 6: “NUISANCE— No use or discharge of toxic chemicals, insecticides or other poisons will be permitted on or in the land, air or waters, including ground water. ‘Natural predators’ and certified ‘organic’ methods of pest and weed control may be used.”

<sup>32</sup>Atlantic Coast Pipeline, LLC, “Atlantic Coast Pipeline Docket No. PF15-6-000,” and Dominion Transmission, Inc., “Supply Header Project Docket No. PF15-5-000 Resource Report 1 General Project Description,” December 2014: “1.4.1.1 Pipeline Rights-of-Way—For the ACP AP-1 mainline, the construction corridor in non-agricultural uplands will measure 125 feet in width, with a 40-foot-wide spoil side and an 85-foot-wide working side. In agricultural areas, where full width topsoil segregation is implemented, an additional 25 feet of temporary construction workspace will be needed on the working side of the corridor to provide sufficient space to store topsoil. In wetlands, the width of the construction right-of-way will be reduced to 75 feet, with 25 feet on the spoil side and 50 feet on the working side. Following construction, a 75-foot-wide permanent easement will be maintained for operation of the pipeline.”

<sup>33</sup>Virginia Statewide Assessment of Forest Resources, 2010, p. 107, as quoted in Green Lands Class, University of Virginia, *Green Infrastructure Strategies for Nelson County Virginia*, December 16, 2010. As of March 26, 2015: [http://www.gicinc.org/PDFs/GreenLands\\_UVA\\_Nelson\\_Report.FINAL\\_web.pdf](http://www.gicinc.org/PDFs/GreenLands_UVA_Nelson_Report.FINAL_web.pdf).

<sup>34</sup>William F. Fagan, Robert Stephen Cantrell, and Chris Cosner, “How Habitat Edges Change Species Interactions,” *The American Naturalist*, Vol. 153, No. 2, February 1999.

<sup>35</sup>Carol A. Kearns, David W. Inouye, and Nickolas M. Waser, “Endangered Mutualisms: The Conservation of Plant-Pollinator Interactions,” *Annual Review of Ecology, Evolution, and Systematics*, Vol. 29, pp. 83–112, 1998.

<sup>36</sup>Emily Gosden, “Bees and the Crops They Pollinate Are at Risk from Climate Change,” *The Daily Telegraph*, March 29, 2014. As of March 25, 2015: <http://www.telegraph.co.uk/news/earth/earthnews/10730667/Bees-and-the-crops-they-pollinate-are-at-risk-from-climate-change-IPCC-report-to-warn.html>

<sup>37</sup>Michael Martz, “Augusta, Nelson County Residents Won’t Back Down over Atlantic Coast Pipeline,” *The Roanoke Times*, January 4, 2015. As of March 26, 2015: [http://www.roanoke.com/news/virginia/augusta-nelson-county-residents-won-t-back-down-over-atlantic/article\\_483cc157-2633-5136-9685-84eb71824868.html](http://www.roanoke.com/news/virginia/augusta-nelson-county-residents-won-t-back-down-over-atlantic/article_483cc157-2633-5136-9685-84eb71824868.html)

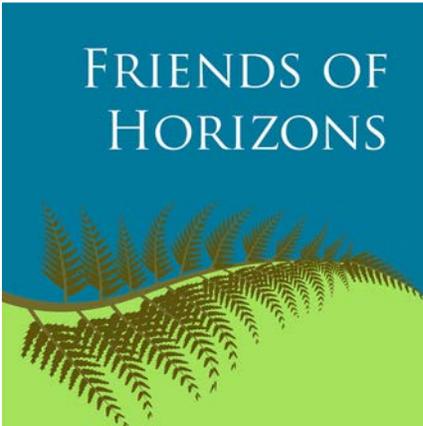
THE APPALACHIAN TRAIL SOUTH ALTERNATE ROUTE:

# *IMPACT ON HORIZONS VILLAGE*

**Atlantic Coast Pipeline Impact Assessment**  
Prepared for the Federal Energy Regulatory Commission

**Docket Reference: PF15-6**

Prepared by Friends of Horizons  
March 26, 2015  
[friends.horizons@gmail.com](mailto:friends.horizons@gmail.com)  
[friendsofhorizons.org](http://friendsofhorizons.org)



FRIENDS OF  
HORIZONS

# **ATTACHMENT 3**

## Horizons Village Property Owners Association

P.O. Box 122  
Nellysford, Virginia 22958

March 14, 2016

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re: Errors in Atlantic Coast Pipeline, LLC's submission to FERC on March 10, 2016 (Docket #CF15-554)

Dear Ms. Bose:

We are writing to inform you that Atlantic Coast Pipeline, LLC (ACP) provided erroneous information in its March 10, 2016, response to question #156 of your December 4, 2015, data request. ACP misrepresented the area of the Spruce Creek Tributary Conservation Site in Nelson County, Virginia, and incorrectly stated that its Horizons Village route adjustments avoid this conservation site.

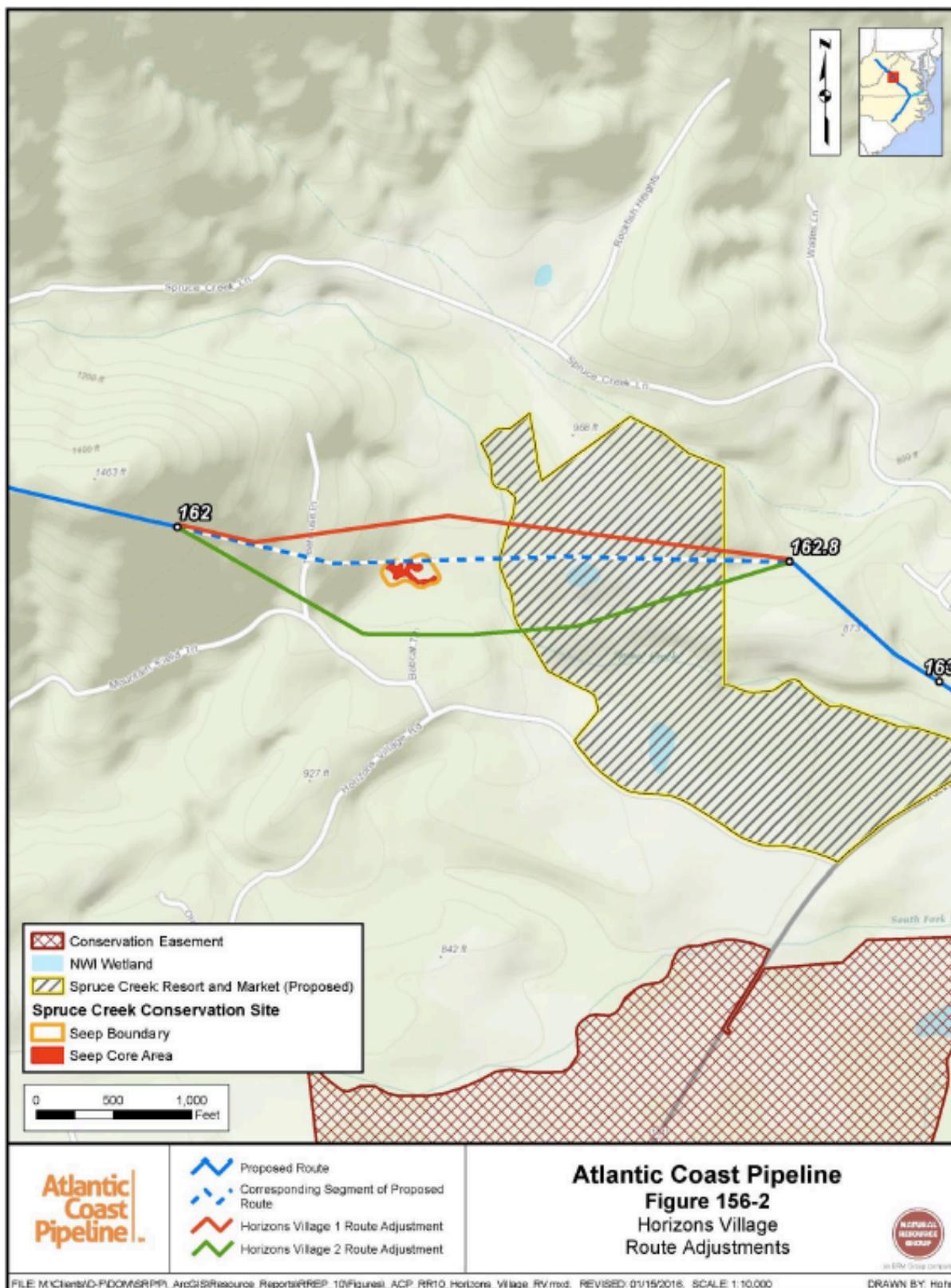
ACP's response concerning the Spruce Creek Tributary Conservation Site focused on two alternative routes around the core wetland seepage area of this Virginia conservation site.<sup>1</sup> In Figure 156-2, "Horizons Village Route Adjustments" (reproduced the next page), ACP identifies the Spruce Creek Tributary Conservation Site as a small area in the middle of the two Horizons Village alternative routes.

However, ACP's map reflects only the *wetland* area of the site, not the complete conservation site boundary identified by the Virginia Department of Conservation and Recreation (DCR) as necessary to preserve the wetland.<sup>2</sup>

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<sup>1</sup> Atlantic Coast Pipeline, LLC and Dominion Transmission, Inc., "Docket Nos. CP15-554-000 & CP15-555-000 Response to Data Request Dated December 4, 2015," March 10, 2016, p. 46.

<sup>2</sup> Virginia Department of Conservation and Recreation letter to FERC, "Additional Natural Heritage Information – Atlantic Coast Pipeline (Docket CP15-554-000)," October 9, 2015.



Map of Horizons Village Route Adjustments, provided by ACP on p. 47 of its March 10, 2016, data response.

