COMPANIES/ORGANIZATIONS COMMENTS

CO88 – Wild Virginia

April 6, 2017

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Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426
Submitted Via FERC eFiling Feature on the FERC Web Site

Re: Comments on DEIS for the Atlantic Coast Pipeline Proposal, FERC Docket No. CP15-554-000, In Response to Notice of Availability of Draft Environmental Impact Statement for the Atlantic Coast Pipeline, December 30, 2016

Dear Mr. Davis:

I am transmitting the comments included in this document on behalf of Wild Virginia, Heartwood, Ernest Q. Reed, Jr., Misty Boos, and David Sligh, in response to the referenced Notice of Availability of the Draft Environmental Impact Statement ("Notice").

Thank you for accepting these comments.

Sincerely,

_____/s/_____
Ernest Q. Reed, Jr.

Z-2134

for
Atlantic Coast Pipeline
Docket No. CP15-554-000
From Wild Virginia, Heartwood, Ernest Q. Reed, Jr., Misty Boos, and David Sligh

Introduction

The above-named organizations and individuals (collectively "Wild Virginia"), all intervenors on Docket CP15-554-000, strongly object to the approval of the proposed Atlantic Coast Pipeline ("ACP") by the Federal Energy Regulatory Commission ("FERC" or the "Commission"). Through these comments, we explain the reasons FERC may not legally issue the requested Certificate of Public Convenience and Necessity ("Certificate"), based on both procedural and substantive grounds.

CO88-1

Wild Virginia also objects to the proposed issuance of a Special Use Permit ("SUP") to Atlantic Coast Pipeline, LLC ("Applicant") for crossings of National Forest lands, and to related proposals to amend the Land and Resource Management Plans ("plan Amendments") for the Monongahela National Forest ("MNF") and the George Washington National Forest ("GWNF"). These include proposed project-specific plan amendments for both forests and "plan-level" amendments for the GWNF. The proposals for these administrative actions cannot be upheld, based on procedural violations in the current administrative process and because the proposals would cause unacceptable damages and risks to humans and the environment. The environmental review process now underway flagrantly violates the National Environmental Policy Act ("NEPA"); the construction, operation, and maintenance of the pipeline and associated activities (roads, work spaces, etc.) would violate the procedural requirements and resource protection requirements that the United States Forest Service ("FS" or the "Service") is charged with upholding.

In the following sections, we describe some of the ways that the DEIS is inadequate and fails to meet legal standards. Reports and comments already in the record to inform FERC and the FS illustrate a multitude of other issues ignored or poorly represented in the DEIS. In addition, we describe the ways in which the impacts of the proposed project would be unacceptable and fail to satisfy regulatory environmental protection standards and to serve the public interest.

Incomplete Record to Support Decisions and Adequately Inform the Public

CO88-2

FERC has failed to meet its obligations for review of this project under the National Environmental Policy Act ("NEPA"), by failing to compile and include necessary information in the DEIS. The Draft Environmental Impact Statement ("DEIS") now under review fails to meet legal standards which govern its content and quality.

FERC has undertaken a process under NEPA to review a proposal by Applicant to construct, operate, and maintain a 42-inch natural gas pipeline through portions of West Virginia and Virginia. In pursuance of its duties under NEPA, FERC published a Draft Environmental Impact Statement ("DEIS") and a notice requesting public comments on the DEIS on December 30, 2016. Federal regulations implementing NEPA command that a DEIS "must fulfill and satisfy ***to the fullest extent possible*** the requirements established for final statements in section 102(2)(C) of the Act." 40 C.F.R. § 1502.9(a) (emphasis added). FERC's DEIS for the ACP fails to meet this mandate in a number of respects, as described below. Of special note, by explicitly deferring requirements for Applicant to supply information needed in the DEIS to the end of this comment period, FERC has clearly violated 40 C.F.R. § 1502.9(a). If FERC deemed it possible in December, 2016 for Applicant to submit necessary

CO88-1 FS response: The opposition to the special use authorization and plan amendments by the FS is noted. The FS will make a draft decision based on the final EIS and share that with the public when the final EIS is released. See also responses to comments CO5-1 and LO49-3.

CO88-2 See the response to comment CO6-1.

CO88-2 (cont'd) materials within the short time the public comment period runs, then it was clearly possible for FERC to take the time needed to get this information and incorporate it into the DEIS before issuing the document. Instead, FERC rushed publication of the DEIS to meet an arbitrary schedule set to serve only Applicant's interests and in response to pressure from Applicant.

CO88-3

The Forest Service has independent authorities and duties for this project proposal (to rule on the SUP application and Plan Amendment proposals), including fulfillment of all NEPA requirements and requirements in the Service's governing laws. Under NEPA, the Forest Service is acting as a "cooperating agency" in this EIS process. As such, the Forest Service may adopt FERC's DEIS, as provided at 40 C.F.R. § 1506.3(c), only if that document meets both the substantive and procedural requirements that govern its regulatory decisions. These requirements arise from NEPA and from the agency-specific regulations that govern the Service's resource protection duties. If the FERC DEIS fails to meet those requirements, as is amply proven by the record, then the Forest Service must undertake its own separate NEPA review. The current FERC DEIS fails as a basis for meeting the Forest Service's responsibilities under both NEPA and the agency's own regulations. Therefore, a revised and sufficient DEIS must be prepared, either in cooperation with FERC or through a separate action.

The materials submitted by Applicant to support its request for a SUP and associated Forest Plan amendments to "occupy and use" National Forest System lands fall far short of the regulatory requirements that specify the information and justifications that must be submitted to allow the permit and Plan amendments to be approved. The failure of the DEIS to provide this information, at this stage in the NEPA process, also prevents these agencies from meeting their procedural duties under NEPA and agency requirements, because, even if the deficiencies were to be remedied at a later time, the public will have been deprived of its rights to review the necessary information and make effective comments in time for those comments to be fully considered and addressed in the Final Environmental Impact Statement ("FEIS").

Under law, the applicant bears the burden of supplying sufficient information and analyses to meet all applicable requirements. Likewise, the law places the burden on the federal agencies adopting a DEIS to provide a "detailed" review of the pertinent information and explain the bases for their decisions. Both Applicant and FERC have failed to meet their respective burdens of evidence.

The decision on ACP's application for a special use permit to "occupy and use" National Forest System lands is governed by federal regulations at 36 C.F.R. § 251.54. Under the regulations, the applicant must submit, "at a minimum," information detailed at 36 C.F.R. § 251.54(e). In addition, the Forest Service may allow the ACP to occupy or use National Forest lands "only if" these agencies make specific findings in accordance with the Forest Service Manual ("FSM"). The requisite findings, in pertinent parts, are that:

> a. The proposed use is consistent with the mission of the Forest Service to manage National Forest System lands and resources in a manner that will best meet the present and future needs of the American people, taking into account the needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific, and historical values; and
> b. The proposed use cannot reasonably be accommodated on non-Natural Forest System land. . . .

FSM 2703.2(2).

CO88-3 FS response: Since the draft EIS, Atlantic has provided additional information and analyses as requested by the FS to evaluate the effects of the proposed project. The FS has worked with Atlantic to develop project design features, mitigation measures, and monitoring procedures to ensure that NFS resources are protected as much as possible. The determination that the EIS is sufficient to meet FS NEPA obligations will be made in the FS ROD for the plan amendments decision.

