

**(b) Danger Trees**

Another factor that underestimated the relative costs of constructing a route within the W&OD Park as compared to E7 was the exclusion of danger trees from the costs associated with construction within the W&OD Park. Mr. Simmons objected to the approach adopted by the Virginia Power of excluding payments for danger trees when determining the costs associated with the W&OD Park:

I don't agree with not including the cost of danger trees in the estimate. I don't have any particular problem with Virginia Power's methodology of waiting to deal with them individually. But I think for cost-estimating purposes, a cost which is known to occur, should be included in order to have an apples-to-apples comparison of the routing cost.<sup>91</sup>

Portions of Mr. Simmons' testimony relating to danger trees concerned Transcript Exhibit 114C, which is under seal. In order to avoid discussing the confidential parts of that exhibit in this brief, the Park Authority will simply note Mr. Simmons' further observation, which is in the sealed portion of the record but which does not reveal confidential information, that property owners adjacent to the W&OD Park will receive no right-of-way payments and consequently may prove more difficult to negotiate with concerning danger tree rights than property owners who are compensated for the impact of the transmission line on their property.<sup>92</sup>

Mr. Simmons quantified the additional payments for danger trees to be \$7,251,984, based upon Virginia Power's initial response to Kincaid Forest interrogatory No. 13; if he had utilized Virginia Power's supplemental response, the additional payments for danger trees would have been even higher.<sup>93</sup>

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<sup>91</sup> Tr. at 4423.

<sup>92</sup> Tr. at 4432 (citing from portion of the transcript that is under seal).

<sup>93</sup> Hearing Exhibit 115 and Hearing Exhibit 116 (supplemental response); Tr. at 4456.

### (3) Terrain

The unique terrain of the W&OD Park is another factor contributing to construction costs being higher for a route within the Park as compared to a cross country route like E7. This unique terrain makes construction within the W&OD Park more expensive based on increased costs caused by having more towers, dealing with cut and fill sections, obtaining access to the construction site, and restoring the construction site.

#### More Towers

The Park is a narrow, slightly curving 100 foot wide corridor containing steep cut and fill sections in order to maintain the almost level grade required for the former railroad bed. The level grade increases the number of towers required because it prohibits the design engineer from taking advantage of differences in elevation to create much longer spans. The slight curve requires the use of angled structures: about 80% of the structures on the W&OD will be angled structures.<sup>94</sup> These conditions are much different than those found on E7, where differences in elevation of several hundred feet permit the use of longer spans.<sup>95</sup> This means that a route within the W&OD Park, even though it is shorter than the E7 route, will require more towers, and a greater number of more expensive angle towers, simply based on the differences in terrain between the two routes.<sup>96</sup>

Having a shorter route that uses more towers is significant in terms of cost because, as Mr. Simmons testified,

. . . the number of structures on the transmission line virtually determine the cost. The cost is going to be pretty close to proportional to the number of structures in that the number of structures will determine obviously the number of foundations for the structures. It will determine the number of insulators that go on that structure. It will actually determine the labor of installing the conductor because

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<sup>94</sup> Park Authority witness Simmons, Tr. at 4459.

<sup>95</sup> Park Authority witness Simmons, Tr. at 4460.

<sup>96</sup> See, e.g. Exhibit 112 (Simmons cost estimate detailing towers on W&OD and on E7).

the work of installing the conductor is installing the stringing blocks, getting the lead line through the stringing blocks and attaching the conductor to the insulators and suspension clamps when the work is complete.

So really the number of structures dictate virtually the entire cost of building a transmission line. About the only cost that is not determined for the number of structures required is the material costs for the conductor. And that turns out to be somewhere in the five to six percent of the cost of the transmission line.<sup>97</sup>

### Cut and Fill Sections

The terrain of the W&OD Park also contributes to this shorter route having greater construction costs than E7 due to the number of bridges of questionable capacity and the steep cut and fill sections. These bridges include some that are known to be incapable of supporting the weight of the required construction equipment and other historic structures of an undetermined rating. These historic structures are described in greater detail in Section IVC 2(d) of this Brief (describing historical assets), while the cut and fill sections are described in greater detail in Section IVC 5(c) (describing Modified D). Mr. Simmons dismissed Mr. Sylvester's basic premise that working with a higher degree of variability of physical and geographic features, as encountered on E7, would lead to higher construction costs. Mr. Simmons noted that "if you encounter very difficult conditions at 100 percent of the sites, it would certainly be more expensive than encountering difficult conditions at 50 percent."<sup>98</sup> Mr. Simmons noted that Mr. Sylvester had written an article concerning the difficulties of drilling in fill materials for pour foundations, and these difficulties were very similar to the challenges posed by the W&OD Park: Mr. Sylvester coped with drilling six-foot diameter poles of 25 feet, which resembled the six foot diameter holes of 18 to 32 feet that Virginia Power would have to drill in fill sections within the W&OD Park. Difficulties included the volume of concrete, where cracks and voids in the fill would require perhaps 20 to 25 % more concrete than typical holes. Another issue raised by Mr.

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<sup>97</sup> Tr. at 4462.

Sylvester's article concerned dealing with the disturbances caused by drilling near occupied residences, and that would certainly be a concern along the W&OD Park.<sup>99</sup>

#### Access to Construction Site

Accessing the construction site would also make construction within the W&OD Park more expensive as compared to the E7 route. Mr. Simmons disagreed with Mr. Sylvester's and Mr. Cox's assessment that the W&OD Park would provide relatively easy access while the E7 route would be more complex.

The most efficient transmission line construction projects utilize a sequenced operation: you clear the right-of-way, start the excavation crew, let it get a number of holes dug, come in behind with a cage crew to put the rebar together that goes into the foundations, immediately following that with concrete trucks to pour the foundation. This all works in a linear fashion, with one crew falling in behind the other, so that you can set your last structure the day the last foundation has cured. This minimizes the amount of time involved and makes most efficient use of the work crews.<sup>100</sup> The ability to build separate access roads along E7 means that the work can be done in this kind of efficient manner because the roads can be unique to each structure, meaning work crews at one site will not interfere with work at other sites.<sup>101</sup>

This kind of sequenced operation is not feasible within the W&OD Park, and that will inevitably make the construction operation less efficient, will drive up costs, and will prolong the timeframe for completing the project. For instance, digging a six foot diameter hole of 18 to 20 feet in a narrow fill area will be extremely challenging. The equipment involved includes a 40 to 50 ton auger truck, an in-loader to pick up and load the dirt, and a dump truck to haul the dirt

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<sup>98</sup> Tr. at 4469.

<sup>99</sup> Tr. at 4470-4471.

<sup>100</sup> Park Authority witness Simmons, Tr. at 4475.

<sup>101</sup> Park Authority witness Simmons, Tr. at 4476.

away. Having to maneuver this kind of equipment along narrow cut and fill sections will not allow for other trucks or pieces of equipment to pass.<sup>102</sup> The narrow confines and fragile nature of the cut and fill sections are described more fully in Section IV(c) of this Brief (describing Modified D). There would be so much conflict between the different pieces of equipment that in some instances, you may have to actually go in and virtually complete a structure before proceeding to the next site because you cannot get access around it.<sup>103</sup>

Adding to the complexity is that fact that there are areas in the W&OD Park where there is no through-route, meaning you cannot get on, drive to a certain point, and then get off. Equipment will have to turn around and retrace its steps because the bridges along the W&OD Park have weight limitations. Even the strongest bridge, which spans Route 7, has a 10 ton rating that is acceptable for van tours for viewing the route but obviously would not be suitable for a 40 ton concrete truck.<sup>104</sup> Mr. Cox suggested that the Company could use a “jump” bridge to avoid using existing bridges with the W&OD Park,<sup>105</sup> but that adds yet another piece of equipment to an already crowded project area and also adds another layer of complexity. Because this suggestion was made for the first time during rebuttal testimony, no Park Authority witnesses had the opportunity to evaluate how feasible this approach would be, but this suggestion undermines Mr. Cox’s initial assessment that construction within the W&OD Park would be relatively easy as compared to E7.

Another factor that will prolong and complicate the construction process within the W&OD Park is encountering rock, which is particularly likely to occur in the fill sections. With

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<sup>102</sup> Park Authority witness Simmons, Tr. at 4473-4478.

<sup>103</sup> Park Authority witness Simmons, Tr. at 4477.

<sup>104</sup> Park Authority witness Simmons, Tr. at 4473-4478. See Park Authority witness McCray, Tr. at 4182-4183 describes a concrete and steel bridge that goes over the Route 7 bypass just west of Leesburg: . “once an ambulance tried to drive across the structure in the historic district in the center of town and just about fell through. We had a 10-foot hole in the middle of the bridge after they sped across it.

<sup>105</sup> Virginia Power witness Cox, Tr. at 5363.

residences being, in many cases, within 100 feet of the W&OD Park, blasting is not a viable option as it would be along E7, and that will greatly complicate the construction process because a much slower, more expensive approach will have to be used in which liquids which expand as they set up to fracture the rock.<sup>106</sup>

### Restoration

Restoring the construction sites will also be far more costly and time consuming within the W&OD Park than it will be along E7. In many cases, restoration along E7 will simply involve grading, which should be minimal if the contractor exercises some care, and then disking and seeding. In contrast, restoration within the W&OD Park will entail replacing the asphalt trail, which requires demolishing the existing trail, disposing of it off site, and putting down a new surface.<sup>107</sup> As Mr. McCray testified,

We've got some experience on the eastern end [of the trail] with some heavy vehicles of the power company where they have—they have really crushed our asphalt and damaged our trail. So I think the trail would be—the asphalt trail itself would be in danger with any construction activity out there.<sup>108</sup>

Damage to the historic railroad cut and fill sections described in Section 5(c) of this Brief, which require restoration, would also increase construction costs.