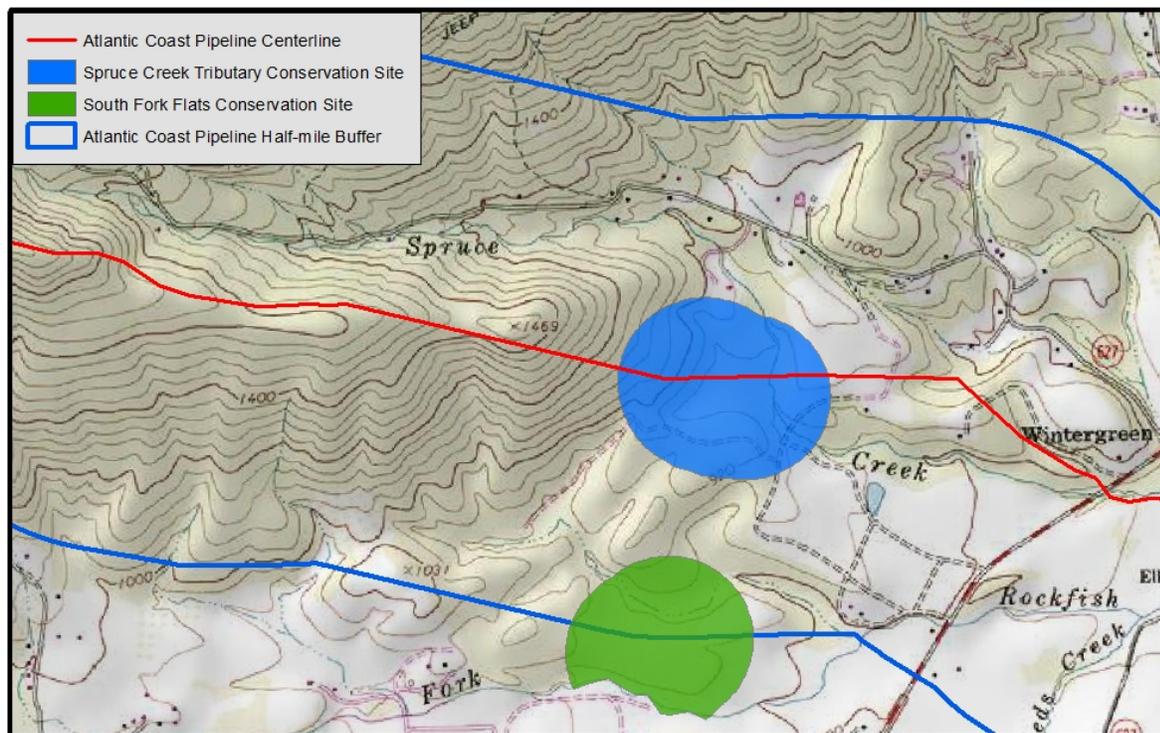
In its response to question #156, ACP claimed—twice—that its proposed route adjustments avoid the Spruce Creek Tributary Conservation Site:

- “Additionally, as discussed below, Atlantic identified and evaluated two route adjustments, the Horizons Village 1 and Horizons Village 2 Route Adjustments, **which avoids the Spruce Creek Conservation Site.**” (p. 46, emphasis added)
- “While the environmental impacts associated with the proposed route and the Horizons Village 1 and 2 Route Adjustments are otherwise nearly identical, **both route adjustments avoid crossing the Spruce Creek Conservation Site.**” (p. 49 emphasis added)

These assertions are false and misleading. The route adjustments **do not** avoid crossing the Spruce Creek Tributary Conservation Site.

The map below depicts the *actual* Spruce Creek Tributary Conservation Site boundaries, as identified by the Virginia DCR in its October 9, 2015, submission to FERC.

#### Spruce Creek Tributary & South Fork Flats Conservation Sites



Map of the Spruce Creek Tributary Conservation Site, provided by Virginia DCR.

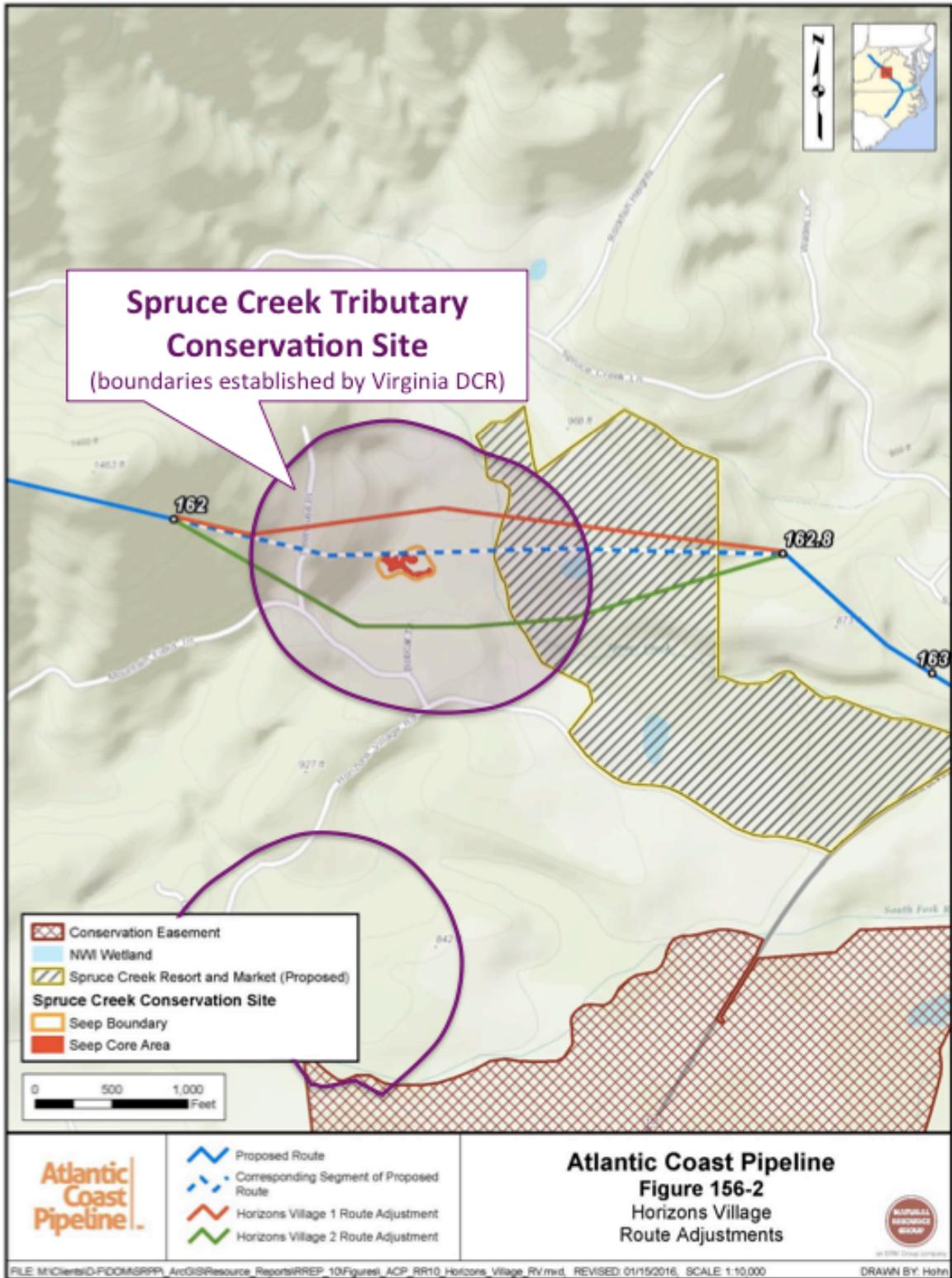
Virginia DCR stated that a buffer of 250 meters around identified wetland resources is the minimum standard to protect against threats, such as clear-cutting, soil erosion, siltation of wetlands, onsite hydrological disturbances, and invasive species. According to the Virginia DCR, the Spruce Creek Tributary Conservation Site, which includes springs and wetlands, requires this standard 250-meter buffer area for preservation of the natural resource.

ACP's response to question #156 also includes the following statements related to meetings and discussions with the Virginia DCR about the Spruce Creek Tributary Conservation Site:

- “The VDCR recommended that Atlantic route the proposed AP-1 mainline to avoid impacts to the conservation site. The Horizons Village 1 and 2 Route Adjustments are similar to the proposed route, but pass approximately 210 feet north and 310 feet south, respectively, of the conservation site.” (p. 46)
- “Atlantic met with staff from the VDCR on December 15, 2015 to review the Horizons Village 1 and 2 Route Adjustments. Because the Horizons Village 2 Route Adjustment is located further from and is down-gradient of the conservation site, VDCR staff indicated a preference for Horizons Village 2 over Horizons Village 1.” (p. 46)

Once again, these statements are inaccurate: ACP is apparently confusing the entire conservation site defined by Virginia DCR with the core wetland seepage area. Although the ACP team met with Virginia's DCR team to discuss alternatives to avoid the conservation site, ACP's March 10 response does not acknowledge this 250-meter buffer zone that is always included as part of conservation sites in Virginia.

To demonstrate ACP's apparent misunderstanding of Virginia DCR's definition of the “conservation site,” the map below overlays Virginia DCR's boundaries for the Spruce Creek Tributary Conservation Site on the map of the Horizons Village alternative routes provided by ACP in its response to question #156.



Overlay of Virginia DCR's boundaries of the Spruce Creek Tributary Conservation Site with ACP's map of Horizons Village route adjustments.

This overlay map clearly depicts that all of ACP's proposed Horizons Village routes bisect the Spruce Creek Tributary Conservation Site and therefore fail to comply with requests from both the Commonwealth of Virginia and FERC that the ACP avoid the conservation site.

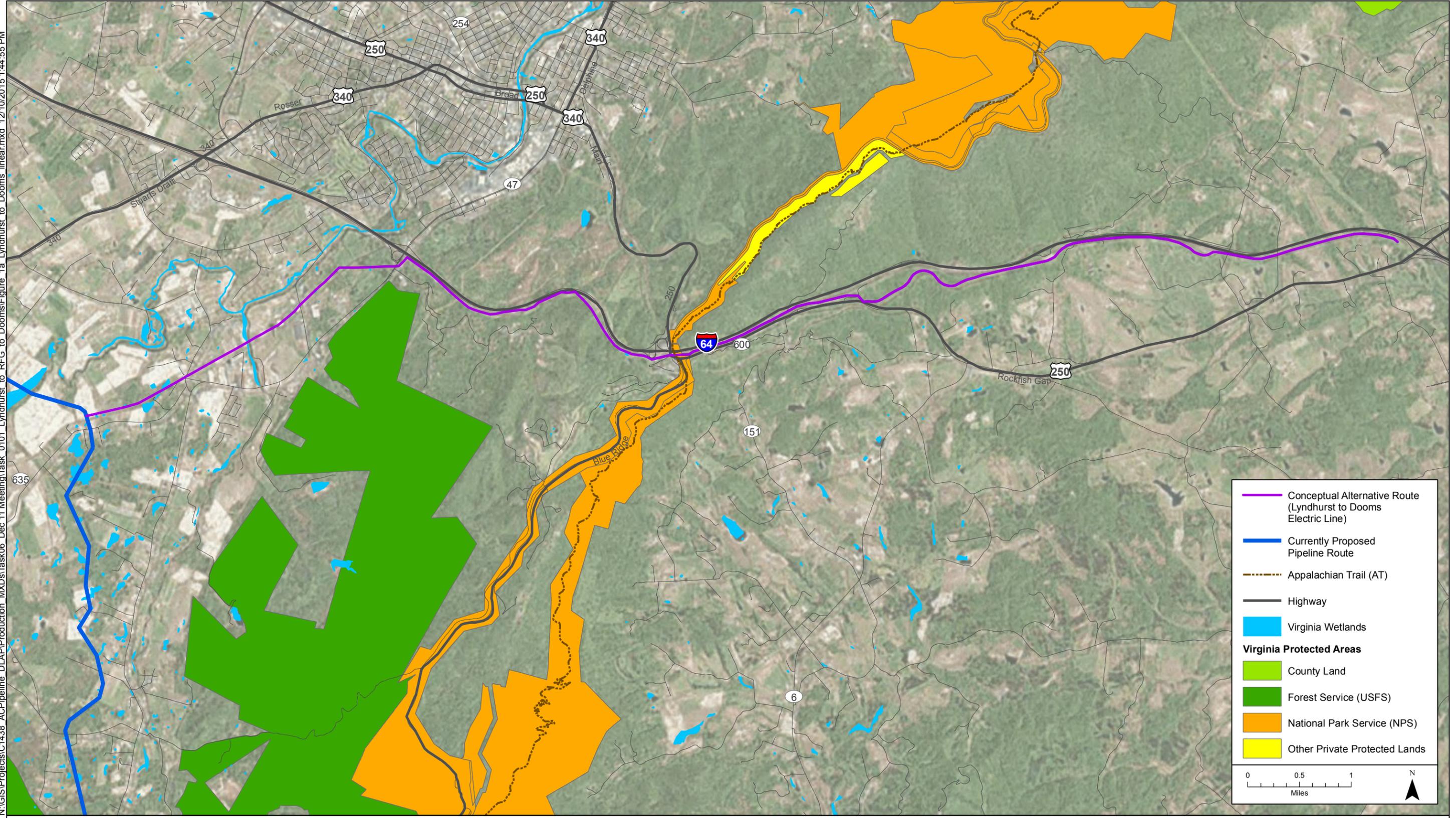
The Horizons Village Property Owners Association urges FERC to ensure that these requests to avoid disturbing the Spruce Creek Tributary Conservation Site are fully addressed and honored by ACP.