CO88-3 (cont'd)

The record does not include information conforming to the minimum requirements set out in 36 C.F.R. § 251.54(c) and is wholly inadequate to justify the findings required by the Forest Service Manual. As demonstrated by the requests for information made by the Forest Service, many of which were not adequately answered before the DEIS's release and are still not met, and by deficiencies identified and documented in the record by Wild Virginia and other parties, the Applicant has failed or refused to provide the necessary information and analyses. The evidence, in fact, indicates strongly that the threshold requirements for issuing a Special Use Permit cannot be met, as shown in part in the discussion of water quality threats below.

CO88-4

1. By letter dated October 24, 2016, Clyde Thompson, Forest Supervisor, Monongahela National Forest (Docket submittal no. 20161025-5044) requested Applicant to provide "site specific design of stabilization measures in selected high-hazard locations along the proposed ACP Project route." The Forest Service explained in its letter that the proposed ACP "would cross some very challenging terrain in the central Appalachians" posing "[p]otentially difficult situations," including "steep slopes, presence of headwater streams, geologic formations with high slippage potential, highly erodible soils, and the presence of high-value natural resources downslope of the high hazard areas."

   The Forest Service substantiated it concerns, noting that "[s]imilar hazards on other smaller pipeline projects in the central Appalachians have led to slope failures, erosion and sedimentation incidents, and damages to aquatic resources." The possibility that similar problems would occur for this much larger pipeline, according to the Forest Service, "could present a high risk of failures that lead to resource damage."

   The October 2016 letter was not the first time the Forest Service had raised these issues. In fact, the agency has insisted that these potential problems be assessed through extensive and detailed comments and requests for information, from its earliest involvement in this process. Those questions have been met by Applicant with "general descriptions and conceptual drawings" of methods proposed to stabilize slopes and control erosion/sedimentation.

   The Forest Service makes clear that the requested information for high hazard sites is necessary for it to deem the application for a Special Use Permit complete and ready for further processing and that the information is necessary to "clarify the likelihood that the ACP can be constructed through the George Washington National Forest without undue risk of resource damage." Given these findings, the analyses in the DEIS cannot be considered adequate to meet the Forest Service requirements under NEPA.

   The deficiencies identified implicate several portions of the requirements the agencies must satisfy. First, one of the minimum requirements contained in the regulations is that the applicant must "provide sufficient evidence to satisfy the authorized officer that the proponent has, or prior to commencement of construction will have, the technical and financial capability to construct, operate, maintain, and terminate the project for which authorization is requested. . . ." Without knowing, in detail, how the hazards identified will affect the pipeline's construction and maintenance, whether the technical challenges can be surmounted, and, if so, at what cost, the Forest Service cannot deem this minimum requirement to have been met. In expressing the need to "clarify the likelihood that the ACP can be constructed through the George Washington and Monongahela National Forests without undue risk of resource damage," the Forest Service has questioned whether the pipeline can be built in the National Forest in a safe and protective manner. As discussed below, there is strong evidence that the project cannot be built through individual watersheds without undue risk, because the

CO88-4 See the response to comment CO80-11.

CO88-4 (cont'd)

requirements of the Clean Water Act and state water quality standards will almost certainly be violated.

Second, even if the pipeline can be built in this terrain, the lack of information about the hazards described prevents the Forest Service from making properly-supported findings as to the impacts that would occur. Thus, these agencies do not have a basis of fact on which to rest conclusions about the ways this proposal would affect the uses and values of the National Forest, nor to properly weight the costs and benefits of this proposal, a "no-action alternative," or any other alternative.

CO88-5

2. The DEIS does not include an adequate analysis of an alternative route for the ACP that would not cross National Forest lands, as federal regulations require and as specified at FSM 2703.2(2)b. The minimum threshold for deciding whether ***any*** crossing of National Forest lands may be allowed, is a finding that the "proposed use cannot reasonably be accommodated on non-National Forest System land." By contrast, FERC stated in the DEIS

> Based on our evaluations, we conclude that the major pipeline route alternatives do not offer a significant environmental advantage when compared to the proposed route or would not be economically practical; and therefore, are not preferable to the proposed action. We also conclude that the route variations evaluated do not offer significant environmental advantages when compared to the corresponding segments of the proposed pipeline route; and therefore, are not preferable to the proposed action.

DEIS at 5 - 27.

Forest Service regulations place a substantial burden on those proposing to cross our public lands - FERC seeks to relieve Applicant of that burden but cannot legally do so. The FS may not allow this process to proceed without a valid analysis of one or more alternative routes that avoid ***all*** National Forest lands. And such an important analysis cannot be supplied for the first time in the FEIS but must be available for public review and comment in a revised DEIS. If ***any*** alternative to crossing National Forest lands can "reasonably accommodate" the project, then it is nearly certain that such a re-routing in those specific areas will also require significant changes to the route on non-Forest lands, producing issues that the public cannot possibly anticipate or address in comments to the current DEIS.

Unacceptable Impacts

Even with the deficiencies in the evidence Applicant has submitted and the inadequacies of FERC's analyses, the record reveals risks that are undoubtedly posed by this project proposal. Three examples are described below:

CO88-6

Water Quality Violations in Headwater Streams -

Headwater streams, the arteries that feed larger waterbodies downstream, are of enormous importance, both as individual resources and as essential components of entire river systems.[1] The proposed route for the ACP would damage dozens of these types of streams and yet these impacts are

[1] The paper by Meyer et al. provides a comprehensive discussion and literature review supporting these values: Meyer, Judy L., David L. Strayer, J. Bruce Wallace, Sue L. Eggert, Gene S. Helfman, and Norman E. Leonard, ***The Contribution of Headwater Streams to Biodiversity in River Networks***, Journal of the American Water Resources Association, Vol. 43, No. 2, February 2007, pages 86 - 103.

CO88-5 FS response: Section 3.3.4.1-National Forest Avoidance Route Alternatives describes potential routes to the north and to the south that would avoid NFS lands. They were considered as part of the range of alternatives for this project.

CO88-6 The study you reference states "within a year of construction." We state "shortly after restoration is complete." Restoration generally takes a year so the conclusions are comparable.

CO88-6 (cont'd)

essentially dismissed by FERC in the DEIS. FERC catalogs some of the threats to streams posed by the proposal, though the list is far from complete:

> Impacts on waterbodies could result from construction activities in stream channels and on adjacent banks. Clearing and grading of stream banks, blasting (if required), in-stream trenching, trench dewatering, and backfilling could each result in temporary, local modifications of aquatic habitat involving sedimentation, increased turbidity, and decreased dissolved oxygen concentrations.

DEIS at 4-100. FERC then asserts, without scientific support, that "[i]n almost all cases, these impacts would be limited to the period of in-stream construction, and conditions would return to normal shortly after stream restoration activities are completed." DEIS at 4-100. While FERC has not defined what "shortly" means in this context, the common meaning of the word does not mean months or years, and yet that is the window of recovery the scientific literature describes. For example, a study by an industry group states that "recovery to pre-construction conditions [after in-stream construction of natural gas pipelines] is generally apparent within a year,"[2] providing no assurance that habitat and aquatic communities will reach pre-construction conditions "shortly." Another study stated that "[s]ediment load increases during construction have been reported to directly and/or indirectly affect fish through modification of their habitats (e.g., increased embeddedness of substrates or infilling of pools) but blithely described those impacts as "temporary" because pre-construction condition were restored with 1 to 2 years.[3] Again, impairment of these resources for months or even years, as studies demonstrate may occur, is not consistent with FERC's claims of minimal and short-term impacts.