### **(d) FERC Guidelines**

In addition, selection of the Northern Routes violates several basic tenants of the FERC Guidelines attached to the SCC Guidelines concerning the routing of transmission lines. Guideline No. 3 states that “[r]ights of way should avoid prime or scenic timbered areas, steep slopes, and proximity to main highways where practical.”<sup>109</sup> Selection of the Northern Routes would squarely violate this guideline by placing the Hamilton Line in an area characterized by

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<sup>106</sup> Park Authority witness Simmons, Tr. at 4476-4477.

<sup>107</sup> Park Authority witness Simmons, Tr. at 4477.

<sup>108</sup> Tr. at 4185.

scenic timbered areas, steep slopes, and, where it would depart from the W&OD Park, along a main highway. Failure to take these and other basic aspects of the Northern Routes into account led the Southern Respondents' mistaken claim that construction along the Northern Routes would be less expensive than construction along the Southern Routes.

**(b) Existing Transmission Lines**

Southern Respondents claim that the existence of transmission lines in other areas of the W&OD Park, and the public's perception of such transmission lines, justify routing the Hamilton Line within the W&OD Park. The Staff Report also suggests that the public's perception of existing transmission lines would justify routing the Hamilton Line within the W&OD Park. These conclusions are based on misperceptions and lack of knowledge concerning the public's perceptions of existing transmission lines within the Park. When the public's perceptions are properly understood, it becomes clear that the existing of transmission lines in other areas of the W&OD Park provides significant support for not routing the Hamilton Line within the W&OD Park.

Scenic Loudoun proffered Dr. Bergstrom's testimony as evidence that routing transmission lines within the W&OD Park was appropriate based on the public's response to survey questions. Dr. Bergstrom's testimony was premised on his interpretation of a joint project to study trail use in Virginia for which he was listed as a principal investigator along with his research assistant, Joshua Gill.<sup>110</sup> In response to Dr. Bergstrom's testimony, Ms. Rudacille indicated that Dr. Bergstrom did not actively participate in the preparation of the survey questions related to park use and that he fundamentally misinterpreted the purpose of the

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<sup>109</sup> Tr. Exhibit 118.

<sup>110</sup> Tr. Exhibit 98, Appendices to Park Authority Testimony, Appendix H at 2.

question and the responses to the question.<sup>111</sup> Under cross examination, Dr. Bergstrom indicated that he was not familiar with portions of his testimony, including a series of photos illustrating the W&OD<sup>112</sup> Park, and he also indicated that he was not sure whether portions of his testimony accurately represented the W&OD Park.<sup>113</sup> For these reasons above, Dr. Bergstrom's testimony should be given no weight by the Commission.

In addition, Ms. Rudacille, who attended twenty meetings over the course of two years as part of the team that prepared the survey, testified that Dr. Bergstrom did not participate in any of the meetings or any of the conference calls or any of the site visits.<sup>114</sup> There were two components to the survey, an economic component and a park management component. Mike Bowker from the forest service was the principal investigator for the study concerning the economic component.<sup>115</sup> Dr. Bergstrom "didn't participate in the development of the management portion of the survey at all."<sup>116</sup> The question that Dr. Bergstrom focused on in his testimony was in the park management portion of the survey; he claimed that responses to survey questions regarding construction indicated how overhead transmission lines affect the quality of trips to the W&OD Park. Ms. Rudacille testified that "his whole discussion shows a fundamental misinterpretation of the survey question" for the following reasons:

[H]e tries to equate construction projects, which is what the survey actually said, with the presence of overhead utility lines, and the question doesn't have— doesn't talk about lines at all. The meaning of a construction project is when you're actively building something, and it doesn't mean the existence of a facility that's been in place for many, many years.

But once he makes that assumption that the term "construction projects" actually mean overhead transmission lines, which is a pretty big jump, he said that 53 percent of people surveyed were not negatively affected and he drew the

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<sup>111</sup> See Scenic Loudoun witness Bergstrom, Tr. at 3258 (saying that he did not attend any meeting: Mike Bowker did).

<sup>112</sup> Scenic Loudoun witness Bergstrom, Tr. at 3261-3262.

<sup>113</sup> Scenic Loudoun witness Bergstrom, Tr. at 3258 ("I wouldn't know if they're a fair representation").

<sup>114</sup> Tr. at 4323.

<sup>115</sup> Tr. at 4323-4324.

<sup>116</sup> Tr. at 4323.



conclusion that, therefore, overhead utility lines don't negatively impact trail users visits . . . and there's no basis for that conclusion. . . and it's not really surprising that . . . people were not negatively impacted by a construction project because a trail user who didn't encounter a construction project wouldn't be negatively impacted. And secondly, I think there are very few trail users [who] would encounter a construction project on the trail.

Ms. Rudacille noted that construction projects rarely impact the entire length of the W&OD Park, and trail users using a portion of the Park would not encounter a construction project on another portion of the Park. Ms. Rudacille pointed out that, of the 126 photos included in Dr. Bergstrom's testimony, only 5 showed any construction projects, and four of those were at the same construction site, illustrating that a trail user would have to be on that particular portion of the 45 mile trail to be impacted.<sup>117</sup> In addition, 75% of the sampling was done on weekends and the Park Authority does not allow construction work to take place on weekends.<sup>118</sup>

The reason a question was asked about construction projects was that the Park Authority was seeking information about underground fiber optic projects that run along the W&OD Park to assess the impact of non-park use upon Park users. Such projects are approved on a case-by-case basis when there is no viable alternative and where all possible mitigation measures are used.<sup>119</sup>

In addition to misinterpreting the survey question itself, Dr. Bergstrom also failed to recognize that the results of the survey found the responses to this question inconclusive because larger numbers of users agreed and similarly large numbers disagreed, so the study itself found the responses that Dr. Bergstrom relied on to be inconclusive.<sup>120</sup>

Regarding interpretations of survey responses concerning scenery, both Ms. Rudacille and Mr. McCray testified that the timing of the responses to those questions was crucial. As

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<sup>117</sup> Tr. at 4326-4327.

<sup>118</sup> Tr. at 4327.

<sup>119</sup> Tr. at 4328.

noted in the Staff Report, in March of 1998 Mr. McCray published a study of trail users; one survey question indicated that 86% of the respondents stated that enjoyment of scenery and nature was a reason they used the trail, and another survey question indicated that 69% of the respondents thought that utility lines along the W&OD were not a problem. At the time the survey was done, the transmission lines along the trail had been there for years and had predated the trail, "so it's what our trail users were used to."<sup>121</sup> All of these responses were completed *before* Virginia Power introduced a drastic right-of-way clearing program and *before* Virginia Power announced that it was considering installing 11 miles of transmission lines in the portion of the W&OD Park that had no transmission lines.<sup>122</sup> Responses to these measures are far more indicative of how trail users perceive installation of transmission lines in the last undisturbed section of the Park. In 2004, Virginia Power informed Mr. McCray that

. . . they were going to be doing much more severe clearing than they had done in the past. And what that amounted to was cutting smaller species of trees that had never been cut in the past, which included cutting smaller species of trees that had never bothered the lines, that under normal growing conditions would never bother the lines, that under normal growing patterns would never bother the lines.

Also, clearing or cutting some trees that had been topped pretty much their whole lives and, therefore, had become canopy trees in a topped condition. And there was a lot of public outcry about this . . . Several of the local legislatures got involved. And we eventually worked something out to eliminate some of the clearing they had proposed doing.

This documents a major public outcry in response to *maintenance* clearing for *existing* transmission lines. Once the public became aware that Virginia Power was proposing to route a new set of transmission lines along a pristine section of the W&OD Park, Mr. McCray testified that he was "inundated with calls and emails and stopped on the trail: people wanting to know . . . what's going to happen? How can this happen? . . . what's going to happen to all those

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<sup>120</sup> Tr. at 4329.

<sup>121</sup> Tr. at 4179.

<sup>122</sup> Park Authority witness Rudacille, Tr. at 4329-4330; Park Authority witness McCray, Tr. at 4148-4180.

trees?”<sup>123</sup> Mr. McCray concluded that “ if the same survey question had been placed to people asking questions about this section of the trail and utility lines, I think it would have been a much different answer.”<sup>124</sup>

**(c) Visual Impacts**

Southern Respondents claim that visual impacts justify a finding that the Hamilton Line should not use a Southern Route. This claim is based on dubious evidence concerning visual impacts along the Southern Route. In addition, the Southern Respondents neglect to apply this same rule when considering impacts on the Northern Route. When the visual impacts along the Southern Route are properly examined, the evidence shows that the Hamilton Line will have minimal, if any, harmful visual impact along the portion of the Southern Route that was considered. When the visual impacts along the Northern Routes are considered, it is clear that the visual impact of the Hamilton Line along the Northern Routes is far greater than the visual impact along the Southern Routes. Consideration of visual impacts clearly favors selection of the Southern Routes for the Hamilton Line.

The SCC Guidelines also are instructive in assessing how visual impacts should be taken into account. They prescribe the following:

If rights-of-way must be routed through such historic places, parks, wildlife, or scenic areas, they should be located in areas or placed in a manner so as to be *least visible from areas of public view* and so far as possible in a manner designed to *preserve the character of the area*.<sup>125</sup>

Even if the Commission were to determine that the Northern Routes and the Southern Routes had approximately the same impacts on historic places, parks, wildlife, and scenic areas, this guideline would justify selection of the Southern Routes for the Hamilton Line because there

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<sup>123</sup> Tr. at 4179.

<sup>124</sup> Tr. at 4180.

is simply no way to make the transmission line less visible within the narrow confines and even slope of the W&OD Park, nor is there any way to preserve the character of the park when the majestic tree canopy is replaced by towering transmission poles within a few feet of the millions of visitors that frequent the Park.