Sincerely,

Horizons Village Property Owners Association

# **ATTACHMENT 4**

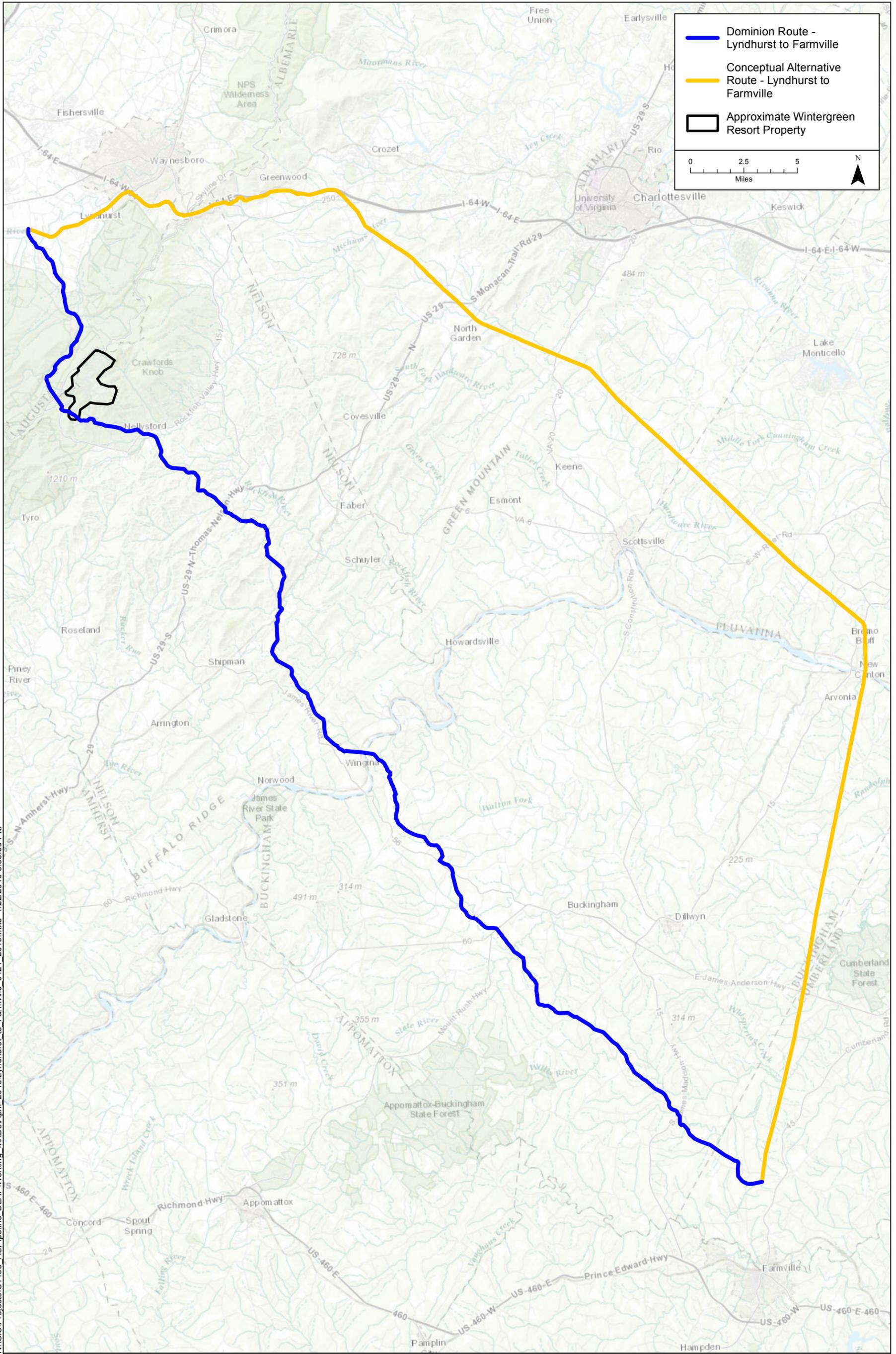
N:\GIS\Projects\C1438\_AC\Pipeline\_DLAP\Production\_MXD\Task06\_Dec 11 Meeting\Task 0101\_Lyndhurst to RFG to Dooms\Figure 1a\_Lyndhurst to Dooms\_linear.mxd 12/10/2015 1:44:55 PM



Sources:  
USDA FSA, NAIP, 2014.

Figure 1a.  
Lyndhurst to Dooms Electric Line

# **ATTACHMENT 5**



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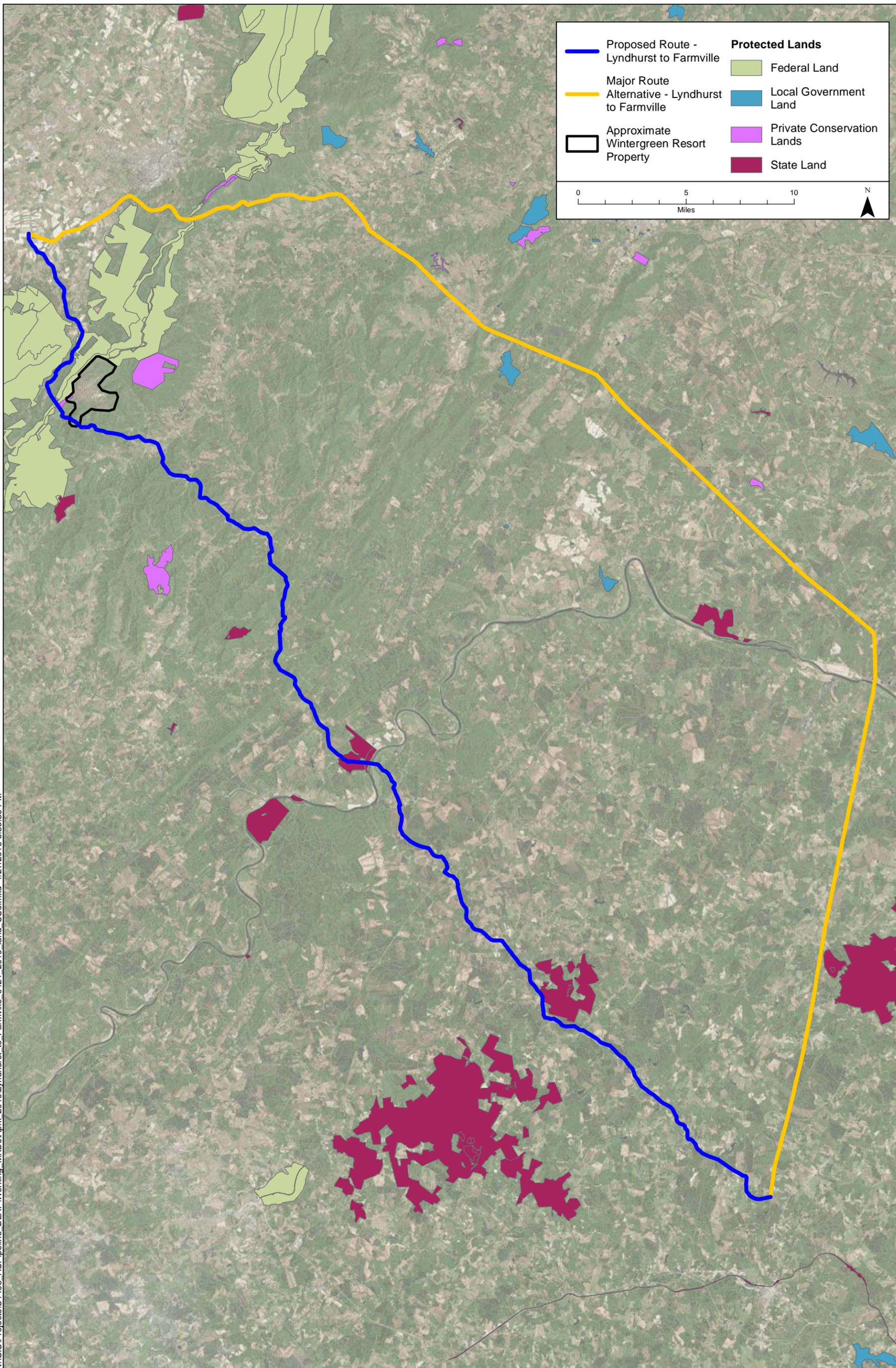