The findings cited above and others show FERC's assertions as to the persistence of damages to aquatic life in streams from pipeline crossings to be invalid. However, based on these incorrect assertions, the DEIS goes on to state that "[l]ong-term impacts on surface waters are anticipated to be minor, under normal circumstances, because ACP . . . would not permanently affect the designated water uses. . . ." DEIS at 4-115. The flawed logic this statement reflects cannot be a basis for FERC's findings that water quality impacts will be acceptable. A conclusion that long-term impacts would be minor does not follow from a finding that designated uses in the streams would not be permanently impaired. Further, though the DEIS gives summary descriptions of Clean Water Act requirements and state water quality standards, its analysis is not based on those requirements.

Both West Virginia and Virginia have adopted water quality standards reflecting the requirements of the Clean Water Act.[4] Both states include the support of aquatic life as "designated uses." The specific command in Virginia standards requires that water quality be protected to support "the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them."[5] Also, both states' regulations require full support of what are termed "existing uses," which may not be impaired.[6] Neither designated nor existing uses may be degraded for years or even months, so FERC's analysis is misguided, in that it focuses on a level

[2] Interstate Natural Gas Association of America (INGAA), ***INGAA, River and Stream Crossings Study, (Phase I), Exective Summary***, at 15.
[3] Reid, Scott M., Scott Stoklosar, Serge Metikosh, and Jim Evans, ***Effectiveness of Isolated Pipeline Crossing Techniques to Mitigate Sediment Impacts on Brook Trout Stream***, Water Qual. Res. J. Canada, Volume 37, No. 2, 2002, at 473.
[4] W. Va. CSR § 47.2.1. et seq.; 9 VAC 25-260-5. et seq.
[5] 9 VAC 25-260-10.
[6] Both states adopt the federal definition of "existing uses" - "those uses actually being attained in or on the water, on or after November 28, 1975, regardless of designated uses." 40 C.F.R. § 131.3(e).

Z-2139

CO88-6 (cont'd)

of impacts that is not legally allowed, and its assurances that water quality will be adequately protected are baseless.

This general discussion of impacts by the proposed project on streams is particularly troublesome in relation to sensitive and valuable headwater streams in its path. Just one example of likely dire impacts can be seen for the Warwick Run sub-watershed in Highland County, Virginia, at the point where the pipeline would cross from West Virginia into Virginia. The confluence of natural conditions and the intensity of activities Applicant proposes with this small watershed present a situation in which conformance with water quality standards is virtually impossible.

Warwick Run lies within the Back Creek/Jackson River watershed and drains a mountainous area that is 4,337 acres in size.[7] The watershed is currently more than 96% forested and is almost entirely with the boundaries of the George Washington NF. Approximately four miles of the proposed pipeline path would affect the watershed, with more than half that length cutting directly across the area and the rest running along the ridge-top on the eastern border of the drainage. Applicant proposed a corridor that would plunge down the slope of the mountain for a distance of about 7,500 feet, on slopes that are sometimes greater than 40% and which are never less than 25%. In one section, the slope would be 105%.[8] Due to these slopes, shallow bedrock, limited work areas on steep and narrow ridges, and evidence of "surficial creep," the Forest Service included three separate portions of the pipeline route within the Warwick Run drainage in its request for site-specific assessments in high-hazard areas.[9]

The right-of-way would cross two tributaries to Warwick Run that are designated trout waters by the state and which harbor rare and vulnerable populations of native brook trout. These tributaries and two others that would be crossed by the pipeline would flow directly into Warwick Run, which is also a brook trout stream. All of the upland construction areas and a 4,000+ foot stretch of access road would drain to Warwick Run and its tributaries as well. Warwick Run lies within an area that has been identified to have high quality, "intact" brook trout populations, one of only 103 areas so-designated out of 1,443 in the entire Chesapeake Bay drainage, and is therefore considered a high priority for preservation EPA's Chesapeake Bay Program.[10]

Even if Applicant implemented the most protective erosion and sediment control measures on upland construction areas in the Warwick Run watershed, if the greatest possible care was taken in construction of stream crossings (some of which would likely require blasting of bedrock), and if stream banks and riparian areas were restored to conditions as close as possible to those currently found, severe impairment of these waters is likely, if not certain. Cumulative impacts on stream temperatures, from clearing during construction, from the loss of hemlocks to pest infestations, and from global warning must also be considered. Likewise, the conversion of any significant areas of forest to other vegetation types that would accompany the pipeline will affect runoff and infiltration patterns, which will in turn degrade the streams.

The horror story presented by Applicant's proposal for the Warwick Run watershed is repeated numerous times along the proposed pipeline route. These circumstances make passage through these areas legally, if not technically, impossible. The DEIS/EIS must acknowledge as much. These will

[7] Watershed characterization information comes from the U.S. EPA's ***National Hydrography Database Plus***, described at https://www.epa.gov/waterdata/nhdplus-national-hydrography-dataset-plus.
[8] October 24, 2016 Letter, Clyde Thompson, Forest Supervisor, Monongahela National Forest (Docket submittal no. 20161025-5044) described on page 2 above.
[9] Id.
[10] U.S. EPA, Chesapeake Bay Program, *Brook Trout Outcome Management Strategy, 2015-2025, v. 1.*

CO88-6 (cont'd) clearly rise to the level of "significant" impacts and cannot be mitigated sufficiently to justify approval. The Forest Service will fail in its duty if it allows construction through the Warwick Run watershed and others with similar characteristics.

CO88-7 Significant Impairment of Visual Quality and Recreation -

The DEIS makes no attempt to assess the impacts of this proposed pipeline on the Appalachian Trail in context with other pipelines and other existing or potential impacting activities/existing conditions. projects that would damage the AT's character and value. Thus, any conclusions related to the scenic, recreational, or economic impacts on the AT, from crossings or viewing areas, are without great value. This failure violates FERC's duty to perform an adequate cumulative impacts analysis under NEPA.

CO88-8 High Risk of Impairment of Groundwater and Subterranean Resources -

The information in the DEIS about groundwater wells, springs, and karst features is, by design, woefully incomplete. First, the assessment ignores the fact that pollutants from upland areas on the Forest will flow down-gradient and enter the karst systems through losing streams. Second, Applicant and FERC have limited the area in which water wells, springs, and swallets ("karst features") must be identifed to a region that is within 500 feet of the pipeline and aboveground facilities. DEIS, p. ___.. This arbitrary distance limit is shown by the overwhelming weight of scientific consensus to be without any basis and totally inadequate to provide any reliable protection for groundwater or surface waters.

Further, the surveys that have been done and those proposed have not and will not be capable of fully characterizing the risks of "karst features" forming in the future, in part due to the very activities proposed by the Applicant. The entire area of subsurface environment overtop karst bedrock formations, including that layer generally called the epikarst, may be just as vulnerable to contamination and channeling of materials to sinkholes and will contribute more diffuse, but still potentially very harmful flows to groundwater, which can still move to springs and wells in a much shorter time than would generally occur in other areas.