Mr. Simmons demonstrated that the Commission should give little weight to Mr. Rinker's visibility analysis. This analysis was "very speculative" because he made a number of improper assumptions about tower locations that were inconsistent with proper design practices regarding the use of elevation, the location of transmission poles, and the impact of intervening vegetation.<sup>126</sup> For instance, Mr. Rinker would put towers where there was a significant change in elevation and vertical alignment. Mr. Simmons noted that no design engineer would put a structure right at the bottom of a hill in the valley. Also, Mr. Rinker placed the poles at 700 foot intervals, and Mr. Simmons found that to be inconsistent with proper design practice because the 700 foot interval was an average number. Mr. Simmons stated that

[n]obody sets out with a span in mind: you set out to design to utilize the fewest structures you can to maintain the necessary compliance with code clearances and code strength requirements. Simply when you get through, you may have spans that are 1,200, 1,300 feet, some that are 500 feet. The average was 700, certainly not 700 foot intervals.<sup>127</sup>

Mr. Simmons noted that many of Mr. Rinker's assumptions were inconsistent with the FERC Guidelines that accompany the SCC Guidelines, which most design engineers would comply with.<sup>128</sup> Even if the Commission does find that Oatlands testimony concerning visibility is credible, that testimony is based on towers that are over 9,000 feet from Oatlands, which well

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<sup>125</sup> SCC Guidelines, *Guidelines for Protection of Natural, Historic, Scenic, and Recreational Values in the Design and Location of Rights of Way and Transmission Facilities* at 1, item 2.

<sup>126</sup> Park Authority witness Simmons, Tr. at 4478-4479.

<sup>127</sup> Park Authority witness Simmons, Tr. at 4479.

<sup>128</sup> Park Authority witness Simmons, Tr. at 4480.

exceeds the one-mile standard established by the Department of Historical Resources and which, simply by the sheer distance from Oatlands, will have an extremely minimal impact.<sup>129</sup>

Mr. Simmons sponsored visibility charts and photo simulations in his testimony for the Shenstone Respondents that illustrate the far greater impact the Hamilton Line will have if it uses the Northern Routes as compared to the Southern Routes.<sup>130</sup> In sharp contrast to Mr. Rinker's analysis, the credibility of Mr. Simmons exhibits was not seriously brought into question. Mr. Wolfe subjected Mr. Simmons to extensive cross examination concerning the photo simulations, but this cross examination confirmed the expertise of the University Studies Group that performed the evaluations under Mr. Simmons's direction, and also confirmed Mr. Simmons' extensive experience with using such simulations in his transmission design work. Mr. Watts subjected Mr. Simmons to cross examination concerning the visibility charts, but this examination simply clarified the parameters in the charts.<sup>131</sup>

The visibility charts provide a more global view of visibility. They show the number of structures that would not be blocked by intervening ground elevation for an area extending out from the section of the route with the highest visibility. Attachment #2 shows the visibility from the highest visibility point on the E7 route at a distance of five miles, Attachment #3 shows the visibility from the highest visibility point on the W&OD route at a distance of five miles, Attachment #4 shows the visibility from the highest visibility point on the E7 route at a distance of one mile, and Attachment #4 shows the visibility from the highest visibility point on the W&OD route at a distance of one mile. These viewshed exhibits show that significantly greater

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<sup>129</sup> See generally, Tr. Exhibit 85 (Oatland Testimony) Tr. Exhibit 121, Tab Q, *Prefiled Direct Testimony of Charles Simmons on behalf of Shenstone Respondents*, Attachment 2.

<sup>130</sup> Tr. Exhibit 121, Tab Q, *Prefiled Direct Testimony of Charles Simmons on behalf of Shenstone Respondents*, Attachment 2 (Visibility Preferred Corridor @ 5 miles), Attachment 3 (Visibility W&OD Corridor @ 5 miles), Attachment 4 (Visibility Preferred Corridor @ 1 mile), Attachment 5 (Visibility W&OD Corridor @ 1 mile), Attachment 10 (Simulations related to Paeonian Springs) and Attachment 11 (Simulations related to Fox Ridge).

<sup>131</sup> Tr. at 4563-4565.

visibility impact would be created for the entire area if the W&OD route is utilized rather than the E7 route.<sup>132</sup>

The photo simulations demonstrate even more concretely how the W&OD Park will be drastically altered. Section IV.B.2 of this Brief describes these photo simulation in greater detail.

**(d) Historic Assets**

Southern Respondents claim that impacts on historic assets justify a determination that the Hamilton Line should not use the Southern Routes. However, this claim completely ignores the far more serious impacts that construction of the Hamilton Line will have on historic assets if a Northern Route is used. In addition, this claim ignores the independent findings of the Department of Historic Resources, which noted the existence of historic assets throughout Loudoun County but only specifically objected to a route within the W&OD Park. When an accurate assessment of the impact on historic assets is considered, it is clear that impact on historic assets favors selection of the Southern Routes for the Hamilton Line.

In terms of preserving historical assets, the W&OD Park is the worst possible site for the Hamilton Line. A construction project of that magnitude simply cannot be done without impacting the integrity of the historical aspects of the W&OD Park. Even if it is possible to mitigate some of these impacts by taking extraordinary measures, these measures will inevitably drive up costs and demonstrate a few basic truths: the Northern Routes are ill-suited for transmission line construction, considerable effort would be required to mitigate the damage of such construction—if mitigation is possible at all—and no such efforts are needed along the Southern Routes.

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<sup>132</sup> Tr. Exhibit 121, Tab Q, *Prefiled Direct Testimony of Charles Simmons on behalf of Shenstone Respondents*, at 10.

Mr. McCray testified that historical structures within the W&OD Park are very vulnerable to a major construction project within the confines of the park:

We also have—within the length of the trail out there we have three stone arches that are—they are about 20- to 25- feet high. They carry creeks underneath the trail and they were constructed this way by the railroad because they are larger creeks.

And these are fairly sensitive structures. They were all built before the Civil War, pretty well engineered. Engineers were pretty smart back then also, but the arches have never had the kind of construction traffic I feel would probably—just from my experience with new transmission installations along the W&OD, we've never had this kind of weight on those stone arches, so I'm not sure what would happen to them.

The railroad has certainly had some heavy trains that went over them, but that's a different animal. The trains were on rails which sit on railroad ties which sit on a layer of ballast: the weight is well spread out over the arches. That would not be the case with anything heavy on wheels. So they are very sensitive.

I described earlier, particular to the Shenstone area, the steep cuts and fills, but that's very typical of this whole area from the east side of Leesburg out to Hamilton. And the cuts and fills are very sensitive also.

One time I was out in that area west of Leesburg doing some mowing on a large tractor and I got a little too close to the edge of the fill and the fill crumbled beneath my wheels and I was able to pull back onto solid ground, but I think it just illustrates that these structures were not meant to have anything other than traffic in the center of the fill on rails.

Any kind of heavy trucks getting close to the edges of the fill would—could cause collapses and destabilizations of these sensitive fill areas.

The cut areas I described are very, very narrow, eight-foot of asphalt and maybe some ditches on the side. There is just not a lot of space.<sup>133</sup>

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I've already described from a historical perspective the three old stone arches that exist underneath the trail. In addition to these, we have dozens and dozens of smaller structures. These are three to four foot wide stone boxes that are basically just large, flat stones stood on edge with a larger flat stone over the top of them and then backfilled around. There there's some intermediate structures that are smaller arches or larger boxes.

And all of these go back to pre-Civil War time . . . These structures in particular were looked at carefully when the State of Virginia considered the W&OD for eligibility for the National Historic Register. They looked at everything, you know, the whole property, and they looked at everything as a whole and they counted these structures as very important to that eligibility.<sup>134</sup>

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<sup>133</sup> Tr. at 4184 to 4185; Tr. at

<sup>134</sup> Tr. at 4196-4197.

Even Mr. Scheel, who submitted pre-filed testimony for Scenic Loudoun and then later submitted such testimony as a public witness, admitted that there were other historic resources within the Study Area other than the ones described in his testimony.<sup>135</sup> He also admitted that he could not testify that there were more historic assets within the area he studied as compared to other routes.<sup>136</sup> In addition, he agreed that the proximity of a line, and visibility of the line, was a factor in determining the impact.<sup>137</sup> Based on these considerations, the Commission should determine that it would be consistent with Mr. Scheel's testimony to find that lines literally right on top of historic assets, as compared to lines that are thousands of feet away from such assets based on the maps accompanying Mr. Scheel's testimony,<sup>138</sup> have a greater impact on historic assets.

Perhaps most significantly, the Department of Historic Resources specifically recommended against locating the Hamilton Line within the W&OD Park and, in regards to other locations within the Study Area, stated it had no general objections and recommended field investigations for other sites.<sup>139</sup>

**(e) Natural Environment**

Southern Respondents claim that impacts on the natural environment, with a particular focus on trees, justify a determination that the Hamilton Line should be routed within the W&OD Park. However, this claim completely ignores two crucial facts. First, the value of the

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<sup>135</sup> Tr. at 5801.

<sup>136</sup> Tr. at 5801.

<sup>137</sup> Tr. at 5801-5802.

<sup>138</sup> Tr. Exhibit 164 (Scheel's Testimony).