Basemap: Esri World Topo Map

**Figure 1.**  
Lyndhurst to Farmville

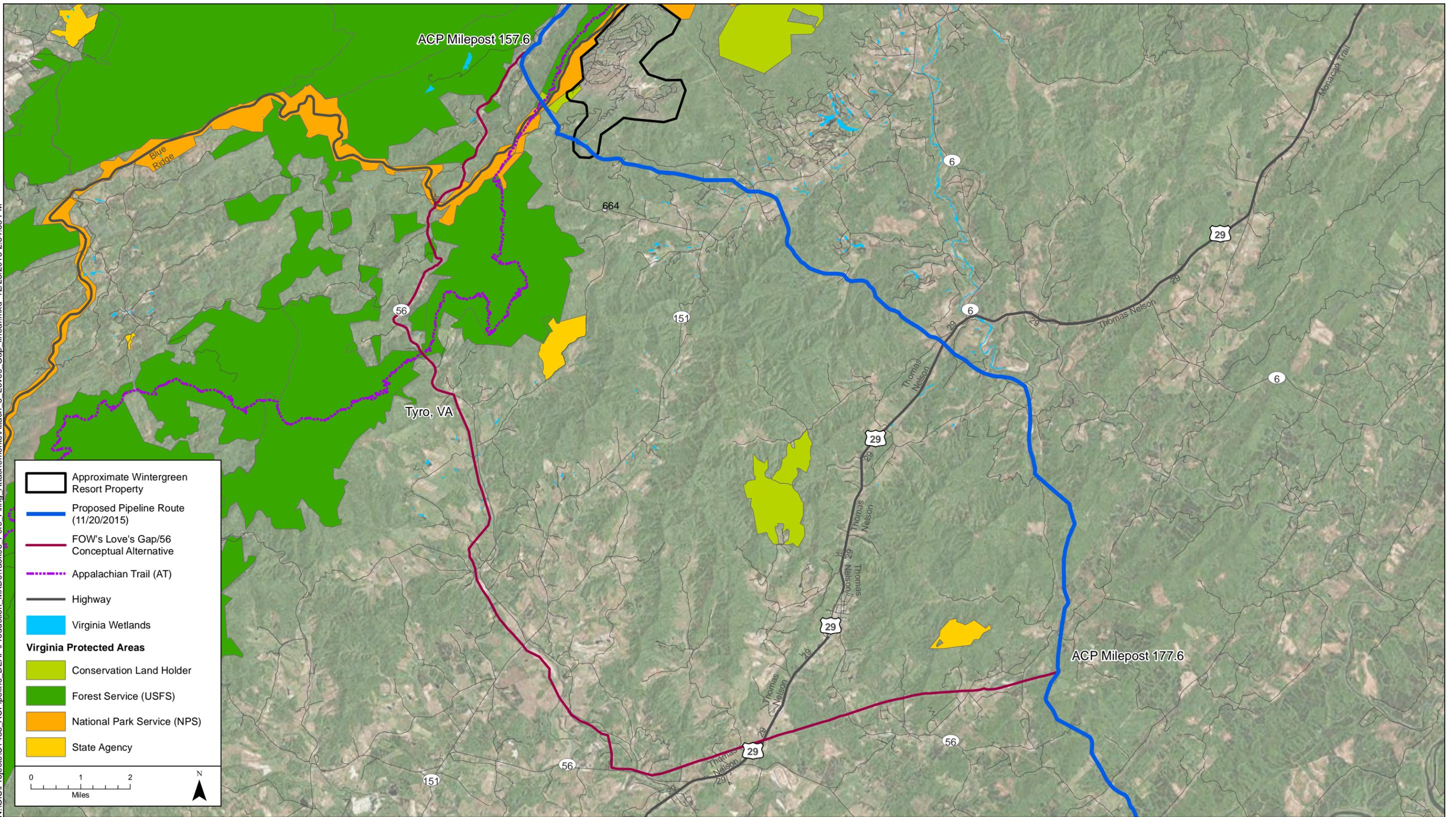
# **ATTACHMENT 5A**

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# **ATTACHMENT 6**

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**Legend**

- Approximate Wintergreen Resort Property
- Proposed Pipeline Route (11/20/2015)
- FOW's Love's Gap/56 Conceptual Alternative
- Appalachian Trail (AT)
- Highway
- Virginia Wetlands
- Virginia Protected Areas**
- Conservation Land Holder
- Forest Service (USFS)
- National Park Service (NPS)
- State Agency

0 1 2  
Miles

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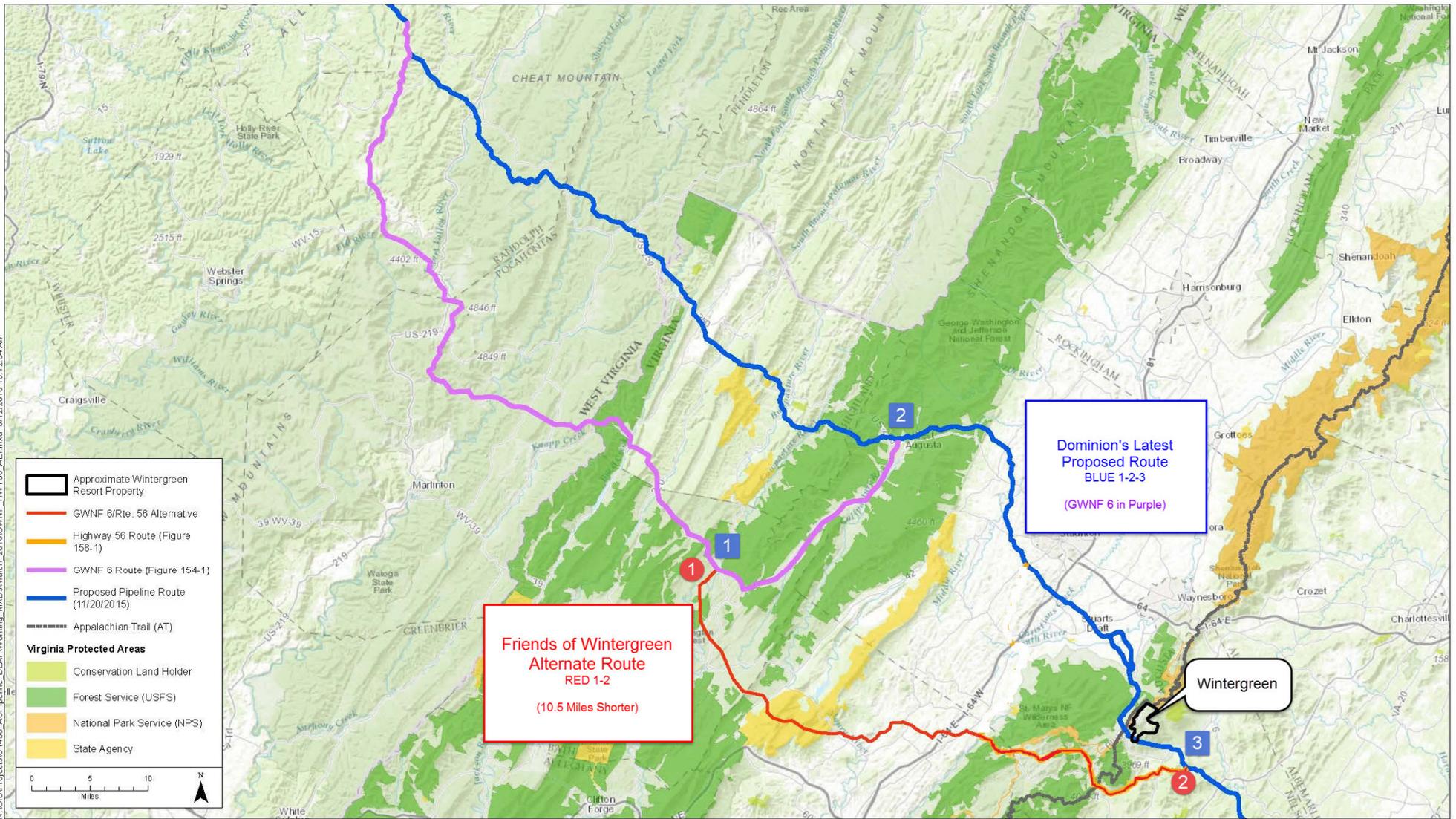


Sources:  
USDA FSA, NAIP, 2014.

**Attachment 5.**  
ACP Proposed Route and FOW's Love's Gap/56 Route Alternative

# **ATTACHMENT 7**

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Sources:  
USDA FSA, NAIP, 2014.

**Figure X.**  
ACP GWNF 6/Rte. 56 Alternative

# **ATTACHMENT 8**

TABLE 1  
Proposed Route Variations

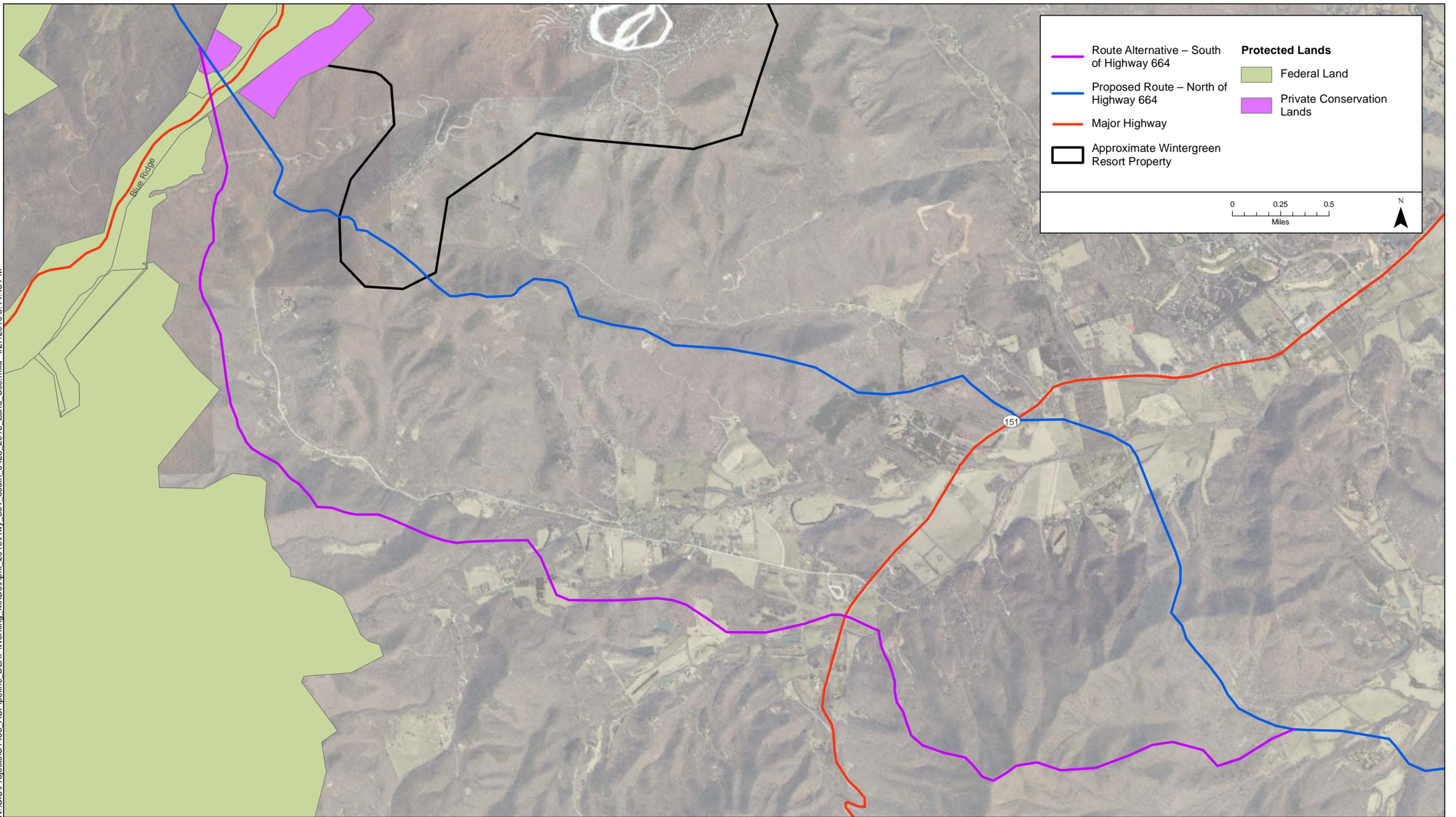
Features	Unit	GWNF 6 Route	GWNF 6/ Rte. 56 Alternative
Length (total)	miles	73.19	62.41
Adjacent to existing linear corridor facilities (total)	miles	0.75	20.67
Interstate or State/Commonwealth highways crossed	number	6	3
Other State/Commonwealth or local roads crossed	number	53	45
Parcels affected	number	328	250
Residences within 660 feet of the pipeline centerline	number	366	141
Residences within 125 feet of the pipeline centerline	number	18	8
Residences within 50 feet of the pipeline centerline	number	2	4
Wetlands crossed – Forested/Shrub Wetland	miles	0.16	0.04
Wetlands crossed – Pond	miles	0.03	0.02
Wetlands crossed – Riverine	miles	0.06	0.09
Wetlands crossed – Emergent Wetland	miles	0.35	0.02
Intermittent streams/rivers crossed	number	87	65
Perennial streams/rivers crossed	number	34	21
Land use types crossed - forested	miles	39.74	40.74
Land use types crossed - agricultural	miles	29.41	16.70
National Register of Historic Places within 660 feet	number	3	1
Protected Federal lands crossed	miles	8.38	3.69
Protected State lands crossed	miles	0.00	6.99
Protected Private Conservation lands crossed	miles	0.12	0.00
U.S. Geological Survey karst topography crossed	miles	25.19	19.48
U.S. Geological Survey Soil Survey (SSURGO) soils crossed			
Shallow bedrock <sup>a</sup>	miles	6.11	13.79
Highly erodible by wind <sup>b</sup>	miles	32.06	38.74
Length of steep slope crossed (greater than 30 percent)	miles	8.44	23.05
Moderate to high landslide incidence/susceptibility areas crossed	miles	65.27	55.34
Conservation easements crossed	miles	4.07	6.17
VDCR conservation easements crossed	miles	4.06	7.25
VDCR conservation lands crossed	miles	8.45	10.62