The DEIS completely ignores the disruption of hydrologic flow patterns through the karst and into caves; changes that could be catastrophic for the future viability of water supplies for humans and for springs contributing important flows to streams in the region. "Base flows," those contributions of groundwater that sustain perennial streams even during the worst droughts may be destroyed or greatly diminished if the operations proposed by Applicant do not properly protect against such impacts and the field investigations and analyses so far completed fall far short of a standard that would supply any reasonable degree of protection. Springs in the Shenandoah Valley also contribute important cold-water contributions to the major streams that sustain populations of trout and other species that would otherwise be absent from the "warm water" streams.

Both the quality and the flow patterns of subterranean flows through the karst, which may be damaged by this project, are vital to the survival of the many sensitive, and in some cases endangered or threatened animals, in the caves and other subsurface zones. The Forest Service has a special responsibility to protect these species and the overall integrity of these systems and the only way any degree of certainty about possible impacts to the whole range of resources at risk in karst areas is to conduct extensive dye testing, LIDAR imagining, ground surveys, and possibly other measures. Even then the risks are still significant but could be at least lessened to some extent

Forest Fragmentation -

Specific Objections to Proposed Plan Amendments

8

CO88-7 See the response to comment FA6-17.

CO88-8 Comment noted.

CO88-9

Monongahela NF

The Notice describes potential amendments to the MNF Forest Plan to "temporarily exceed standards identified under management direction for soils and water, specifically forest-wide standards SW06 and SW07, provided that design criteria, mitigation measures, project requirements, and/or monitoring activities agreed upon by the FS are implemented as needed to achieve adequate slope and soil stability." Notice at .

SW 06 specifies:

"Severe rutting resulting from management activities shall be confined to less than 5 percent of an activity area."

An activity that causes "severe rutting" is, by definition, destructive and presents a risk to water quality. Ruts will provide channels for runoff and enhance the likelihood that erosion will occur. The force of concentrated flows in areas of severe rutting will be more difficult to control and management practices for sediment trapping or filtering will be less effective. Therefore, limiting the occurrence of this condition to a relatively small area, within which stabilization and restoration can be achieved quickly, is absolutely necessary.

Even the existing formulation, based on a percentage of the work area, is inadequate, because the larger the overall site, the larger the severely-rutted area will be. And the larger the severely-rutted area is, the more time and effort will be required to correct the problems at this site and prevent serious environmental damage. Given that much of the terrain in the MNF that would be crossed by the ACP is steep, has sensitive streams, unstable and highly erodible soils, and high rainfall amounts and intensities, allowing larger areas with "severe rutting" would be particularly reckless. If any variance from the general condition in SW 06 is made, the requirement should be more stringent rather than less - it should specify an aerial extent in acres or square feet rather than a percentage of the entire work area. Also, it may well be necessary to require and even more limited size of area in difficult terrain.

SW 07 specifies:

Use of wheeled and/or tracked motorized equipment may be limited on soil types that include the following soil/site area conditions:

a) Steep Slopes (40 to 50 percent) - Operation on these slopes shall be analyzed on a case-by-case basis to determine the best method of operation while maintaining soil stability and productivity.

b) Very Steep Slopes (more than 50 percent) - Use is prohibited without recommendations from interdisciplinary team review and line officer approval.

c) Susceptible to Landslides - Use on slopes greater than 15 percent with soils susceptible to downslope movement when loaded, excavated, or wet is allowed only with mitigation measures during periods of freeze-that and for one to multiple days following significant rainfall events. If the risk of landslides during these periods cannot be mitigated, then use is prohibited.

d) Soils Commonly Wet At Or Near The Surface During A Considerable Part of the Year, or Soils Highly Susceptible To Compaction. Equipment use shall normally be prohibited or mitigated when soils are saturated or when freeze-thaw cycles occur.

This requirement is already conditional (use of certain equipment "may be limited"). All the condition defined in items a. through d. allow the use of the equipment described but only after additional review. The environmental settings described, in which special reviews are required, are all very problematic and present great risks of destructive results from equipment use and severe damage to water quality.

CO88-9 FS response: See Section 4.8.9-Federal Lands for discussion of MNF LRMP amendments.

CO88-9 (cont'd) There is no justification for eliminating the requirements for additional review contained in a. - d. and, as stated above, an amendment that relaxes these requirements will be reckless.

CO88-10 George Washington National Forest

Proposed Amendment 1: This proposal would change the plan designation of 102.3 acres to make these lands "Rx 5C-Designated Utility Corridors." This change would remove management for dispersed recreation and mosaics of habitat from these areas. We oppose this change and assert that any new utility project should be examined in a site-specific plan review.

Proposed Amendment 2: These soil condition and riparian corridor conditions are appropriate and protective measures. The proposed change, allowing the general conditions to be violated "provided that mitigation measures or project requirement agreed upon by the FS are implemented as needed," defers decisions and allows variances without adequate guidance to limit the discretion of FS personnel faced with these decisions.

The protections these conditions provide are too important to be swept away for the benefit of this one entity. For example, FW-5 requires that "organic layers, topsoil and root mat" be left in place over at least 85% of the activity area and that revegetation occur within 5 years. The Applicant is supposed to be committed to establishing viable and sustainable plant communities in all disturbed areas and should have that goal met well before 5 years have elapsed. Making sure that sufficient organic matter and suitable soils are kept in place is essential to meet these goals.

FW-15, FW-16, and FW-17 all appropriately regulate activities in and near the channels of ephemeral streams. Case-by-case exceptions may be allowed for F-15 (vehicle travel) and FW-17 (limit on percentage of timber removed), providing sufficient flexibility for operations in these areas while requiring site-specific reviews to avoid serious damage in these areas. FW-16 limits the percentage of "mineral soil" that may be exposed in these zones and is also an appropriate and necessary limitation. These ephemeral streams are important resources and must be protected even when flow is not present. It is well established that aquatic biota can and do survive in ephemeral stream beds and, of course, they may contribute pollution to downstream waters when flowing. The proposed special exceptions should not be granted. Rather, Applicant must be held to the same standards as all other activities in these areas, whether conducted by public or private parties.

The requirements of 11-019 prevent tree removal in the "core of the riparian corridor," unless done to meet one or more of the listed purposes. The exception to the prohibition, allowing for tree removal "[f]or approved facility construction/renovation" should easily accommodate the work proposed for this project, if approved. There is no valid reason for removing the protections this provision provides.

Proposed Amendment 3 - The notice states that "[t]he LRMP would be amended to allow the ACP to cross the Appalachian National Scenic Trail in Augusta County, Virginia (reference LRMP Standard 4A-025)." As with other proposed amendments above, this change is unnecessary, because the provisions of 4A-025 already allow "a single crossing of the prescription area by linear utilities and rights-of-way, limiting location of new crossings to areas "where major impacts already exist." The damages that would be inflicted on the Appalachian Trail and the experience of users due to visual and noise impacts in sight and hearing of the Trail but not directly associated with a crossing are already much too great. Any new activities of this type must be very strictly limited and there is no justification for this amendment.

CO88-10 FS response: See Section 4.8.9-Federal Lands for discussion of GWNF LRMP amendments.

CO88-10 (cont'd)

Proposed Amendment 4: The Notice states that "[t]he LRMP may need to be amended to allow the removal of old growth trees within the construction corridor." The pipeline route should avoid all old growth stands. Given that the DEIS already acknowledges that forest fragmentation would be a significant negative impact of the ACP that cannot be mitigated, the removal of old growth trees would exacerbate unavoidable impacts that already exist and must not be allowed.