<sup>139</sup> Tr. Exhibit 145, Staff Report, Attachment 5, DEQ Coordinated Environmental Review, W&OD Trail Route, whose contents included a July 2, 2004 Letter to Virginia Power from the Department of Historical Resources stating: "DHR has no general objection to the construction by Dominion of a transmission line in western Loudoun County; however, there are numerous historic properties located in the vicinity of the proposed project and the potential impacts to these sites should be taken into consideration during project planning. . . [discussion of W&OD} . . . Accordingly, DHR recommends against locating the transmission line in the W&OD right-of-way and encourages the consideration of alternate routes."



natural environment cannot simply be measured by the timber value of trees: the scenic, recreational, and wildlife value of trees play a significant role in their contribution to the natural environment. Second, preservation of the natural environment is far more successful within a park rather than outside a park, where trees are subject to development now and in the future. When an accurate assessment of the impact on the natural environment is considered, such impacts clearly favors selection of the Southern Routes for the Hamilton Line.

In response to Ms. King's testimony on behalf of Scenic Loudoun, Mr. McCray testified that Ms. King improperly concluded that trees along the E7 route were more valuable than trees within the W&OD Park because she concentrated on the timber value of trees and failed to take into account how trees within the Park had significance based on their environmental, scenic, wildlife, and shading attributes. Mr. McCray observed that

She's looking at the value of—overall value of those trees as a forester would, as someone who is trying to assess the timber value or lumber value of those trees. She claimed that trees shouldn't be counted if they are less than four inches. And I kind of take that to mean that you can't cut a board out of a tree that's less than four inches. We don't look at our trees the same way.

We're trying—we look at trees as what is their purpose? What are you trying to use them for? And if you're just trying to use them as boards that have been cut down and sawn, then you probably are looking for a certain, minimum size.

But for our purposes in terms of environment, scenery, canopy, value to wildlife, we're looking at a much different thing.<sup>140</sup>

Mr. McCray concluded that the scenic value of the W&OD Park trees was greater because they provided scenic value “to a million people.” In addition, the Park trees were more interesting than simply a forest of mature maples, oaks, and hickories might be because “we have different colors, different textures, different heights.” This diverse mixture also provided valuable screening for the Park because they “form a very multilayered screen forest” that provided screening for both trail users and for nearby homeowners. This screening was essential

to preserving the rural feel of the trail and giving trail users the feeling that they are in a park and not just running through a neighborhood.<sup>141</sup>

Mr. McCray noted that Ms. King was dismissive of the Park trees as being “weedy” or including undesirable species like red cedar. Mr. McCray disputed this characterization. He knew that red cedars are one of the first trees to grow in a disturbed area,

[b]ut for our purposes they are very valuable. Because they are an evergreen, that means they are out there all year long. So in the winter when maybe some of the deciduous trees have dropped their leaves, the fact that we have a lot of red cedars means we still have a good screen.

And from a wildlife perspective, they provide two of the three things that constitute a wildlife habitat: they provide protection and a place to raise the young, meaning birds and even animals will use the cedar as a nesting area; and then it also provides food. And because they grow so well and are so hardy, they provide a lot of food for the birds and animals in that area.<sup>142</sup>

Mr. McCray also noted that a more scientific, careful count of the Park’s trees had been done that showed 36,000 trees at two inches or more and 19,000 at four inches or more.<sup>143</sup> The canopy provided by these trees is especially valuable in the summer, when

[t]he temperatures along the trail are, you know, 10 to 15 degrees cooler than they are east of Leesburg where we effectively have no canopy or shade for trail users. And that’s just one of the things that has made that section so popular with our trail users. If you want to ride a bike in the summer, if you were choosing between a section that was in full sun or a section that was well shaded, that’s—that would make the shaded section a lot more popular and draw a lot more people to it.<sup>144</sup>

Perhaps the most important thing that distinguishes the trees in the W&OD Park from the trees along E7 is that that trees within the Park are spared from development, while trees along E7 are on private property located in one of the fastest-developing counties in the United States and thus are at risk of being lost to development.<sup>145</sup> This was clearly illustrated when Ms.

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<sup>140</sup> Tr. at 4186-4187.

<sup>141</sup> Tr. at 4188-4190.

<sup>142</sup> Tr. at 4191.

<sup>143</sup> Tr. at 4193. See Tr. Exhibit 102 (tree survey).

<sup>144</sup> Tr. at 4205.

<sup>145</sup> Park Authority witness Rudacille, Tr. at 4230.

Rudacille testified that most impressive stand of trees identified by Ms. King in her updated chart were located in an area where the trees would be removed to make way for luxury homes on three acre lots:

In March when we did the tours, the route tours in March, we stopped at one of the parcels, Mr. John Andrews, with Leesburg Luxury Homes. He showed a development plan for that parcel showing that they were going to build luxury homes on three-acre lots on that area, and I think that is the parcel that Ms. King testified had the largest trees in the E7 sampling that she took. I think she testified that the homes may not impact the trees if they are located in the open area, but the site development plan that was shared on the tour showed that the residential lots are in that wooded area, and that wooded area is part of the forested area that's in the Company's application.<sup>146</sup>

### **3. Impact on Human Environment**

Southern Respondents claim that impacts on the human environment justify a determination that the Hamilton Line should be routed within the W&OD Park. This claim simply has no basis in reality. By any possible measure, the impacts on the human environment overwhelmingly favor selection of the Southern Routes for the Hamilton Line.

A route within the W&OD Park severely impacts 841 homes by placing them within 500 feet of the line, and is especially devastating to 55 of those homes which will be within 100 feet of the transmission line.<sup>147</sup> The lots sizes along the W&OD Park are smaller than the lot sizes along E7, which exacerbates the impact even more.<sup>148</sup>

In comparison, the E7 route impacts 38 homes within 500 feet. There are no homes within 100 feet. In fact, for many of the properties along the Southern Routes, the houses are

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<sup>146</sup> Park Authority witness Rudacill, Tr. at 4321

<sup>147</sup> Park Authority witness Rudacille, Tr. at 4335.

<sup>148</sup> Park Authority witness Rudacille, Tr. at 4316 (noting that properties adjacent to the W & OD Park tend to be smaller than those along E7).

5 on E7. Those properties tend to be smaller, I

thousands of feet away from the proposed line, and in several instances the property owner does not live in a house on the property.<sup>149</sup>

The sheer number of houses impacted along the Park, and the sheer proximity of those houses to the transmission line, demonstrates that the residential impacts of a route within the W&OD Park are overwhelming as compared to the E7 route: the impacts are over twenty times greater simply based on the number of houses.

Whereas Mr. Davenport expresses understandable concern for the loss of shade on his own property<sup>150</sup> and for the impact of the transmission lines on his own children,<sup>151</sup> the Commission simply must take into account all those other children that would be far more greatly impacted by a route within the W&OD Park

#### 4. Impact on Public Resources

Southern Respondents claim that the impact on public resources justify a finding that the Hamilton Line should not use a Southern Route. This claim is based on dubious evidence concerning the impacts on Oatlands. In addition, this claim completely ignores the far greater impacts that the Northern Route will have on public resources. When the impact of a Southern Route on Oatlands are properly examined, the evidence shows that the Hamilton Line will have minimal, if any, harmful impact on Oatlands.<sup>152</sup> When the impact of a Northern Route on the

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<sup>149</sup> Park Authority witness Rudacille, Tr. at 4318 (noting that 60% of the parcels shown on Mr. Ruffner's report are vacant, meaning no homeowner would be impacted).

<sup>150</sup> Mr. Davenport, Tr. at 3587 ("It's gigantic trees. In the middle of the summer -- talking about shade, in the middle of the summer you can walk back through there and under the canopy it's 10, 15 degrees cooler than walking around other places.)

<sup>151</sup> Tr. at 3580 (Mr. Davenport confirmed his concerns about the transmission line impacting his children).

<sup>152</sup> Tr. at 4540-4541, cross examination of Mr. Simmons by Mr. Wolf:

Q. Would you agree that one of the purposes of Oatlands as a historic resource is to also preserve the natural setting for the general public?

A. I don't see any real impact on Oatlands—

Q. It's a yes or no. Would you agree that one of the purposes of Oatlands would be to preserve a natural setting?

W&OD Park is considered, there is no doubt that the Hamilton Line will have an extremely detrimental impact on public resources.

The impact on Oatlands would be the visibility of transmissions towers from a considerable distance, if they are visible at all, while Oatlands is already impacted far more by a nearby cell tower. The impact on the W&OD Park would be the destruction of trees and historical attributes and everything that makes that section of the W&OD Park such a valuable escape to nature. The question is not whether cycling will still occur. The question is preservation of the park environment. You simply cannot restore in any meaningful way a lost canopy of towering trees and a tranquil escape from the ever increasing development of Loudoun County and Northern Virginia generally. Once those are damaged or diminished, they are irreparably lost. Development along the Southern Routes is certain: witness the developers who are respondents in this proceeding.<sup>153</sup> In contrast, preserving trees and historical sites within the W&OD Park will preserve them for generations to come.<sup>154</sup>

The constitutional mandate that preceded enactment of Va. Code § 56-46.1 is especially pertinent here. It called upon the Commonwealth to “conserve, develop, and utilize its . . . *public lands*, and its historic sites and buildings . . . to the end that the people have . . . the use and enjoyment for *recreation* of adequate *public lands*,” and also called upon the Commonwealth “to protect its . . . lands . . . from . . . impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth.”<sup>155</sup> There could not be a clearer blueprint for determining that the Hamilton Route should not be routed within the W&OD Park, which is a

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A. Well, you can preserve a natural setting in a lot of places. I look at it and see Oatlands as a very limited place you can go to compared to a trail that’s free to all who come and say, hey, what is the value of one versus the other, particularly when I see no impact on Oatlands.

<sup>153</sup> See, e.g., Centex Respondent; Leesburg Luxury Homes Respondent.