<sup>a</sup> Includes soils that have bedrock within 60 inches of the soil surface (SSURGO brockdepmi <= 60) .

<sup>b</sup> Includes soils with Wind Erodibility Group classification of one or two (SSURGO erochl = Class 1 or Class 2).

# **ATTACHMENT 9**

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**Figure 1.**  
Highway 664 Route Alternative

# **ATTACHMENT 10**

TABLE 2  
Comparison of Dominion Proposed Route and Highway 664 South Route

		See Figure 1 for Proposed and Current Routes					
		Dominion Proposed Route			Highway 664 South Route		
Features	Unit	West of Highway 151	East of Highway 151	Total	West of Highway 151	East of Highway 151	Total
Length (total)	miles	5.24	2.45	7.69	5.64	2.96	8.59
Adjacent to existing linear corridor facilities (total)	miles	0.00	0.00	0.00	0.00	0.00	0.00
Interstate or State/Commonwealth highways crossed	number	1	0	1	1	0	1
Other State/Commonwealth or local roads crossed <sup>a</sup>	number	5	1	7	2	1	4
Parcels affected	number	33	12	45	48	7	55
Residences within 660 feet of the pipeline centerline	number	25	8	33	16	6	22
Residences within 125 feet of the pipeline centerline	number	0	0	0	0	0	0
Residences within 50 feet of the pipeline centerline	number	0	0	0	0	0	0
Wetlands crossed – Forested/Shrub Wetland	miles	0.00	0.00	0.00	0.00	0.00	0.00
Wetlands crossed – Pond	miles	0.00	0.00	0.00	0.00	0.00	0.00
Wetlands crossed – Riverine	miles	0.00	0.00	0.00	0.00	0.00	0.00
Wetlands crossed – Emergent Wetland	miles	0.00	0.00	0.00	0.00	0.00	0.00
Intermittent streams/rivers crossed	number	2	4	6	5	1	6
Perennial streams/rivers crossed	number	0	2	2	2	1	3
Land use types crossed - forested	miles	4.96	1.75	6.71	4.68	2.73	7.41
Land use types crossed - agricultural	miles	0.18	0.40	0.58	0.69	0.16	0.85
National Register of Historic Places within 660 feet	number	0	1	1	0	0	0
Protected Federal lands crossed	miles	0.14	0.00	0.14	0.20	0.00	0.20
Protected State lands crossed	miles	0.00	0.00	0.00	0.00	0.00	0.00
Protected Private Conservation lands crossed	miles	0.12	0.00	0.12	0.07	0.00	0.07
U.S. Geological Survey karst topography crossed	miles	0.00	0.00	0.00	0.00	0.00	0.00
U.S. Geological Survey Soil Survey (SSURGO) soils crossed							
Shallow bedrock <sup>b</sup>	miles	0.23	0.00	0.23	0.00	0.00	0.00
Highly erodible by wind <sup>c</sup>	miles	0.00	0.00	0.00	0.00	0.00	0.00
Length of steep slope crossed (greater than 30 percent)	miles	2.00	0.49	2.49	2.27	1.33	3.61
Moderate to high landslide incidence/susceptibility areas crossed	miles	5.25	2.44	7.69	5.64	2.96	8.59
Conservation easements crossed	miles	0.00	0.00	0.00	0.00	0.00	0.00
VDCR conservation easements crossed	miles	0.00	0.00	0.00	0.00	0.00	0.00
VDCR conservation lands crossed	miles	0.23	0.00	0.23	0.27	0.00	0.27

**a** The total includes highway 151 itself.

**b** Includes soils that have bedrock within 60 inches of the soil surface (SSURGO brockdepmi <= 60) .

**c** Includes soils with Wind Erodibility Group classification of one or two (SSURGO eroel = Class 1 or Class 2).

# **ATTACHMENT 11**

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Atlantic Coast Pipeline, LLC

Docket No. CP15-554-000

DECLARATION OF BRYAN MELAN

I, Bryan Melan, do hereby declare, affirm, and swear as follows:

1. I am over eighteen years of age and am competent to testify about the matters stated herein.
2. I am the Principal Engineer and Owner of Tide Water Integrity Services, L.L.C. (“Tide Water”), which specializes in consulting structural integrity engineering of pipelines and fixed production equipment. I have extensive experience in the oil and gas industry, including 39 years of experience in pipeline construction, operations, and maintenance.
3. Tide Water was retained by Friends of Wintergreen to assist in determining the constructability of route segments that can be considered as alternatives to the original and subsequently revised proposed route for the Atlantic Coast Pipeline’s (“ACP”) project (“Proposed Route”), and to analyze ACP’s description of its activities undertaken in conjunction with its Proposed Route.
4. I analyzed environmental impacts that will be created by the construction of a pipeline on both the Proposed Route and several alternative routes and concluded that there exist alternatives to certain segments of the Proposed Route that would create less environmental disturbance and safety risks. .
5. I completed a detailed evaluation of the constructability of an alternative route referred to as the Rockfish Gap/Dooms Brems (“RG/DB Route”) from the point at

which this route departs from the Proposed Route in the Lyndhurst area (Milepost 148.1) to the point where this route reaches the Dooms/Bremo electric transmission lines at Exit 107 on I-64. After reviewing a number of factors, including slope steepness, ridgeline crossings, width of available land for construction, availability of railroad rights-of-way, and location of residences and other structures, I concluded that this section of the RG/DB Route is constructible and, indeed, would impose less environmental impacts than the comparable segment on the Proposed Route.

6. I completed a detailed evaluation of the constructability of another alternative route referred to as the 664 South Route. This alternative route minimizes, and in many instances eliminates, the adverse impacts of the segment of the Proposed Route that it would replace. The 664 South Route is superior to the Proposed Route on key metrics. Indeed, significant construction and ongoing maintenance issues will be avoided with the 664 South Route. Based on my detailed analysis of the Proposed Route's trenching and laying of pipe up Piney Mountain at very steep grades, including the Alignment Sheets provided by ACP, I determined that of the 2,100 feet of the construction path up the side of Piney Mountain, approximately 1,479 feet is at a slope in excess of 40%. Other sections of this path show a slope of over 50% and as much as 64%. An additional analysis of the slope based on USGS topography shows portions of the slope as steep as 66%, 69%, 78% and 85%.
7. The trenching and laying of pipeline up Piney Mountain at very steep grades increases the risk of rock and ground slides that would be exacerbated by frequent major storm conditions in this section of the Blue Ridge Mountains that is highly susceptible to water erosion. Such risks would continue long after construction was

completed. These rock and ground slides would impact the South Fork of the Rockfish River and could potentially bury Route 664. In addition, the construction process risks serious water run-off and mountain-side deterioration issues leading to the headwaters of the Rockfish River, the James River and eventually the Chesapeake Bay. Any affected waterways on the Route 664 South Route are not major tributaries into the James River.

8. I confirmed that any side slope issues with the 664 South Route are solvable. While side slopes exist along the proposed Route 664 South alignment, these issues are manageable. The INGAA Gas Pipeline Construction guide devotes an entire Chapter (4.6) to side slope construction.<sup>1</sup> Generally, according to published literature,<sup>2</sup> side slopes are manageable with conventional equipment up to a 60% slope. A medium-sized bulldozer, such as a Caterpillar D6, performs at its optimum level up to a side slope of 40%. At steeper slopes, hydraulic excavators, a slower but effective process, must be used. I performed a detailed side slope analysis of the proposed 664 South Route alignment and evaluated over 77,000 linear feet of side slope crossing the pipeline route. The result was that 15 isolated individual instances of slopes exceeding 40% were found along this route. These locations total about 1,000 feet in aggregate of the 77,000 linear feet evaluated. No side slopes exceed 60%.

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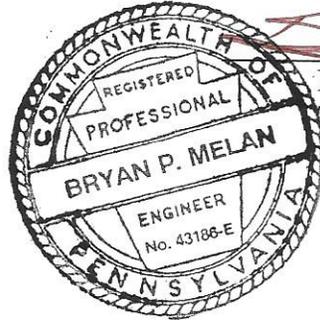
<sup>1</sup> Building Interstate Natural Gas Transmission Pipelines: A Primer - INGAA FOUNDATION REPORT 2013.01, January 2013, The INGAA Foundation Inc. 20 F Street NW Suite 450 Washington, DC 20001.

<sup>2</sup> CATERPILLAR PERFORMANCE HANDBOOK 46 - a publication by Caterpillar, Peoria, Illinois, U.S.A., JANUARY 2016; Watershed Field Management Field Manual, CHAPTER 6 - ROAD CONSTRUCTION TECHNIQUES - Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla 00153 Rome, Italy.