Proposed Amendment 5: This possible amendment, according to the Notice, would be made "to allow major reconstruction of a NFS road within the Rx 2C3 area." The areas under this prescription include just seven stream segments on some of the highest quality streams in the GWNF, all of which have been designated "eligible recreation rivers" for possible inclusion in the "National Wild and Scenic River System." Water resources of this magnitude are much too rare to allow major and very invasive construction within them - work that could well destroy the values that, otherwise, might enable their designation for national-level protections. Rather than allowing major reconstruction of roads in these areas, the FS should place a high priority on the removal and rehabilitation of roads.

Proposed Amendment 6: This proposal would allow violation of the existing "Scenic Integrity Objectives" for some unspecified period of time while the wounds created by the Project are allowed to partially heal. The Notice promises that mitigation measures "are expected to improve visual quality over an extended timeframe." This "extended timeframe" is undefined and, in fact, the FS must acknowledge that even the best mitigation measures will still damage scenic integrity. Neither short-term nor long-term impairment of this important feature of the Forest for industrial construction should be granted approval through the Forest Plan. If any lessening of scenic integrity standards were to be allowed, those exceptions should be very strictly defined and limited and the current construction and mitigation plans the Applicant has proposed and FERC has deemed acceptable in the DEIS are far from sufficient.

COMPANIES/ORGANIZATIONS COMMENTS

CO89 – Chesapeake Bay Foundation

CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

April 6, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
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Re: Draft Environmental Impact Statement for the Atlantic Coast Pipeline, LLC, Dominion Transmission, Inc. (CP15-554-000 and CP15-555-000)

Dear Commissioners:

Chesapeake Bay Foundation, Inc. (CBF) hereby submits its comments concerning the draft Environmental Impact Statement (DEIS), dated December 2016, prepared by the Federal Energy Regulatory Commission (FERC) concerning the applications of the Atlantic Coast Pipeline, LLC and Dominion Transmission, Inc. (DTI) for the Certificates of Public Convenience and Necessity[1] that are required to construct and operate two interstate natural gas transmission pipelines, the Atlantic Coast Pipeline (ACP) and the Supply Header Pipeline (SHP) (jointly, the Project").[2]

CBF earlier submitted two sets of scoping comments to assist FERC in the development of the EIS.[3] These comments focused on the Project's direct and indirect environmental impacts to the air and water resources with particular reference to those that will or may affect the Chesapeake Bay, a "national treasure"[4] seriously degraded by decades of nutrient and sediment pollution and now beginning to show signs of recovery resulting from a massive multi-year, multi-state/federal partnership.[5]

The DEIS identifies and assesses some of the Project's environmental effects, finding adverse temporary and permanent impacts but concluding that proposed minimization and mitigation measures, along with additional steps recommended by FERC staff in the DEIS, will reduce most to "less-than-significant levels." However,

[1] *See* Natural Gas Act, 15 U.S.C. §§ 717 *et seq.* (2005).
[2] These comments principally focus on the ACP segments in Virginia (AP-1, AP-3 and AP-4); however, many impacts from the related Supply Header Project (SHP) are also addressed.
[3] *See* CBF Comment Letter, dated April 27, 2015, (Docket PF15-6-000, Accession number 20150427-5338); CBF Comment Letter, dated June 2, 2016 (Docket CP15-554-000, Accession number 20160603-5078).
[4] *See* EO 13508, dated May 12, 2009 (referring to the Chesapeake Bay).
[5] U.S. Envtl. Prot. Agency, *Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorous and Sediment*, dated December 29, 2010, *available at* https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document. ("TMDL").

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as indicated below, the DEIS affords scant analysis of important impacts to wetlands, inadequate evaluation of the water quality impacts from Project-caused sedimentation, and deficient investigation of Project-related nitrogen oxide (NO_x) emissions to the environment, including the Chesapeake Bay. We urge FERC to correct these deficiencies in the final environmental impact statement (EIS) as required by the National Environmental Policy Act.[6]

I. PROJECT BACKGROUND

The Project entails construction and operation of an extensive interstate natural gas pipeline complex to traverse more than 600 miles in Virginia, additional major portions in West Virginia and North Carolina, and more than 21 miles across national forest lands in Virginia and West Virginia.[7] It will consist of two main pipeline facilities, three pipeline laterals,[8] three new compressor stations and other infrastructure that will be capable of delivering up to 1.5 billion cubic feet per day of natural gas to customers in Virginia, North Carolina, and West Virginia.[9]

The Project would disturb more than 12,000 acres of land for construction and require ongoing operation on almost 6,000 acres.[10] Over 400 existing roads will be upgraded, 82 new roads will be needed for construction activities, and 507 permanent roads will be needed for ongoing maintenance and operations.[11] Construction will include excavation of deep trenches for pipeline installation that will disturb 32.5 miles of karst terrain in Virginia, with related impacts to sensitive groundwater, cave systems and spring systems.[12] Notably, 108 miles of the pipeline routes will impact mountainous terrain with slopes greater than 20%.[13] Further, building the pipeline will require 1,787 water body crossings in Virginia alone,[14] including more than 50 within national forest areas.[15] The Project pipelines (ACP and SHP) will temporarily impact 786.2 acres of wetlands and permanently impact 248.3 acres.[16] Construction of related new aboveground facilities and access roads will permanently impact 9.6 wetland acres.[17]

The Project is characterized as having a broad public purpose and need: (1) serving the growing energy demands public utilities and distribution companies; (2)

[6] 42 U.S.C. §§ 4321 *et seq.* (1970).
[7] DEIS 2-1.
[8] DEIS 2-1.
[9] DEIS ES-1.
[10] DEIS 2-15 to 2-17.
[11] DEIS 2-25.
[12] DEIS 4-7.
[13] DEIS ES-4.
[14] DEIS 4-87.
[15] DEIS 4-113.
[16] Tbl. 4.3.3-1, DEIS 4-120; DEIS 5-6.
[17] DEIS 5-6.

providing natural gas for direct residential, commercial, and industrial uses; (3) increasing the reliability and security of natural gas supplies in these states; and (4) providing access to a low cost supply hub with multiple natural gas traders for electricity generation on the daily and futures markets.

II. THE NATIONAL ENVIRONMENTAL POLICY ACT REQUIRES A "HARD LOOK"

CO89-1

Because the Project is a "major federal action significantly affecting . . . the human environment,"[18] NEPA requires FERC to prepare an adequate EIS before issuing the requested Certificates of Public Convenience and Necessity.[19] Stating the nation's environmental policy "to create and maintain conditions under which man and nature can exist in a productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans,"[20] NEPA requires a covered project's lead agency to take a "hard look" at its likely environmental impacts to ensure they "will not be overlooked or underestimated only to be discovered after the resources have been committed."[21]

> NEPA, first of all, makes environmental protection a part of the mandate of every federal agency and department. . . . It is not only permitted, but compelled, to take environmental values into account. Perhaps the greatest importance of NEPA is to require . . . agencies to *consider* environmental issues just as they consider other matters within their mandates.[22]

An adequate EIS must assess the environmental impacts of the project that cannot be avoided. Direct impacts (occurring at the same time and place), indirect effects (reasonably foreseeable impacts occurring later in time or farther removed in

[18] NEPA, § 102(2)(C); 40 C.F.R. § 1502.4.
[19] *See* 18 C.F.R § 380.7 (FERC requires EIS to include staff conclusions, summaries of the significant environmental impacts, alternatives, the staff's preferred action, any mitigation measures proposed by the applicant, any significant environmental impacts that cannot be mitigated, and references to any studies that might provide additional data to decision makers and the public).
[20] NEPA, § 101(a); 40 C.F.R. § 1500.1(a).
[21] *Robertson v Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).
[22] *Calvert Cliffs' Coordinating Comm., Inc. v. Atomic Energy Comm'n*, 449 F.2d 1109, 1112 (D.C. Cir. 1971) (J. Skelly Wright) (emphasis in original). *See also Silva v. Lynn*, 482 F. 2d 1282 (1st Cir. 1973) (EIS permits courts to ascertain whether the agency has made a good faith effort to take into account the values NEPA seeks to safeguard).