<sup>154</sup> See, e.g. Hearing Exhibit 108 (deed for 13 acre 4-H property), Park Authority witness Rudacille, Tr. at 4332 (describing how the property deeded to the 4-H would go the Park Authority if the 4-H ever ceases to exist because “the Park Authority is likely to be around for a long time”).

public land that provides recreation and historic sites for the benefit, enjoyment, and general welfare of hundreds of adjacent families and thousands and thousands of visitors. Sparing the scenic and historic assets of the W&OD Park will preserve them for countless visitors for years to come; while sparing the scenic and historic assets along the Southern Routes will, in large part, simply preserve them until the next bulldozer comes along, or will preserve them for the enjoyment of property owners who post no trespassing signs.

As noted in the Park Authority's pre-filed testimony, using the W&OD Park for the Hamilton Line

means over 800 residents living along the Park will be negatively impacted by the loss of a pristine, wooded setting right outside of their backyards. Unlike any other route under consideration, the benefits of the W&OD Park's scenic assets and historic districts are enjoyed by millions of users, by hundreds of near-by homeowners, by local wildlife, and by the region as a whole.<sup>156</sup>

The status of the W&OD Park as a significant public resource, and the imperative not to imperil this public resource, is affirmed by the recommendations of the Department of Environmental Quality, the Department of Historic Resources, and the Department of Conservation and Recreation that the transmission line should not be sited within the W&OD Park. As noted by DCR,

Due to the unique nature and state and national significance of the trail and the park, the existing conditions of the corridor should be maintained in order to protect the park, recreational, and scenic values. Other advantages of maintaining both the W&OD Trail and the Scenic Byways are to protect the air quality of the area, provide opportunities for less stressful touring, to provide safe venues for exploring nature, and project the scenic assets that provide tranquil settings for future generations.

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<sup>155</sup> Va. Con. Art. XI, § 1.

<sup>156</sup> Tr. Exhibit 106 at 4.

This trail is a National Recreation Trail and should not be affected by construction activities, clearing of trees or other vegetation, or disruption of public or commuting use.<sup>157</sup>

## **5. Modified D**

### **(a) Overall Assessment**

Modified D route should be rejected because it has all of the disadvantages of routing on or near the W&OD Park (unacceptably high impacts on scenic assets, historical assets, recreational assets, residences, and public resources) and none of the advantages (lower costs imposed on the utility).

Modified D does reduce the impacts on the W&OD Park by removing three-quarters of the W&OD Park from the Hamilton Route. As compared to using the entire W&OD Park for the Hamilton Route, Modified D is better. However, that is not the proper comparison to make. Even the Hearing Examiner, who determined that the W&OD Park should be formally considered in this proceeding, indicated that using certain portions of the W&OD Park were essentially off the table because the impacts were too great.<sup>158</sup>

The proper comparison to make regarding Modified D is how it compares to routes outside the W&OD Park. When this comparison is done, Modified D, in any of its guises, simply makes no sense. There are numerous charts, maps, aerial photos, and panel discussions in the record concerning Modified D, but it does not take an extensive examination for the Commission to rule out consideration of Modified D. Focusing on two simple facts is sufficient to rule out Modified D.

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<sup>157</sup> Tr. Exhibit 145, Staff Report, Attachment 5, DEQ Coordinated Environmental Review, W&OD Trail Route, January 26, 2006 letter from DEQ to Mr. Peck, SCC Clerk regarding Supplemental Review of a 7<sup>th</sup> Alternative, Comments at 23-24.

<sup>158</sup> See, e.g. Hearing Examiner Anderson, Tr. at 2690 ("I don't think anyone here is advocating that this transmission line be routed through downtown Leesburg on the W&OD Trail. I think that has clearly been shown to be unreasonable and not feasible.") See Hearing Examiner Anderson, Tr. at 4989 (clarifying that the routes receiving further scrutiny were limited to E7 and the Modified D route).

The first fact is that Modified D drastically increases the negative impacts of the D routes. Modified D modifies the D routes by taking out segments 6, 22, 23, 25, 49, 49a, and 10a (the “Removed D Segments”) and replacing them with Trail B, which is 2.6 miles.<sup>159</sup> When you compare Trail B with the **entire** E 7 route, you end up with far more negative impacts on Trail B than on the E7 route in its entirety. When you compare Trail B section to Removed D Segments, the contrast is even more stark. In terms of environmental impacts, it makes no sense to avoid the Removed D Segments in order to replace them with the Trail B section. And going from Trail B to anywhere in that vicinity of the W&OD Park is, as Mr. Simmons puts it, “a zero sum game,”<sup>160</sup> or, as Mr. Sutliff describes it, “[e]verytime we pick up an advantage we pick up a disadvantage.”<sup>161</sup>

The second fact is that Modified D does not reduce Virginia Power’s costs: Virginia Power saves **no** money by using Modified D. In fact, Virginia Power ends up spending more money, even if the cheapest approach for Modified D is used and the Hamilton Line is entirely routed within Trail B. And Virginia Power spends this extra money without getting the advantages of a route that can be utilized for a double circuit to Middleburg. An exchange between Mr. Sutliff and Mr. Cox on the Modified D panel clearly illustrates this point:

Q. Is it fair to say that using the costing analysis that your group used, because I know it’s not your decision, that in taking—if we take the houses out of the equation, the cost of all these potential alignments is pretty close to identical? Given the margin of error.

A. Yes, relatively close, yes.

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<sup>159</sup> Hearing Exhibit 52 (showing Trail B is 13,520 feet).

<sup>160</sup> Park Authority witness Simmons, Tr. at 4531

[O]ne of the reason I haven’t paid much that attention to [Modified D], it seems to me it’s a zero sum game; we’re either going to move closer to the trail, take more of the trail’s trees, or we’re going to have the trade off of moving closer to the homes. And frankly, if you move closer to the homes, 145-foot poles I don’t think are going to be seen as a great improvement to those homeowners.

<sup>161</sup> Tr. at 3090.



Q. . . . But even if we do that, the Modified D is still slightly the highest because by the time we add the extra construction costs it's at the high end of this range. Is that a fair statement?

A. If you're considering [\$]30 million being the high, yes, and the [\$]26 [million] being the low.

...

Q. Okay. So—and the Modified D is at the higher end of that narrow range. I know I'm going back over what I said but I want to make sure I get it in the right sequence.

A. Right. They would be in line with the E7, and the D3, right.

...

Q. So, in summary of this part of my question, Modified D costs—is as expensive as any other route proposed and provides no Middleburg benefit compared to the other routes?

A. I would agree with that. <sup>162</sup>

Modified D takes the D routes and makes them much worse: it is more expensive, it removes any benefits related to future reliability improvements, and it increases the environmental impact. There is no reason to choose Modified D unless it is being used in lieu of using the entire W& OD Park, and that option should be taken off the table. <sup>163</sup>

#### **(b) Impact as Compared to Other Routes**

Modified D(7) would have 732 homes within 500 feet, and 20 of those homes would be within 100 feet. Modified D(8) would have 729 homes within 500 feet, and 20 of those homes would be within 100 feet. <sup>164</sup>

The only routes with more severe impacts are Route D2, with 874 homes severely impacted, including 5 within 100 feet, and a route located entirely within the W&OD Park, with 841 homes severely impacted, including 55 homes within 100 feet. <sup>165</sup>

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<sup>162</sup> Tr. at 3094-3096.

<sup>163</sup> See, e.g. Hearing Examiner Anderson, Tr. at 2690 (“I don’t think anyone here is advocating that this transmission line be routed through downtown Leesburg on the W&OD Trail. I think that has clearly been shown to be unreasonable and not feasible.”) See also Tr. Exhibit 145, Staff Report at 36 (suggesting consideration of certain portions of the W&OD Trail route but specifically excluding “the popular, heavily-canopied portion of the Trail west of Paonian Springs”). See Hearing Examiner Anderson, Tr. at 4989 (clarifying that the routes receiving further scrutiny were limited to E7 and the Modified D route).

<sup>164</sup> Tr. Exhibit 46 (Virginia Power chart summarizing impacts).

<sup>165</sup> Park Authority witness Rudacille, Tr. at 4335.

In comparison, the E7 route impacts 38 homes within 500 feet. The residential impacts imposed by the 15.8 mile E7 route are far less than the impact caused by the 2.1 mile Trail B' (7 homes within 100 feet, and 25 more homes within 500 feet) and are far less than the impacts caused by the 1.4 mile Trail B (3 homes within 100 feet, and 37 more homes within 500 feet).<sup>166</sup> What is particularly shocking about these impacts is that routing the Hamilton Line through roughly one-quarter of the W&OD Park at issue in this proceeding produces a worse residential impact than the entire E7 route. This demonstrates how extremely low the impacts are for the entire E7 route.

To accurately determine the impact of the Modified D route, however, the most crucial comparison is between the Trail B or Trail B' section and the Removed D Segments. The Removed D segments—those portions of the Hamilton Route that are avoided in order to move the route onto Trail B or Trail B'—impact 4 homes, none of which are within 100 feet.<sup>167</sup> This extremely low impact, coupled with the fact that the costs of Modified D are not lower for Virginia Power and coupled with the fact that using the Removed D sections would allow for use of a double circuit in the future, are evidence that the Commission should not give Modified D any serious consideration.

**(c) Measures to Mitigate Harm to W&OD Park**

Various measures are proposed to mitigate the harm caused by Modified D using the Trail B segment. These measures include placing the entire route within Trail B using 145 foot poles, or moving the 145 foot poles 40 feet off the northeast property line of the W&OD Park, or

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<sup>166</sup> Tr. Exhibit 52; Tr. Exhibit 49.