9. I read ACP/Dominion's statement concerning the level of activity that will occur at the Wintergreen Work Space ("WTC Work Space"); specifically, that "Once the HDD workspace is established and the rig equipment is mobilized to the site and set up, traffic specific to the HDD will be limited to pickup trucks used by drilling personnel; maintenance vehicles/equipment; and material and water and fuel deliveries (approx. 5 to 8 trucks/day)." I believe that drilling activities at this workspace will be substantially greater than represented above. The Horizontal Directional Drilling drill rig and all supporting equipment and holding ponds for the debris/cuttings will reside in this 250' X 300' area. The Horizontal Directional Drilling process involves circulating the mud, rock cuttings, dirt and debris ("the Debris") that are generated by the 4,500' long drilling process to the rig side at the "extra work space" directly across from the entrance/exit to Wintergreen Resort at the WTG Work Space. Mud pits are dug at the WTG Work Space and the exit point to collect the mud and cuttings. The Debris is then sucked into a special shale shaker tank where the cuttings are strained off and the mud is continuously returned to the drilling operation. The majority of the mud and cuttings will be handled at the rig site at the WTG Work Space. Secondary containment barriers may be added around the WTG Work Space to confine any spills. Based on my understanding of the Horizontal Directional Drilling process at the WTG Work Space, I believe ACP/Dominion's description of activities at this work space is materially understated and incomplete.

I hereby declare under penalty of perjury, that the foregoing statements are true and correct.

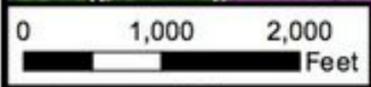
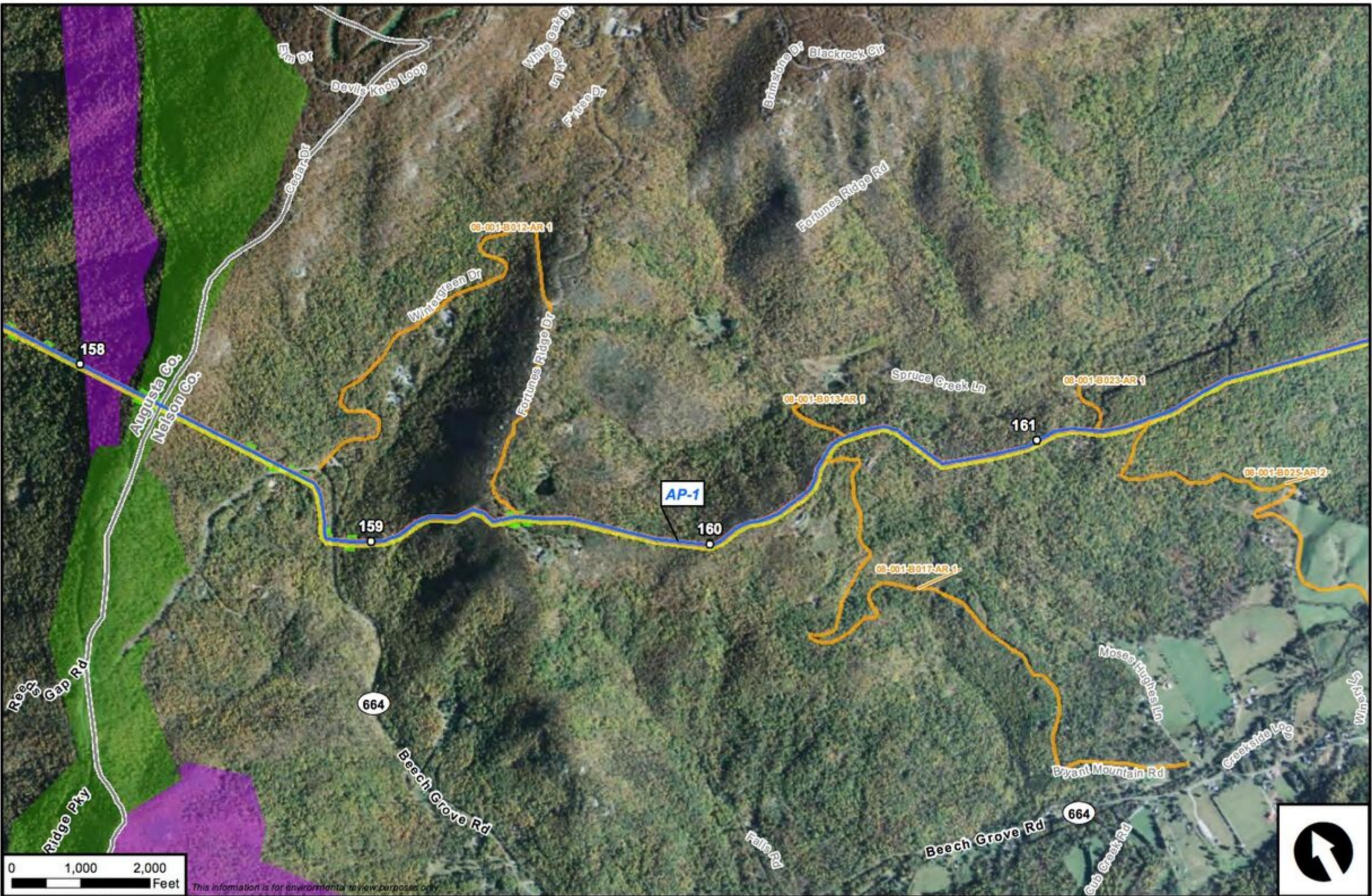
Executed on: May 13, 2016



A handwritten signature in red ink, appearing to be "Bryan Melan", written over a horizontal line.

Bryan Melan, P.E.  
Tide Water Integrity Services, LLC.

# **ATTACHMENT 12**



This information is for environmental review purposes only.



**Atlantic Coast Pipeline**

Mainline	M&R Station	Access Road
Lateral	L&R Site	<b>Federal Ownership</b>
<b>Workspace</b>	Valve Site	U.S. Forest Service
Permanent	<b>Compressor Station Layout</b>	National Park Service
Temporary	Permanent	U.S. Fish & Wildlife Service
ATWS	Temporary	National Guard

**Atlantic Coast Pipeline  
Appendix 1B  
Aerial Route Maps  
Nelson County, Virginia**



# **ATTACHMENT 13**

## Attachment 13

### PRELIMINARY QUESTIONS REGARDING CONSTRUCTION IMPACT ON WINTERGREEN AND ADJACENT PROPERTIES

#### **1. Horizontal Directional Drilling Operation and Workspaces**

Dominion documents show a 200' X 300' extra work space for HDD staging and other construction activities directly across from the entrance to Wintergreen. Moreover, in its April 15, 2016 filing, Dominion showed four Additional Temporary Work Spaces ("ATWS") on its Proposed Route from the BRP to the entrance/exit of Wintergreen, including the WTG Work Space. See Attachments 11 and 12. The following questions arise and need accurate responses from Dominion:

- How long will it take to establish the WTG Work Space?
- How long will it take to tunnel under 664/Beech Grove Road twice at the WTG Work Space?
- What size exactly and where specifically are the three ATWS (in addition to the WTG Work Space) located, what is their purpose, and how long will they be used?
- What construction activities will occur in the WTG Work Space?

Dominion indicates it will place its HDD drill rig and set up in the WTG Work Space which is the "entry point" for the HDD drill, while holding out the option that there may be dual rigs, one at the WTG Work Space and one in Augusta County. Yet its filing states there will be

only minor activities, and “approx. 5 to 8 trucks/day” at the WTG Work Space.<sup>33</sup> According to Tide Water, FOW’s pipeline construction experts, the drilling activities at the entry point will be substantially greater than Dominion has represented. The HDD drill rig and all supporting equipment and holding ponds for the debris/cuttings will reside there.<sup>34</sup> Per the attached pictures, is it possible to conduct all these drilling activities in a 250’ X 300’ area, especially since there will be a number of additional construction activities in the same space? Tide Water indicates that the HDD process involves circulating the mud, rock cuttings, dirt and debris (the “Debris”) that are generated by the 4,500’ long drilling process to the rig side at the WTG Work Space. Mud pits are dug at the WTG Work Space and the exit point to collect the mud and cuttings. The Debris is then emptied into a special shale shaker tank where the cuttings are strained off and the mud is continuously returned to the drilling operation. The majority of the mud and cuttings are handled at the rig site at the WTG Work Space. Secondary containment barriers may be added around the WTG Work Space to confine any spills.<sup>35</sup> With this understanding of the HDD drilling process at the WTG Work Space, Dominion’s description of its activities there seems to be materially inaccurate and incomplete. FOW has many questions, including:

- What is the volume of the Debris that is generated from the 4,500’ drilling process? How does it vary if dual rigs are used?

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<sup>33</sup> Response to Data Request 103, Attachment 1, p. 103a-15.

<sup>34</sup> The following link shows an actual HDD drill site: <https://www.youtube.com/watch?v=ZHCv566P8J8>. See also Attachment 14, which shows the layout for such an HDD drill rig and related apparatus.

<sup>35</sup> See the following link for a video of what happens when the HDD drill process fails to work properly: <https://www.youtube.com/watch?v=1HiBeLRsJoM>.

- How will the Debris be hauled away from the WTG Work Space? How many dump trucks and other construction trucks will it require? (Dominion's statement that it will be 5-8 pickup trucks per day appears to be inaccurate)
- The projected time for this phase of the project is 12-14 months, but Dominion says that it could be longer depending on what they encounter. How much longer could it be?

## **2. Construction from Wintergreen Entrance, Piney Mountain to Fortune's Point**

From the WTG Work Space, Dominion will clear cut a minimum path of 125 feet for 2,100 feet from the Wintergreen entrance/exit on WPOA land to the top of Piney Mountain, into the residential community of Fortune's Point, and Dominion will then dig a trench that is a minimum of 7' deep in which to place the pipeline. Dominion has only stated that it will use "ground equipment" to do this. FOW has the following questions:

- Please provide pictures of what this construction looks like using ground equipment.
- The side of Piney Mountain that Dominion will be traversing is extremely steep (up to 66%, 69%, 78% and 85% in places). How will Dominion handle the potential for accidents, rock slides, falling equipment and similar incidents?
- A huge volume of cut trees, tree stumps and brush and the rock and other debris from the 7' deep trench will result from the construction activity. FOW estimates that the number of trees that will be destroyed in this path alone is 7,000.

- How will Dominion dispose of this huge quantity of debris?
- Where will Dominion take it, down the path to the WTG Work Space?
- How many dump trucks and other construction trucks will it take to remove all this debris?
- Will all of the dump trucks and other construction trucks be housed at the WTG Work Space, or will they be housed at the Fortune's Point extra work space? Or at both locations? How long will all of the construction activity on WPOA land last?
- In its April 15 filing, Dominion shows three Additional Temporary Work Spaces between the WTG Work Space and the Fortune's Point community at the top of Piney Mountain and four Additional Temporary Work Spaces at Fortune's Point.<sup>36</sup> What will these ATWS's be used for and for how long?

### **3. Restoration**

How will the clear cut corridors be restored and maintained?

- a. FOW understands that no trees may be re-planted in the 75' wide permanent easement area. What will Dominion plant in this permanent easement area? What is the level / type of specie replacement and who decides on the size / age of the native and noninvasive reforestation?

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<sup>36</sup> See the green ATWS's on Attachment 12.