CO89-1 See the response to comment CO6-1.

CO89-1 (cont'd)

distance) and cumulative impacts[23] must be included.[24] The discussion must also evaluate the *efficacy* of proposed avoidance measures, whether through actual avoidance, minimization, restoring or rehabilitating the affected resources, reducing or eliminating the impact over time through preservation or maintenance, or compensating by providing substitute resources.[25] The EIS must discuss the mitigation measures in sufficient detail to ensure that environmental consequences have been fairly evaluated.[26] The evaluation of impacts and avoidance must take place before a project is approved and not depend on the results of future studies.[27]

The EIS must also objectively evaluate all reasonable alternatives—that is, those that substantially meet the agency's purpose and need and that are practical or feasible from a technological and economic standpoint, using common sense. Alternatives that have been eliminated from detailed study,[28] as well as a "no action" alternative, must be addressed. The EIS must consider local short term uses of the environment, the maintenance and enhancement of long term productivity, and any irreversible commitments of natural resources that the proposal would entails.[29]

To ensure the final EIS meets these standards, the deficiencies of the DEIS identified below will have to be addressed.

III. THE DEIS DISCUSSION OF SURFACE WATER AND AIR IMPACTS FALLS SHORT OF NEPA'S "HARD LOOK" REQUIREMENT

A. The DEIS Assessment of the Project's Wetlands Impacts is Inadequate

CBF has a long history of working to protect wetlands, including analysis of wetland impacts from large projects, many of which have explored important questions under the Clean Water Act, the State Water Control Law and Virginia's Nontidal Wetlands Act and Water Protection Program.[30] These efforts have been directed toward substantially improving the water quality, productivity, and resiliency

[23] Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking placer over a period of time.
[24] NEPA §102(2)(C); 40 C.F.R. § 1502.16 (a)–(b); *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992) (Reasonably foreseeable effects are so "sufficiently likely to occur that a person of ordinary prudence would take [them] into account in reaching a decision.").
[25] 40 C.F.R. §§ 1502.14(f), 1508.20; DEIS 2-26.
[26] *Methow Valley Citizens Council*, 490 U.S. at 352.
[27] 40 C.F.R. § 1500.1(a); *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n. 21 96 S. Ct. 2118, 2730 n. 21 (1976).
[28] 40 C.F.R. § 1502.14.
[29] 42 U.S.C. § 4332l(i)-(v) (1975).
[30] *E.g.*, King William Reservoir Proposal, Route 460 expansion.

of the ecosystem; encouraging the diversity and abundance of its living resources; and maintaining a high quality of life for the people of the Chesapeake Bay region. CBF supports federal and state agency requirements to avoid, minimize, and mitigate wetland impacts to ensure that no net loss of wetland acreage or function occurs.[31]

Wetland Status and Historic Trends in Virginia

CO89-2

Due to the vast massive wetland loss contemplated for the construction of the Atlantic Coast Pipeline,[32] CBF urges consideration of the status and historic trends of wetlands in shaping state and federal authorizations for this project. Historic development activities, agriculture, and infrastructure construction have caused North Carolina, Pennsylvania, Virginia and West Virginia to suffer tremendous losses in wetland acreage and its associated functions and values. These losses have substantially contributed to the degradation and eutrophication of receiving waters, including Chesapeake Bay. Many of these receiving waterways have been categorized as impaired for various designated uses and consequently have total maximum daily loads (TMDLs) and watershed implementation plans (WIPs) which are focused on restoring them to water quality standards. Efforts to restore these natural resources involve a substantial investment by citizens of Pennsylvania, Virginia, West Virginia and North Carolina.

State administered wetland mitigation programs which have been developed relatively recently have slowed the loss of wetlands through requiring mitigation and are intended to result in "no net loss of existing wetland acreage and functions." While stream and wetland mitigation can be a beneficial tool, the National Research Council (NRC)[33] and the scientific literature[34] have documented that mitigation projects often fail to achieve pre-impact levels of ecosystem services and benefits; thus, EPA and DEQ have committed to prioritizing avoidance and minimization over mitigation.[35] Consequently, it is unclear that addressing large-scale impacts to wetlands through mitigation will result in no net loss of function.

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[31] *See* CBF, *State of the Bay Report* at 6 (2005); *see also Alliance to Save the Mattaponi v. U.S. Army Corps of Engineers*, 606 F.Supp.2d 121 (D.D.C. 2009) (CBF and others contended that Army Corps of Engineers violated no net loss policy by approving permit for reservoir on Cohoke Creek).
[32] *See* DEIS 4-123 (Construction of the ACP would temporarily impact 783.4 acres and permanently impact 247.5 acres of wetlands; construction of the SHP would temporarily impact 2.8 acres and permanently impact 0.8).
[33] NATIONAL RESEARCH COUNCIL ET AL., COMPENSATING FOR WETLAND LOSS UNDER THE CLEAN WATER ACT (2001).. Committee on Mitigating Wetland Losses, Board on Environmental Studies and Toxicology, Water Science and Technology Board, Division on Earth and Life Studies
[34] Barbara L. Bedford, *Cumulative effects on wetland landscapes: Links to wetland restoration in the United States and southern Canada*, 19 WETLANDS 775 (1999) ; Joy B. Zedler, *Progress in wetland restoration ecology*, 15 TRENDS IN ECOLOGY & EVOLUTION 402.
[35] Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19,594 (Apr. 10, 2008) (codified at 40 C.F.R. pt. 230).

CO89-2 Nearly all permanent wetland impacts are from the conversion of shrub and forested wetland into emergent wetland. Actual wetland loss is minimal (6.9 acres on ACP and less than 0.5 acre on SHP; see appendix L and section 4.3.3.6), and any loss would be mitigated. Much of the conversion would occur in lands already utilized for silviculture. We disagree that this project has greater impacts than other projects, and believe that the clearing of forested wetlands for silviculture each year results in a significantly greater impact on wetlands and waterbodies.

CO89-2 (cont'd)

The level of wetland impacts proposed with the Project pipelines (ACP and SHP)--786.2 temporary, 248.3 permanent[36]-- are significantly greater than those impacts associated with other major projects that were not able to proceed.[37] To our knowledge, since the Clean Water Act was adopted, no project with the level of wetland impacts proposed in this Project has ever been permitted and completed in the Commonwealth of Virginia.[38] From that perspective, the unprecedented scale of the wetland impacts to be created by this Project underscores the importance of a careful evaluation of both direct and indirect effects and the importance of specific details establishing whether and how mitigation will achieve "no net loss of function."

Despite these concerns, the current draft EIS does not include a specific, detailed mitigation plan, leaving it unclear whether there is even potential for mitigation to lead to no net loss of function for the wetland losses proposed. Under NEPA standards, FERC may neither rely on future permitting expected to be undertaken by another agency,[39] nor wait to review the results of future studies,[40] to assess this question.