<sup>167</sup> Tr. Exhibit 52 (showing Segment 6 impacts no homes, Segment 22 impacts no homes, Segment 23 impacts no homes, Segment 25 impacts 1 home within 500 feet, Segment 49 impacts no homes, Segment 49a impacts no homes, and Segment 10a impacts 4 homes within 500 feet).

moving the 145 foot poles 80 feet off the northeast property line.<sup>168</sup> There are variations along these themes, which Mr. Sutliff christened the “killer Bs,” but the bottom line is that any measure that lessens the impacts on the W&OD Park will impose greater hardships on the Shenstone and Dry Mill homeowners, and conversely any measures that lessen the impact the homeowners will impose greater hardships on the W&OD Park. The simple truth is that transmission lines will require clearing trees, will require transmission poles to be either in children’s backyards or immediately adjacent to children’s backyards, and will destroy the park-like setting and jeopardize the historic nature of this portion of the W&OD Park.

Virginia Power is confident that it can handle any complexities imposed by the Modified D route. There is no question that Virginia Power is capable of implementing whatever engineering feats are required to install the transmission lines in or around Trail B. However, there are plenty of questions about how much the Park will suffer and how much the homeowners will suffer. And it is important to keep in mind that the Park and the homeowners will suffer significant hardships: the only question is to what degree.

All the concerns about construction within the W&OD Park described elsewhere in this Brief apply equally to construction within or around Trail B.

In addition, the Park Authority presented evidence that 145 foot poles would not alleviate the Park Authority’s concerns because, even under Virginia Power’s rosy scenario, 2500 square feet would be cleared around each pole at 145 foot intervals, entire species of trees would be eliminated, and the canopy would be cut back. The Park Authority believes the actual impact will be far greater than 2500 of cleared space and a reduced canopy and some tree clearing. Maneuvering equipment in the cut and fill sections will damage the trail and will jeopardize historic structures. The Park Authority’s experience with much less drastic transmission line

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<sup>168</sup> Tr. Exhibit 49 (narrative describing initial options for Modified D).

construction projects in sections of the trail that are much flatter has been dismal. A project of this magnitude will, quite simply, destroy the unique character of this portion of the W&OD Park, to the detriment of trail users and homeowners alike.

#### Cut and Fill Sections

The Trail B section of the W&OD Park is characterized by narrow cut sections and by narrow fill sections. The cuts average 20 to 25 feet in depth, and the fill sections are as high as 40 feet above the surrounding land. In the cut sections, the width of the trail is about 8 feet wide: these sections are so narrow that the asphalt trail is in the cut section and the gravel trail runs at the top of the hill above the cuts.<sup>169</sup> The width at the top of the fill sections is about 12 feet wide—it accommodates the 8 foot asphalt trail and a 4 foot gravel trail. Although the width of the fill section is slightly wider than the width of the cut section, its edges can be unstable.<sup>170</sup> The narrow constraints of this topography makes these features of the W&OD Park very vulnerable to the use of heavy equipment and raise concerns that such equipment will damage these features, which are an integral aspect of the historic railroad bed.

#### Impact on Trees

This constrained topography also makes it unlikely that 145 foot poles will enable many trees to coexist with the poles. Poles located within cuts, which occupy about half the length of Trail B,<sup>171</sup> will require even those trees that are not completely eliminated based on their species or based on their being within the 2500 foot cleared space around each pole to be severely cut

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<sup>169</sup> Park Authority witness McCray, Tr. at 4148-4169; Tr. Exhibit 99 (showing a cross section of a cut section and a fill section); Tr. Exhibit 100 (showing trail elevations along Trail B).

<sup>170</sup> Park Authority witness McCray, Tr. at 4184-4185 (“One time I was out in that area west of Leesburg doing some mowing on a large tractor and I got a little too close to the edge of the fill and the fill crumbled beneath my wheels and I was able to pull back onto solid ground.”)

<sup>171</sup> Park Authority witness McCray, Tr. at 4170.

back, as shown in the graphic titled "Section A with 145' Tower."<sup>172</sup> The ultimate result is the removal of the canopy and its replacement with tall stumps:

I can describe to you what has happened in other places, what we're left with is a tall stump. You're cutting most of the canopy out of the tree, it will kill roots, it opens the tree to disease, to invasion from insects, and it's not going to allow the canopy to regrow. We have a canopy there now. It's one of the things that people really like about this section of the trail, but this isn't going to preserve the canopy.

What we'll probably end up with is trees that will soon die after they are cut and could become a hazard to trail users, could be den trees for birds because after they die, birds will start digging into them. But it's not going to screen the trail, it's not going to be effective at preserving the canopy at all.<sup>173</sup>

A significant portion of trees will be removed outright. Based on the species that Mr. Hoover identified and the new information that Ms. King provided, 42% of the species, representing about 40% of the trees, would be removed from this portion of the Park, and all but two of the species remaining in Ms. King's chart—55%-- would be cut back.<sup>174</sup>

Due to the tree trimming on the slopes of the cut sections, and due to the removal of many of the trees based on their species, the Trail B segment "will lose just about all of [its] tree cover and all of the issues that go along with that: loss of scenery, loss of landscaping, loss of shade."<sup>175</sup>

#### Prior Experience

Prior experience with other transmission line construction projects also suggests that construction within or along Trail B will not preserve trees or preserve Park property from damage. Even working with the best of intentions, Virginia Power was not able to provide the

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<sup>172</sup> Tr. Exhibit 101.

<sup>173</sup> Tr. at 4170.

<sup>174</sup> Park Authority witness Rudacille, Tr. at 4294; Tr. Exhibit 102 (discovery response containing tree count); Tr. Exhibit 103 (tree count chart).

<sup>175</sup> Park Authority witness McCray, Tr. at 4176.

buffer required in a previous transmission line project, and the final result was the removal of “a very thick stand of cedar trees both on the northern property line and also the median between [the] two trails” and their replacement with “small understory species like dogwood and redbuds, and it’s going to have a much different character from . . . what was there before they started the project.”<sup>176</sup> Similarly, replacement trees planted by Virginia Power following its extensive clearing campaign will never replicate the trees that have been cleared because they are lower story trees that never get above 15 feet and cannot provide screening; in addition, areas disturbed by clearing often become overrun by invasive vines.<sup>177</sup> Finally, in previous construction projects within the W&OD Park, the parties agree on plans to work together to get the project done safely and without damaging the environment and the trail facilities, but then Virginia Power’s contractors “do the expedient thing rather than the safe thing or rather than the construction method that will preserve something from being damaged.”<sup>178</sup> These previous construction projects were on a much smaller scale and in a much less fragile section of the W&OD Park, where the terrain was much flatter and not characterized by cut and fill sections.<sup>179</sup>

## 6. Conclusions Regarding Environmental Impacts

A recent Commission decision concerning transmission line routing in Loudoun County rejected a “shorter and less expensive” route because it would have “a significant and detrimental visual impact on existing homes and businesses” and because the alternate route “will not impact any existing homes and should be able to take advantage of terrain and vegetation to lessen its impacts on scenic assets.”<sup>180</sup> The Commission explained its rejection of the shorter and less

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<sup>176</sup> Park Authority witness Rudacille, Tr. at 4338.

<sup>177</sup> Park Authority witness McCray, Tr. at 4200-4202.

<sup>178</sup> Park Authority witness McCray, Tr. at 4203.

<sup>179</sup> Park Authority witness McCray, Tr. at 4203.

<sup>180</sup> Order Granting Approval and Remanding for Further Proceeding, dated June 27, 2002 Application of Virginia Electric and Power Company d/b/a Dominion Virginia Power for a certificate of public need and necessity for

expensive route by noting that “[s]uch individual criteria . . . are not dispositive.”<sup>181</sup> This same reasoning should lead the Commission to reject the Northern Routes and to adopt the Southern Routes for the Hamilton Line.<sup>182</sup>

Another recent decision concerning transmission line routing in Loudoun County rejected a “shorter and cheaper” route, reiterating the Commission’s determination in the Phase I proceeding that “such individual criteria are not dispositive.”<sup>183</sup> In addition, the decision rejected a route “which would utilize an existing right-of-way along a gas line corridor”<sup>184</sup> because it would “adversely affect Loudoun County and its land use plan for densely populated residential and commercial development, would negatively impact a large number of residential homes and the Brambleton Regional Park, [and] would not reasonably minimize adverse impacts.”<sup>185</sup> This same reasoning would lead the Commission to reject the Northern Routes and to adopt the Southern Routes for the Hamilton Line.<sup>186</sup>

These decisions support a finding that the Southern Routes are a better place to route the Hamilton Line. In addition to the factors already discussed, another important issue is mitigation. Trying to implement mitigation measures with the W&OD Park will essentially put the Commission back 150 years in terms of line siting technology: the lines would be based on the best place to install a railroad bed and could not take advantage of all the recent

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facilities in Loudoun County: Beaumeade-Beco 230 kV Transmission Line and Beaumeade-Greenway 230 kV Transmission Line, PUE-2001-00154 (“Phase I Proceeding”) at 5.

<sup>181</sup> Order Granting Approval, Phase I Proceeding at 5.

<sup>182</sup> The longer and more expensive route selected by the Commission did utilize a 0.6 mile portion of the W&OD Park, but that portion was in the eastern section of the Park already encumbered by existing transmission lines.

<sup>183</sup> *Final Order, Phase II Proceeding*, at 12.

<sup>184</sup> *Phase II Proceeding, Final Order*, at 9.

<sup>185</sup> *Phase II Proceeding, Final Order*, at 10.