- b. FOW has the same questions with respect to the 25' path on both sides of the permanent easement that will be clear cut. FOW has seen nothing that indicates that Dominion will re-plant forest trees or shrubs in these areas.
- c. In its April 15, 2016 filing, Dominion provides only a "Summary of Seed Mixes" it will use for restoring the clear cut pipeline corridor. Dominion specifies no trees or shrubs that will be used for re-planting.<sup>37</sup> In the table it specifies for mountain areas, the proposed grass seed mix and forb seed mix is "P-VABCHNP02" and includes Peaked and Redtop Panicum; Aster, Purple-stemmed (P); Bergamot Wild (P); Coreopsis, Plains (A); Goldenrod, Pine Barrens (P); Joe Pye Weed, Spotted (P); Partridge Pea (A); Rattlesnake Master (P); Rosemallow (P); Narrowleaf Sunflower (P).<sup>38</sup> Please confirm whether trees and shrubs will be re-planted in the pipeline corridor and, if not, explain why not.
- d. Dominion has orally stated that, after its minimal re-planting efforts, it will not maintain the pipeline corridor except that it will clear cut this corridor every 3 years or respond to specific issues. Please confirm that this is accurate or provide details with respect to its maintenance activities.
- e. As indicated above, the side of Piney Mountain that Dominion will be traversing is extremely steep and highly susceptible to erosion and rock slides. What special maintenance efforts will Dominion commit to deal with these special issues?

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<sup>37</sup> See Dominion's response to Data Request 73, Attachment 1, which includes an "Updated Restoration and Rehabilitation Plan". Section 5.8.3 states that Dominion may supplement seeding with the planting of tree seedlings or small shrubs, but that no supplemental plantings are anticipated for maintained areas within the permanent easements for the pipelines.

<sup>38</sup> See Table 5.7.5-4 on page 15 of the Updated Restoration and Rehabilitation Plan, labeled Seed Mix P-VABCHNP01: Recommended Mountain Physiographic Region.

- f. The Board of Directors of WPOA should have full authority over all re-planting and maintenance efforts for the 2,100-foot path that is on WPOA land. Please confirm that Dominion will commit in writing and in an amendment to its FERC filing to grant this authority to the Board of Directors of WPOA.

#### **4. Use of Wintergreen Roads and Beech Grove Road**

When asked directly whether Dominion intends to use Wintergreen's private roads in its construction activities, Dominion has responded that it had made no decision. Yet, in its April 15 filing with FERC, Dominion identified the private roads of Wintergreen Drive, Fortunes Ridge and Fortune's Point Lane as "access roads" for its construction activities.<sup>39</sup> All of these roads are important, but Wintergreen Drive has special importance because it is the sole road that all Wintergreen residents and guests (more than 10,000 on numerous days throughout the year) must traverse to their final destination in Wintergreen. FOW has the following questions:

- What specific uses of these access roads will Dominion make?
- What construction activities will occur on them and what types of vehicles will be used, dump trucks, logging trucks, winch or other machinery?
- How many trips per day will be made, and for what length of time?
- This construction activity will materially damage the Wintergreen roads. How will Dominion repair the damage?

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<sup>39</sup> See orange colored Access Roads on Attachment 12.

- Wintergreen Drive will be used for approximately one mile. This section of Wintergreen Drive is very steep and winding. Based on existing traffic of occasional construction vehicles, dump trucks and other construction trucks will proceed up this road at speeds of less than 10 mph, which will materially impede the flow of traffic. In addition, the sharp turn off of the very steep and winding Wintergreen Drive onto the narrow Fortunes Ridge Drive is a blind curve and creates a very serious safety issue for Resort guests and residents on the mountain. How will Dominion deal with this issue?
- The substantial impediments to traffic on Wintergreen roads will have a clear negative impact on the Resort's business, deterring potential revenue-generating guests. How will Dominion compensate the Resort for the loss of business?

### **5. Fortune's Ridge Drive and Fortune's Point Lane**

The community on Fortune's Point Lane that lies at the end of Fortune's Ridge Drive Lane has six properties, including four residences and one planned residence that has been put on hold due to the pipeline. Dominion shows four Additional Temporary Work Spaces at Fortune's Point.<sup>40</sup> These work spaces and related construction activities will destroy the community, since Dominion has stated that they plan to run the pipeline across at least four of the properties, including two that have residences. FOW has the following questions:

- Where specifically will those work spaces be located and what size will they be?
- What activities will be carried on in those work spaces?

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<sup>40</sup> See the green ATWS's on Attachment 12 at the end of Fortune's Ridge Drive.

- Will the work spaces house dump trucks, logging trucks, winch and other construction machinery?
- Will cut trees, tree stumps and brush and the rock and other debris from the 7' deep trench be hauled through Fortune's Point?
- Will pipe and other construction materials be stored at Fortune's Point?
- Will the debris, construction materials and explosives (see below) be hauled up and down Wintergreen Drive, Fortunes Ridge Drive (which has approximately 40 residences on it) and Fortune's Point Lane?
- How will the noise and other disruption from these construction activities be mitigated?

From Fortune's Point, Dominion will continue east in the direction of Bryant's Mountain, and they will have the same construction activity - clear cut a minimum path of 125' and dig a trench that is a minimum of 7' deep in which to put the pipeline. All of this construction activity will be in view of many Wintergreen houses, including nearly all of the South-facing houses on Black Rock Circle. Dominion shows no additional work spaces from Fortune's Point (which is at approximately Milepost 159.5) until approximately 162.5.<sup>41</sup> A large volume of cut trees, brush and the rock and other debris from the 7' deep trench will result from this construction activity.

- How will Dominion dispose of the debris?

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<sup>41</sup> See Attachment 15.

- Where will Dominion take it? Will Dominion take the debris back to Fortune's Point and down Fortune Ridge Drive and Wintergreen Drive to the WTG Work Space?
- How long will the construction activity on this portion of the Proposed Route last?

What other construction activity will Dominion have that will affect the Wintergreen area?

## **6. Blasting Activities, Drilling and Noise Levels**

Based on the its April 15 filing<sup>42</sup>, Dominion identifies “areas with near surface bedrock, including areas with near surface lithic bedrock where blasting could be required, along the currently proposed routes.” Nelson County is identified as having 9.7 miles of lithic bedrock, the longest stretch within Virginia. Thus, questions of blasting within the mountainous Wintergreen area (MP 159-163) are raised:

- How much and exactly where will blasting be required from MP 159 – 163?
- How long a time period will the blasting take place from MP 159 – 163?
- What equipment will be used for the blasting?
- Will the explosive materials be transported up the access roads of Wintergreen Drive, Fortunes Ridge Drive and Fortune's Point Lane?

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<sup>42</sup> April 15, 2016, Updated Table 6.2-1 and Appendix 6B in Resource Report 6,

- Will explosive materials be stored at the WTG Work Space across from the entrance/exit to Wintergreen Resort? At the Fortune's Point ATWS?
- What time of day and/or night will blasting be permitted? On what days of the week will blasting be permitted?

In its Resource Report 9, Dominion states "Once HDD operations are initiated, these operations could be performed continuously for 24-hours per day until the HDD installation is complete, which could last for several days to several months."<sup>43</sup> As the entry point to the HDD drill is directly across from the Wintergreen Entrance/Exit and directly adjacent to the Fenton's B&B, the following sound-related questions are relevant to the Wintergreen community and its neighbors.

- How long will it take to complete the drilling activities for the HDD? 12-14 months, as stated by Dominion?
- Will the operation be performed for 24 hours per day? For 7 days a week?
- What is the operational sound level at the HDD entry site? How is it measured for compliance? What do sound models project will be the sound level traveling up the mountain and throughout the area? Note that gun shots from the Rockfish Valley floor are distinctly heard within the Resort community.

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<sup>43</sup> See Resource Report 9, Air and Noise Quality UPDATED and APPENDIX 9B Preconstruction Noise Survey and Acoustical Analysis Reports.

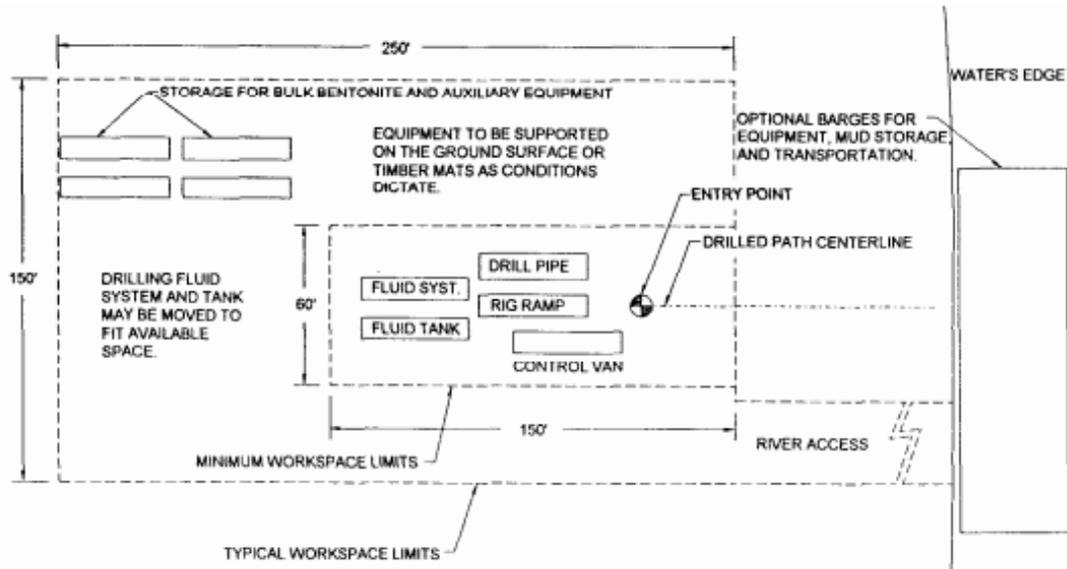
## **7. Other Questions**

Despite repeated requests for specific information regarding Dominion's intended activities, Dominion has only provided incomplete or contradictory information and has attempted to minimize the disruption of these activities. As a result, FOW requests that FERC require Dominion to respond specifically, transparently and in sufficient detail to the above questions, and do so for others that are not yet listed but that may arise at a later date, so FOW has the opportunity to evaluate their accuracy and implications before any plans are finalized.