Recommendation: CBF recommends that the final EIS include a detailed wetland mitigation plan.[41] This plan should include a detailed assessment of the functional losses associated with the proposed impacts as well as clear evidence and a fully supported assessment of whether the proposed mitigation plan will replenish these functions and therefore result in no net loss of acreage *and* functions.

B. The DEIS Assessment of the Project's Surface Waters from Sedimentation is Inadequate

[36] *See supra* note 32.
[37] For example, the proposals (which did not receive federal authorization) for a massive expansion of Virginia Route 460 and the attempt to build a major reservoir in King William, Virginia, both involved large scale wetland impacts.
[38] CBF Communication with USACE Staff (January 2016).
[39] *South Fork Council of Western Shoshone of Nev. v. U.S. Dept. of the Interior*, 588 F.3d 718, 726 (9th Cir. 2009) (state government-issued permit cannot satisfy a federal agency's obligations to evaluate environmental impacts under NEPA) (citing *Klamath-Siskiyou Wildlands Center v. BLM*, 387 F.3d 989, 997 (9th Cir. 2004)); *Webster v. U.S. Dept. of Agric.*, No. 2:09-CV-138, 2011 WL 8788223 (N.D.W. Va., June 13, 2011) (whether an EIS meets the standards for an adequate statement does not turn on whether or not a mitigation plan would subsequently be formulated by another agency; it turns on whether or not the plan satisfies NEPA).
[40] *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n. 21, 96 S. Ct. 2118, 2730 n. 21 (1976).
[41] *See* DEIS 4-125 (recommending that ACP submit final wetland mitigation plans and documentation of approval by the United States Corps of Engineers).

In its earlier submitted scoping comments, CBF and others identified the potential for increased sedimentation of surface waters from project construction and operation as important environmental impacts to be addressed. The DEIS fails adequately to evaluate these impacts.

CO89-3

Multiple aspects of Project construction and operation will create risks of increased sedimentation to waterbodies across a wide swath of the Chesapeake Bay watershed in Virginia and neighboring states. Examples from the lengthy period of active construction, many of which the DEIS acknowledged, include the large scale tree clearing, [42] road building, massive excavation for trench digging, overburden handling, and other activities over miles of often very steep and currently forested slopes within the pipeline's path. [43] Moreover, as the DEIS points out, risks to water quality from increased turbidity and sedimentation will also be created by construction activities that affect stream channels and adjacent banks related to myriad waterbody crossings, including within the Monongahela and George Washington National Forests. Following construction, the risk of erosion and sedimentation from the previously-active construction sites, particularly from the denuded and disturbed segments on steep slopes, will continue throughout the Project's operational periods.

Given these circumstances, NEPA requires the agency to conduct a careful exploration of the extent of the anticipated impacts and provide an analysis of the effectiveness of measures proposed to avoid, minimize and mitigate them. Unfortunately, the DEIS falls short of meeting this standard with respect to the risk of increased sedimentation. The DEIS gives these impacts scant treatment, dismissing them as merely temporary or transient and failing to discuss the need for adequate modeling that takes into account effects on local streams and on downstream locations, as well as the cumulative effects of even transient discharges from construction and operation of the vast number of pipeline miles and stream crossings at issue.[44]

The lack of information essential to understanding the extent of impacts and the evaluation of mitigation efficacy is major problem in the DEIS. For example, the DEIS acknowledged that information on planned water crossings is not complete; for some of the major waterbody crossings, the design specifications and crossing locations have changed such that site-specific construction and restoration measures have not been incorporated into the plans. [45] FERC staff noted this omission and recommended that the Project Applicant file and secure written approval of site-specific crossing plans, including location and type of bridges, water discharge

[42] *See e.g.*, DEIS 4-41–4-64; 4-100–4-102.
[43] *Id.*
[44] *See, e.g.*, DEIS 4.1.4 (referencing ACP's 84 miles of slopes of greater than 20%).
[45] DEIS ES-9.

CO89-3 Comment noted.

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CO89-3 (cont'd)

structure locations, agency-imposed time of year rules, and construction and restoration requirements. Even without having reviewed such site-specific plans, FERC staff nonetheless concluded that construction and operation-related impacts would be effectively mitigated.[46] This conclusion is plainly premature, given the well-settled rule that the promise of future studies does not substitute for the required evaluation of the effectiveness of the proposed mitigation.[47] As one court explained, "[w]e fail to see how mitigation measures can be properly analyzed and their effectiveness explained when they have yet to be fully developed."[48]

In a similar vein, the DEIS also pointed out that the Applicant had not then provided the information requested by the Forest Service on potential project-induced hazards, risks to safety and natural resources, and the effectiveness of proposed mitigation measures in the steeply sloped environment.[49] To address these deficiencies, FERC staff recommended that the Applicant file the "plans, typical drawings, and site-specific designs of representative construction segments to display the magnitude of the proposed slope modifications."[50] Yet without waiting for these details, the DEIS prematurely concluded that these potential risks would be "adequately minimized."[51] (Following the issuance of the DEIS, the Applicant submitted limited information on designs for two high-hazard locations, 0.3 miles on Clover Lick Mountain, Pocahontas County, West Virginia, and 0.1 mile on Big Mountain in Highland County, Virginia. Produced well after DEIS publication, there has been insufficient time before the current comment deadline for a full review. It is clear, however, that the scant information submitted—regarding 0.4 miles of the proposed route—is strikingly inadequate to allow for assessment of the impacts and the efficacy of the proposed mitigation measures).

The DEIS's strategy of referring to the presumed application of best management practices required by state law and state-issued permits, including construction general permits and associated stormwater pollution prevention plans (SWPPPs) for controlling runoff and meeting pollution limits, also fails to meet NEPA's "hard look" requirement in the absence of a review of the state rules and an analysis of the expected effectiveness of these measures along the specific routes, and in the rugged terrain, at issue. It is well-settled that NEPA prohibits a federal agency to "pass the buck" to state regulatory agencies and thereby to circumvent its own NEPA obligation to conduct an adequate investigation.[52] Moreover, no such analysis

[46] DEIS ES-9; 4-89.
[47] *LaFlamme v. Fed. Energy Regulatory Comm'n*, 852 F.2d 389, 400 (9th Cir. 1988);
[48] *Id.* at 400 (quoting *Oregon Nat. Res. Council v. Marsh*, 832 F.2d 1489, 1493 (9th Cir. 1989).
[49] DEIS ES-5.
[50] *Id.*
[51] *Id.*
[52] *South Fork Council of Western Shoshone of Nevada*, 588 F. 3d 718 (state government-issued permit cannot satisfy a federal agency's obligations to evaluate environmental impacts under NEPA) (citing *Klamath-Siskiyou Wildlands Center v. BLM*, 387 F. 3d 989, 998 (9th Cir. 2004));

CO89-3 (cont'd)

could be done at this time as the Applicant has not submitted its proposed erosion and sediment control plans for the Virginia segments, nor provided stormwater management plans (remarkably contending that stormwater management plans are not required because runoff conditions will be restored to the predevelopment runoff condition).[53]