<sup>186</sup> The W&OD Park was also considered as a possible route for the transmission line approved in the Phase II Proceeding. It was rejected early in the selection process by Virginia Power and was seriously considered by Staff but was ultimately rejected by Staff because “the route pass[ed] through a highly congested residential area” and because it was “unsuitable for a double-circuit line since that would require the widening of the right-of-way, and the deviation of the right-of-way off the Trail.” Staff Report, Phase II Proceeding, dated August 6, 2003 at 45.

improvements in line siting. The E7 route, by comparison, was based on an extensive study by Burnes & McDonnell that used modern techniques to locate a line with remarkably few impacts in comparison with the W&OD Park route.<sup>187</sup>

#### **D. Reliability**

##### **1. Evidence Concerning Physical Attributes of Hamilton Line**

Staff concluded that using a shorter route within the W&OD Park would “maximize reliability.”<sup>188</sup> Mr. Simmons, whose testimony was not refuted and who has had more experience with the design, construction, maintenance, and operation of transmission lines than any other witness in this proceeding, determined that “reliability would not be affected in any significant way” by using a route within the W&OD Park. The basis for his conclusion was that “the [E7] route is slightly longer, but it will utilize more structures. And, of course, more maintenance problems or reliability problems are associated with structures.”<sup>189</sup>

##### **2. Evidence Concerning Hamilton Line and Transmission Planning**

###### **a. Authority to Consider Future Planning**

Looking at the Hamilton Line in the context of future transmission planning is entirely appropriate given the Commission’s statutory obligation to “consider any improvements in service reliability that *may* result from construction of such facility.”<sup>190</sup> To do this properly, the Commission needs to consider future transmission planning information, including likely transmission upgrades in Loudoun County. The fact that these are future upgrades, and thus are, theoretically, subject to change, should not preclude the Commission from working with the best

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<sup>187</sup> Park Authority witness Simmons, Tr. at 4491.

<sup>188</sup> Tr. Exhibit 145, Staff Report at 46.

<sup>189</sup> Park Authority witness Simmons, Tr. at 4414.

<sup>190</sup> Va. Code § 56-46.1.A.



available information it has now. The Commission's statutory obligations extends to improvements that "may" occur: absolute certainty is not required.

In addition, the Commission's consideration of future planning in a previous proceeding was acceptable to the Virginia Supreme Court,<sup>191</sup> and the Commission recently ruled in the Phase II proceeding that Virginia Power should provide the Staff with long-range planning information.<sup>192</sup>

Finally, the Commission's authority to consider future planning is consistent with the notion that it does not make sense for Commission to receive information and then not consider that information in matters impacting future planning. Theoretically, circumstances over the next ten to fifteen years may change,<sup>193</sup> but the Commission has asked for future planning information presumably because such information is useful, and it is inappropriate for a state agency with the amount of expertise contained in the Commission to ignore relevant information.

**b. Support in Record for Consideration of Future Planning**

It is also appropriate to consider the impact of the Hamilton Line on reliability in the future because these issues were raised in the Application<sup>194</sup> and were addressed in

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<sup>191</sup> Campbell at 926 (citing the Commission's consideration of future interconnections and consideration of a future transmission line).

<sup>192</sup> Final Order, Application of Virginia Electric and Power Company for a certificate of public need and necessity for facilities in Loudoun County: Brambleton-Greenway 230 KV Transmission Line, PUE-2002-00702 (October 8, 2004) (adopting hearing examiner's finding regarding Virginia Power working closely with Staff on long range planning in Northern Virginia)

<sup>193</sup> See Virginia Power witness LaVigne, Tr. at 1543 (assuming a 2008 in-service date and estimating 2020 with 2 years in either direction).

<sup>194</sup> Tr. Exhibit 20, Appendix at 3

Any new transmission facilities in the Western Loudoun County Area should consider the long-range needs of the larger region. . . As load and reliability concerns require, the new 230 kV line would be extended south to connect to the Middleburg substation. This line extension would create a network configuration and provide additional transmission reliability to Middleburg Substation and the Cedar Grove and Arcola NOVEC delivery points and the proposed Hamilton Substation. . . . In this way, the proposed facilities will facilitate long term planning to assure reliable service to the entire area west of Route 15 in Loudoun, Fauquier, and Prince William Counties.

Tr. at 4550-4551, cross examination of Mr. Simmons by Mr. Wolf:

Staff's review of the Application.<sup>195</sup> The Hearing Examiner clearly determined that information concerning future transmission planning was relevant.<sup>196</sup> Consideration of a possible Middleburg—Hamilton circuit does not amount to Commission approving a Middleburg line: the need for the line and the exact location of the line will all be determined when appropriate, as noted in the Staff Report's discussion of the Middleburg line: "the unused circuit position on the other side of the poles would be available to use, *subject to Commission approval*, at the time of construction of a Middleburg-Hamilton 230 kV circuit."<sup>197</sup>

In addition, consideration of a future Middleburg line, which is not being approved in this Application, does not mean that a line which is not in the Application has dictated where the Hamilton Line should be placed. Virginia Power clearly established that the Southern Routes were selected independent of any consideration of Middleburg, and it was only after that

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Q. [W]here could you find in the Company stating [in the Application] that the future for a Middleburg line is a factor that--

A. Oh, I understand. The first time I became aware of it was the fact they were going to buy the larger right-of-way to accommodate a double circuit. Then it became obvious they made that decision to at least make provision for a possible use of that corridor for a line down to Middleburg.

Q. It became obvious, but did they specifically say it?

A. You know, I don't think anyone specifically told me that until I heard it at the hearing. I think the Staff made reference to it in the Staff report. But frankly, you know, it doesn't take a genius to figure if your buying sufficient right-of-way to set poles capable of taking a double circuit and you also know that you have—the plans also have told you there's going to be a need for a future line, even I'm capable of connecting those dots.

<sup>195</sup> Tr. Exhibit 145, Staff Report at 3 (discussing future construction of Middleburg-Hamilton 230 kV circuit) and at 5 (discussing future networking of Hamilton using a Middleburg-Hamilton transmission circuit).

<sup>196</sup> See, e.g. Tr. at 1547, during cross examination of Mr. LaVigne:

The Hearing Examiner: Well, it's very clear to right up front, an advantage of the E7 route is that you're creating an existing right-of-way for the next transmission line.

The Witness: . . . having that right-of-way, be it one mile, two mile, three mile, that makes John Bailey's life so much easier.

The Hearing Examiner: That much easier. And with the way things have been going in Loudoun County, this next line is not going to be easy. So certainly, you know, the fact that E7 could be used at least partially as a future right-of-way certainly carries weight, and I'm all ears.

<sup>197</sup> Tr. Exhibit 145, Staff Report at 3 (emphasis added).

selection that the Southern Routes were tweaked to take advantage of what they offered for future transmission planning.<sup>198</sup>

Finally, if the Commission considers the use of existing rights-of-way to be a significant factor in examining transmission line routing, it does makes sense to consider how use of the Southern Routes would ultimately maximize the use of existing rights-of-way for transmission lines in Loudoun County via use of a double circuit.

**c. Implications of Considering Future Planning**

Using the Southern Routes will lessen the number of miles of new transmission lines in Loudoun County, would maximize use of existing rights-of-way by having two lines share the same route, and will make the siting of future lines less costly and less contentious.

Mr. Simmons determined that, if an interconnection with Middleburg is considered, using the W&OD Park would result in 18.5 miles of new transmission line as compared to 14 miles of new transmission lines required if the E7 route were selected.<sup>199</sup> This determination was not refuted. Mr. Simmons considered it appropriate for the Commission to consider the future need to network the Hamilton substation, which would require a second transmission line from Middleburg, a town located south of the Hamilton substation:

I certainly think this is prudent . . . I commend Virginia Power for electing to plan on using structures that will handle a double circuit because it certainly seems prudent both from making it easier to improve the reliability with the networking, it will certainly reduce the cost, and it will have a tremendous reduction in the environmental impact in total on southern Loudoun County.<sup>200</sup>

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<sup>198</sup> Cross by Ms. Cochran of Mr. Welter, Tr. 2595-2596 (indicating that considerations of Middleburg had “zero” impact on the routes selected during the study process and on the whittling down the routes *See also* Simmons response to cross by Wolf concerning Virginia Power’s consideration of Middleburg: “[W]hat they did is once the study was out there, they saw the advantage and decided to make a provision for a double circuit. I think what I’m saying, in order to avoid biasing Burns & McDonnell’s study of routes, they did not make aware of the possibility until after the study was complete.”

<sup>199</sup> Tr. at 4417.

<sup>200</sup> Tr. at 4417.

As noted by the Staff, “if a future Middleburg—Hamilton line can share some of Pleasantview—Hamilton’s right-of-way, the siting of the Middleburg-Hamilton line could be less costly and less contentious, at least with respect to the portion of the route that would share right-of-way.”<sup>201</sup> Any reliability concerns that may arise from placing two circuits on single RoW would quickly be alleviated by future upgrades to transmission facilities that soon follow the Middleburg upgrade.<sup>202</sup>

In essence, using a Southern Route would avoid having the worst of both worlds, where the northern and southern segments of the Study Area will be impacted by transmission lines. Using a Northern Route would impose large impacts on the northern segment of the Study Area now but would ultimately not spare the southern segment of the Study Area. Instead, using a Northern Route would exacerbate the impact on the southern portion of the Study Area because transmission lines would be imposed after significant development has occurred, providing much less opportunity for mitigation. As Mr. Ruffner testified, subdivisions that have the opportunity to design around an existing transmission line are better able to mitigate the impacts of the line.<sup>203</sup>

### 3. Conclusions Regarding Reliability

Looking at the Hamilton Line in isolation, without considering the implication of a possible Middleburg line in the future, supports a finding that the Hamilton Line will be just as

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<sup>201</sup> Tr. Exhibit 145, Staff Report, at 18.

<sup>202</sup> Tr. Exhibit 145, Staff Report, at 5 (noting that plans based on forecasted load growth call for networking of Hamilton in 2020 using a Middleburg-Hamilton 230 kV transmission circuit and then more strengthening of the network in 2022 with the construction of a 138kV Lovettsville-Hamilton transmission circuit).