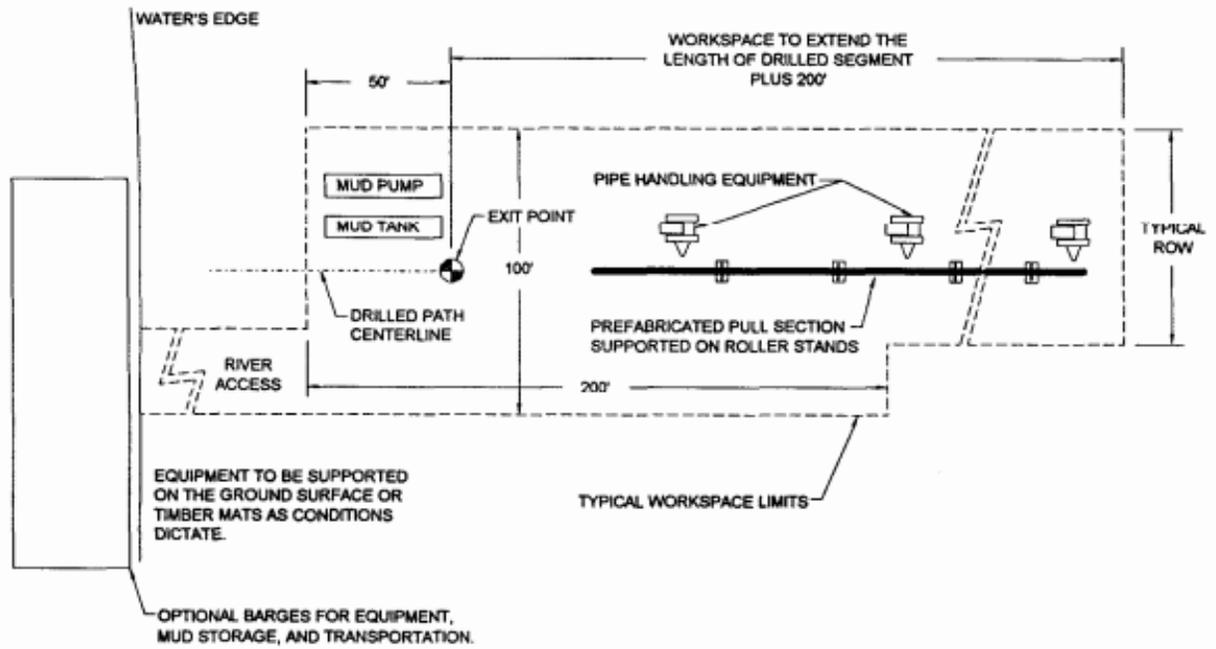
# **ATTACHMENT 14**

## Horizontal Drilling Rig

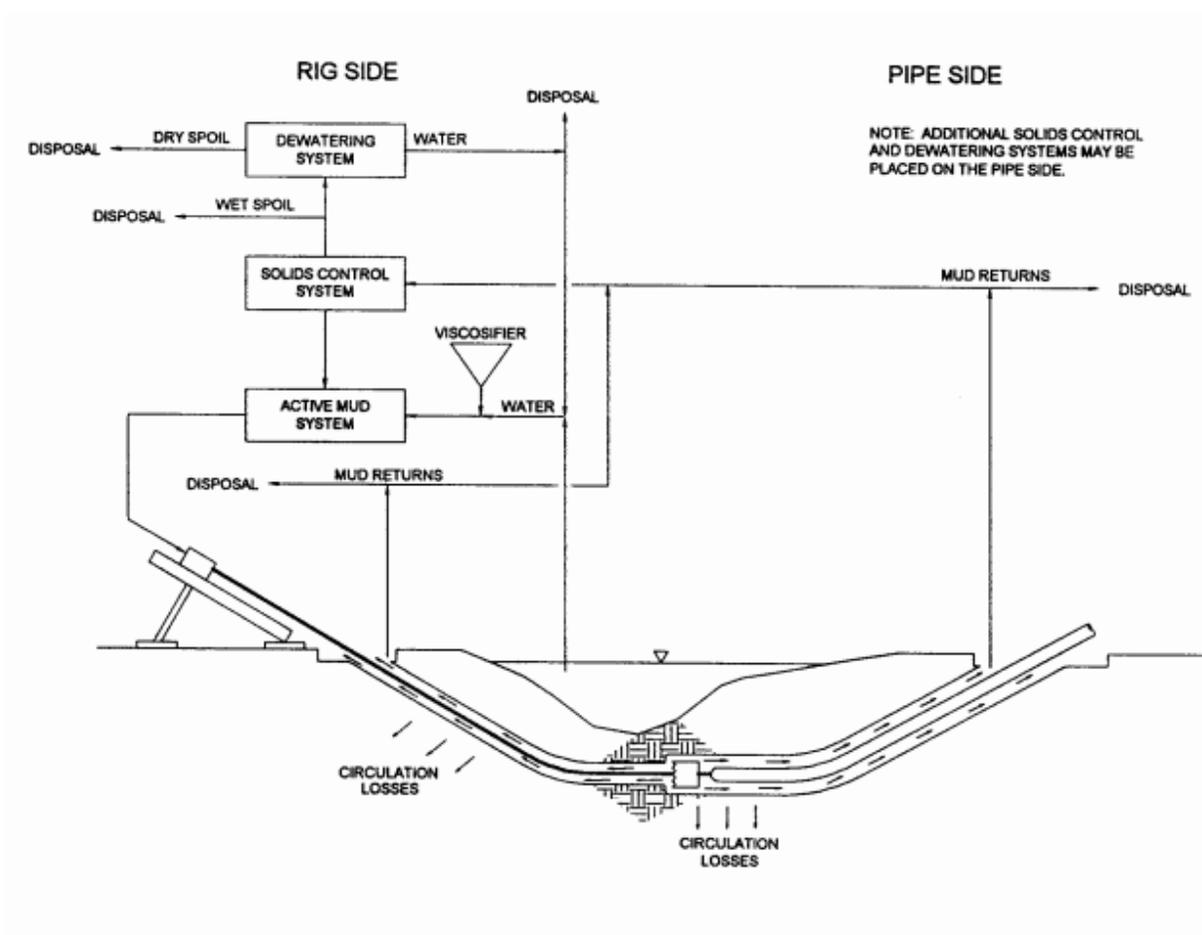
A typical large horizontal drilling rig can be moved onto a site in approximately seven tractor trailer loads. A workspace of 150 feet (45.7 m) by 250 feet (76.2 m) is adequate for most operations. If necessary, a rig may be assembled in a minimal workspace of 60 feet (18.3 m) by 150 feet (45.7 m). However, this minimal workspace will restrict the size and capacity of the drilling rig. A typical horizontal drilling rig site plan is shown in Figure 6 - 1. Photographs of rigsites are shown in Figures 6-2 and 6-3.



**Figure 6-1**  
Typical Site Plan, Horizontal Drilling Rig



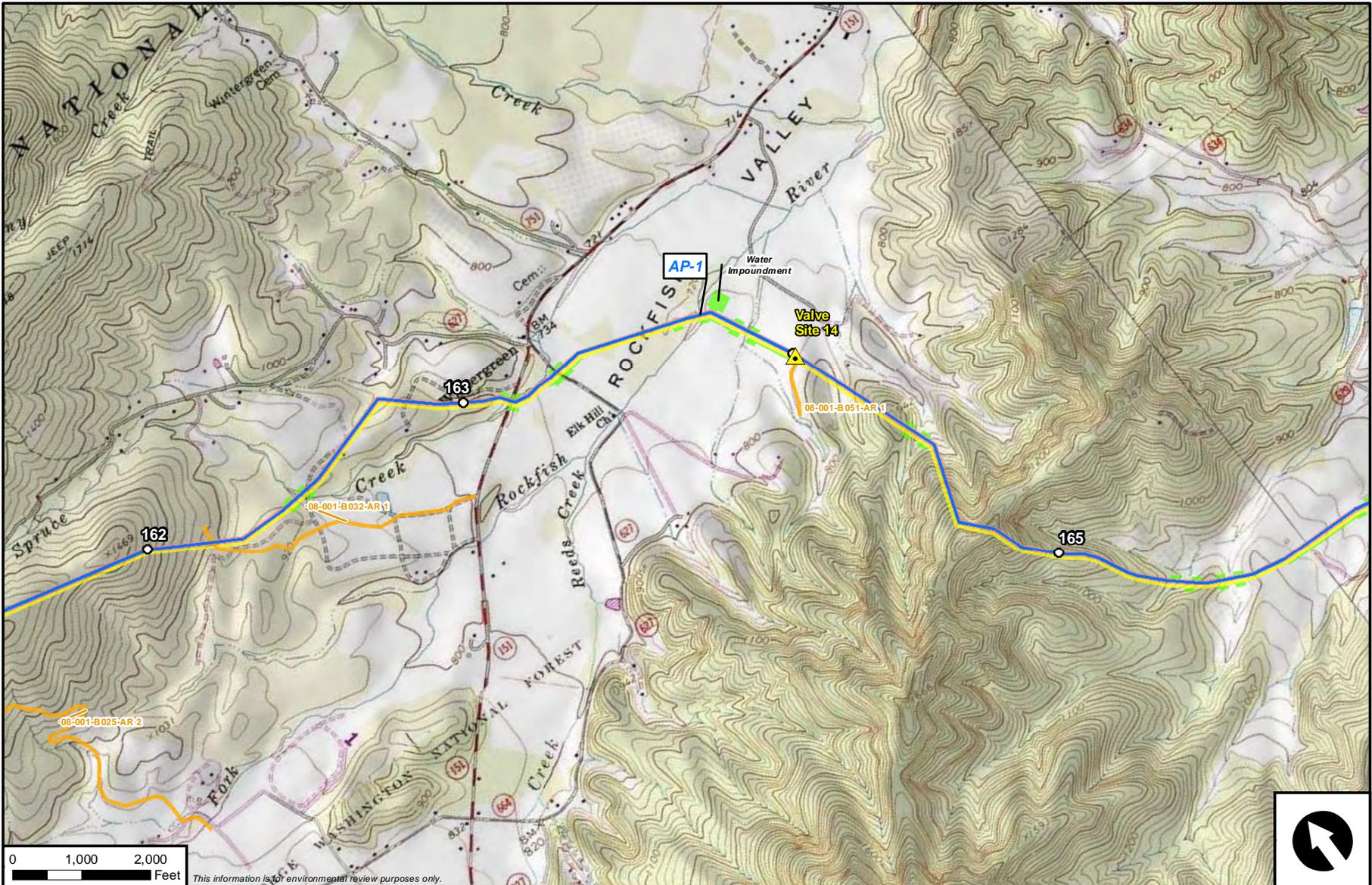
**Figure 6-4**  
 Typical Site Plan, Pull Section Fabrication



**Figure 6-7**  
HDD Drilling Fluid Flow Schematic

# **ATTACHMENT 15**

1A-51



**Atlantic Coast Pipeline**

- |                                |                                  |                              |
|--------------------------------|----------------------------------|------------------------------|
| <b>Atlantic Coast Pipeline</b> | M&R Station                      | Access Road                  |
| Mainline                       | L&R Site                         | <b>Federal Ownership</b>     |
| Lateral                        | Valve Site                       | U.S. Forest Service          |
| <b>Workspace</b>               | <b>Compressor Station Layout</b> | National Park Service        |
| Permanent                      | Permanent                        | U.S. Fish & Wildlife Service |
| Temporary                      | Temporary                        | National Guard               |
| ATWS                           |                                  |                              |

**Atlantic Coast Pipeline**  
**Appendix 1A**  
 Topographic Route Maps  
 Nelson County, Virginia



**CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, DC this 13th day of May, 2016.

*Howard L. Nelson*  
Howard L. Nelson