<sup>203</sup> See cross of Ruffner by Robb (discussing South Wales subdivision):

Q. And you mentioned that you thought the subdivision was fairly well designed around the line: did I understand that correctly?

A. They tried to make their open space parcels around the power lines so it wouldn’t be near the houses and let the trees grow.

Q. So the fact that the power line was there first let them figure out how best to work around it: is that—

A. Well, yeah, of course, yes, ma’am.

reliable if it is routed along E7 as compared to routing it within the W&OD Park. Looking at the Hamilton Line in the context of future transmission planning, which is entirely appropriate given the Commission's statutory obligation to "consider any improvements in service reliability that *may* result from construction of such facility,"<sup>204</sup> demonstrates that using a Southern Route rather than a Northern Route will improve service reliability, reduce the amount of land in Loudoun County that is encumbered by transmission lines, maximize the effective use of rights-of way, and minimize the impacts of transmission lines. The success in the siting of a Hamilton to Middleburg line will be greatly enhanced if there is a substantially reduced impact on a major portion of the rapidly developing western area of Loudoun County. Success in siting and constructing such a line would provide a major improvement in reliability to customers served from both Hamilton and Middleburg substations.

#### **E. Economic Development**

##### **1. Evidence Regarding Economic Development**

The Study of Trail Users included in the Park Authority's pre-filed testimony demonstrates that the Park has a positive impact of the quality of life in Northern Virginia, and easy access to the Park is an amenity that influences housing choices by those who enjoy using the Park or simply enjoy close proximity to a natural environment.<sup>205</sup>

The Department of Conservation Study determined that the W&OD Park contributes about \$12 million of recreation expenditures annually, and also found that the net economic benefit to Park users—the amount of welfare that users would lose if the Park were

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<sup>204</sup> Va. Code § 56-46.1.A.

<sup>205</sup> Tr. Exhibit 98, McCray Pre-filed Testimony, at 7; Tr. Exhibit 98, Appendix I (Study of Trail Users).

unavailable—ranges from \$14.1 million to \$21.6 million, and that estimate is conservative because it excludes commuters and ancillary visitors.<sup>206</sup>

## **2. Conclusions Regarding Economic Development**

None of the Park-wide numbers for visitors or economic benefits have been isolated to account for the precise impact of the 11 mile portion of the Park at issue in this proceeding. However, the public outcry that led to Virginia Power not including the Park in any of the routes it proposes indicates the significance this section of the Park to the general public, and damage to this section of the Park would logically impact the economic benefits the Park provides.

### **F. Undergrounding**

Undergrounding within the W&OD Park would harm the historical features of the Park described elsewhere in this Brief. Any trenching activities that might take place over the top of stone culverts or boxes could easily destabilize these structures. Also, drainage would become a problem if these are destabilized and erosion occurs. The undergrounding proposal submitted by Mr. Lanzalotta in his prefiled testimony for Loudoun County does not raise these concerns because he recommends using a route that does not utilize the W&OD Park.<sup>207</sup>

### **G. Minimizing Park Impact**

The steps for minimizing impact for any route chosen by the Commission outlined in Mr. Simmons' prefiled testimony should be adopted by the Commission.<sup>208</sup>

## **V. Relief Sought**

For all the reasons stated above, the Park Authority respectfully asks that the Commission approve a route for the Hamilton Line that does not site transmission facilities within the W&OD Park or immediately adjacent to the W&OD Park. In the alternative, should the Commission

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<sup>206</sup> Tr. Exhibit 98, McCray Pre-filed Testimony, at 7; Tr. Exhibit 98, Appendix H at 21, at 24 (DCR Study).

<sup>207</sup> Park Authority witness McCray, Tr. at 4197.

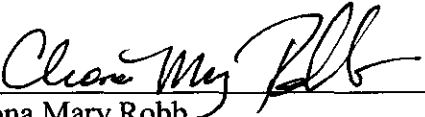
decide that additional facilities must be located within the Park, then the Park Authority respectfully asks that Virginia Power be directed to work with the Park Authority in minimizing the impacts of any additional facilities on the scenic, wildlife, recreational, and historic resources of the Park.

Respectfully submitted,

**NORTHERN VIRGINIA REGIONAL PARK AUTHORITY**

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September 18, 2006

Exhibit A to Park Authority Brief

Summary of Ruffner Damage to Residue  
**bold= no houses**

Parcel	Total Size	RoW acreage	\$ for RoW	Damage to Residue
1	28.47 acres	.915 acres	\$27,450	\$0 (Dulles Greenway)
2	95.18 acres	2.845 acres	\$71,125	\$461,675 (20%)
3	60.43 acres	1.025 acres	\$34,850	\$195,000 (10%)
4	12.92 acres	1.340 acres	\$33,500	\$57,900 (20%)
5	30.16 acres	1.548 acres	\$40,250	\$73,750 (10%)
6	31.31 acres	1.718 acres	\$44,700	\$76,860 (10%) Orme Farm
7	2.6 acres	.096 acres	\$13,662	\$111,300 (30%); house
8	122.75 acres	.349 acres	\$9,800	\$ 174,205 (5%); house (OrmeF)
9	470.21 acres	8.719 acres	\$122,066	\$741,000 (10%); 3 houses (Cammac Bros.)
10	21.13 acres	.956 acres	\$24,856	\$52,400 (10%) Orme Farms
11	15.39 acres	2.492 acres	\$82,236	\$216,200 (30%) house
12	245.55 acres	4.929 acres	\$98,580	\$500,000 (10%)
13	72.14 acres	6.223 acres	\$124,460	\$611,500 (30%) numerous houses & outbuildings
14	26.05 acres	.001 acres	\$30	\$781,470 (30%)
15	252.71	6.549 acres	\$91,686	\$690,000 (20%)
16	13.68	.076 acres	\$2,280	\$230,000 (30%); house
17	147.25 acres	8.886 acres	\$177,720	\$830,300 (30%)
18	24.32 acres	.417 acres	\$12,927	\$741,000 (10%)
19	14.41 acres	.320 acres	\$9,600	\$366,700 (30%); house
20	3.64 acres	.309 acres	\$25,492	\$120,000 (40%); Sale to a builder; highly active residential market in this area
21	.658 acres	.658 acres	\$23,030	\$480,200 (30%); house
22	20 acres	3.587 acres	\$100,436	\$230,000 (50%)
23	10 acres	.416 acres	\$12,480	\$251,256 30% (house)
24	12.75 acres	.248 acres	\$7,440	\$240,000 30% (house)
25	10 acres	.269 acres	\$8,070	\$185,000 30% (house)
26	13.97 acres	1.793 acres	\$53,790	\$183,105 50%
27	10.01 acres	1.239 acres	\$37,170	\$105,158 40%
28	13.6 acres	1.970 acres	\$59,100	\$209,340 60%
29	0.62 acres	.018 acres	\$3,900	\$237,050 50% house
30	3.48 acres	0.010 acres	\$1,050	\$272,950 40% house
31	11.46 acres	.900 acres	\$27,000	\$126,800 40%
32	20.74 acres	2.788 acres	\$86,428	\$278,300 50%
33	54.13 acres	2.593 acres	\$41,500	\$329,800 40%
34	10.78 acres	1.579 acres	\$47,370	\$211,000 40% house
35	11.46 acres	1.127 acres	\$34,937	\$128,000 40%
36	10.05 acres	2.466 acres	\$76,446	\$116,750 50%
37	49.07 acres	3.833 acres	\$61,328	\$373,800 30% 2 houses
38	12.29 acres	1.162 acres	\$34,860	\$100,000 30%
39	11.8 acres	1.059 acres	\$31,770	\$96,730 30%
40	116.73 acres	3.862 acres	\$108,136	\$342,000 10%; 2 houses
41	13.94 acres	2.482 acres	\$76,942	\$213,000 60%
42	15.5 acres	.091 acres	\$3,185	\$54,300 10%
43	10.09 acres	.718 acres	\$21,540	\$111,500 40%
44	12.59 acres	2.708 acres	\$81,240	\$148,250 50%
45	23.67 acres	1.792 acres	\$55,552	\$340,000 50%
46	6.34 acres	.534 acres	\$48,600	\$263,200 50%




47	144.13 acres	4.735 acres	\$123,111	\$1,657,000 40%: 2 houses
48	10.91	0.234 acres	\$7,020	\$33,000 10%
49	11.61 acres	1.046 acres	\$31,380	\$364,300 50% house
50	5 acres	0.113 acres	\$9,040	\$61,000 10% house
51	24.45 acres	1.220 acres	\$37,820	\$72,000 10%
52	19.51 acres	.023 acres	\$529	\$145,000 10%; house
53	152.26 acres	5.441 acres	\$141,466	\$1,143,500 30%
54	99.41 acres	1.711 acres	\$47,908	\$272,000 10%
55	153.11 acres	5.181 acres	\$134,706	\$1,145,294 30% ; house
56	105.16 acres	1.295 acres	\$33,670	\$270,000 10%
57	350.6 acres	2.309 acres	\$34,635	\$583,000 10%; 2 houses
58	12.98 acres	0.140 acres	\$4,200	\$38,200 10%
59	111.46 acres	1.450 acres	\$40,600	\$310,000 10% [barn]
60	108.70 acres	2.743 acres	\$71,318	\$306,000 10% 2 houses; outbldgs.
61	313.44 acres	5.477 acres	\$82,155	\$799,000 15% 3 houses
62	144.13 acres	3.074 acres	\$76,850	\$1,000,000 30%
63	100 acres	4.046 acres	\$113,288	\$806,000 30%

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**CERTIFICATE OF SERVICE**

I hereby certify that a true copy of the foregoing *Post-Hearing Brief* was hand-delivered and/or emailed and/or mailed, first-class postage prepaid, this 18<sup>th</sup> day of September, 2006, to the following:

  
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