Recommendations. The Applicant should be required to provide detailed site-specific information pertinent to understanding the turbidity, sedimentation and related impacts to water quality in all local and downstream waterbodies (not just those affected by wet open-cut crossing methods)[54] from construction and operation of the pipeline, especially (but not exclusively) in the steep sloped, heavily forested and/or karst-affected terrain. Such information should include detailed site-specific erosion and sediment control plans, stormwater management plans for post-construction runoff control; and modeling data that addresses the anticipated duration, extent, and magnitude of turbidity levels, assesses the potential impacts on resident biota; discusses physical and chemical characteristics of the sediments, estimates area affected by the transport and redistribution of the sediments, and evaluates the effect of suspension and resettlement on water quality and of the effectiveness of proposed mitigation measure to reduce turbidity and sedimentation. The referenced information, and all information specifically requested by FERC staff in this DEIS, should be considered by FERC staff, with the final EIS to include a careful evaluation of the effectiveness of all planned best management practices and other avoidance and minimization measures.[55]

C. The DEIS Assessment of the Project's Air and Water Quality Impacts from NO_x Emissions is Inadequate

CO89-4

The proposed Project is located almost entirely within the Chesapeake Bay airshed.[56] Accordingly, nitrogen oxide (NO_x) emissions from the Project will impact the Bay and Bay tributaries. The Environmental Protection Agency's Chesapeake

Webster v. U.S. Dept. of Agric., No. 2:09-CV-138, 2011 WL 8788223 (N.D.W. Va., June 13, 2011) (whether an EIS meets the standards for an adequate statement does not turn on whether or not a mitigation plan would subsequently be formulated by another agency; it turns on whether or not the plan satisfies NEPA).

[53] Construction, Operations, and Maintenance Plans, Draft, Prepared by ERM, August 2016 (submitted by ACP to FERC and the U.S. Forest Service, August 22, 2016) (FERC Docket CP15-554-000, Accession No. 20160824-5160).

[54] *Cf.* DEIS 4-102 (recommending modeling of turbidity and sedimentation arising from proposed used of wet open-cut crossing method for all major waterbodies).

[55] *See id.* (DEIS recommending that ACP submit site-specific modeling plans for all major water bodies to be crossed via a wet open-cut method that addresses associated turbidity and sedimentation).

[56] Emma Andrews, *Map: Chesapeake Bay Airshed*, CHESAPEAKE BAY PROGRAM (Feb. 7, 2008), http://www.chesapeakebay.net/maps/map/chesapeake_bay_airshed.

Z-2153

CO89-4 The EPA committed to reducing air deposition of nitrogen to the tidal waters of the Chesapeake Bay through federal air regulations. The TMDL set Bay watershed limits to 185.9 million pounds of nitrogen per year for all jurisdictions, including Virginia. Atlantic would comply with all applicable federal and state air quality regulations, and the associated compressor stations would be minor sources of air emissions, thereby complying with the Chesapeake Bay Program. Atlantic conducted modeling for each new compressor station in accordance with EPA modeling programs and guidelines. We do not believe additional modeling is required. Further, Atlantic would be required to comply with all applicable federal and state emissions monitoring and reporting requirements.

CO89-4 (cont'd)

Bay Program identified atmospheric deposition of nitrogen as the highest nitrogen input load to the Chesapeake Bay watershed.[57] Atmospheric nitrogen comes from nitrogen oxides (NO_X) and ammonia (NH3). The principle sources of NO_X are air emissions from industrial-sized boilers and internal combustion engines, such as the engines that will be used at the Project's compressor stations.[58] In addition to nitrogen deposition to waterways, NO_X can combine with volatile organic compounds (VOCs) in sunlight to create ground level ozone, a human health hazard.[59]

The DEIS explains that "[a]ir emissions would be generated during construction of the new mainline and lateral pipelines, modifications at four existing compressor stations, construction of three new compressor stations, and construction of ten new M&R stations."[60] The construction of the ACP and SHP would take two years and would generate 3,720 tons of NO_X.[61] Once the Project is operating, the ACP and SHP will emit an estimated 217 tons of NO_X per year.[62] Compared to point sources of NO_X in Virginia in 2015, the Project's annual emission of 217 tons of NO_X would rank as the 34th largest source of NO_X emissions in Virginia.[63] During the two years of the Project's construction, the emissions would rank around the sixth largest source of NO_X emissions in Virginia.[64] Although the Project's emissions would be distributed across multiple states and therefore impacts would be different than those from a single point source, this comparison is helpful to provide some context for the cumulative emissions that will result from the Project.

Using compressor station information provided in air permit applications for the Project[65] and the CALPUFF air modeling system, CBF estimates that the Project

[57] Chesapeake Bay TMDL, App'x L: Setting the Chesapeake Bay Atmospheric Nitrogen Deposition Allocations, L-1 (2010), https://www.epa.gov/sites/production/files/2015-02/documents/appendix_l_atmos_n_deposition_allocations_final.pdf.
[58] *Id.*
[59] *See Health Effects of Ozone Pollution*, EPA, https://www.epa.gov/ozone-pollution/health-effects-ozone-pollution.
[60] DEIS 4-450.
[61] *See* DEIS 4-451.
[62] *See* DEIS, Tables 4.11.1-7, 1-8, and 1-9, at 4-453 (three ACP compressor stations: 114.3 tpy; ACP metering and regulation stations: 6.99 tpy; four SHP compressor stations: 95.4 tpy).
[63] *See* Virginia Dep't of Envtl. Quality, Emission Inventory, 2015 Point Source Criteria Pollutant Emissions Reports, "Point Sources with Criteria Pollutant Emissions of 100 Tons or More," http://www.deq.virginia.gov/Programs/Air/AirQualityPlanningEmissions/EmissionInventory.aspx.
[64] *Id.* (estimating that total construction emissions of 3,720 tons per two years would be distributed evenly as 1,860 tpy).
[65] *See* ACP and SHP Air Permit Applications, FERC Docket CP15-554, Accession No. 20151001-5220 (filed Oct. 1, 2015), *available at* https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=14002125; *see also*, Atlantic Coast Pipeline, Resource Report 9, FERC Docket CP-15-554, Accession No. 20150918-5212, at 9-37–9-59 (filed Sep. 18, 2015), *available at* https://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13990956.

CO89-4 (cont'd)

emissions would contribute an additional 13,297 pounds of nitrogen deposition per year to the land and water within the Chesapeake Bay watershed.[66] Of this total, the James River watershed will receive an estimated 4,213 pounds of nitrogen deposition per year. The James River watershed—like all sub-watersheds within the Bay watershed—is subject to specific nitrogen allocations in the Bay TMDL.[67] The Bay watershed jurisdictions are responsible for meeting these nitrogen allocations and this additional load of nitrogen pollution must be accounted for and managed by each jurisdiction.

As discussed above, the Chesapeake Bay TMDL accounted for all existing sources of nitrogen in the watershed and established pollution caps that are maintained through implementation of each state's Watershed Implementation Plan (WIP); offsets are required for new sources. The direct, indirect, and cumulative impacts analyses in the DEIS fail to discuss the water quality impacts due to atmospheric nitrogen deposition, both within the HUC-10 watersheds or the larger context of the Chesapeake Bay watershed. FERC should identify the Project's increased deposition of nitrogen to land and surface waters and should address how this new load of nitrogen will be offset or accounted for within the Bay TMDL framework.

In addition to nitrogen deposition to land and waterways, nitrogen dioxide (NO_2)—one type of NO_x gas—can irritate airways in the human respiratory system.[68] National Ambient Air Quality Standards (NAAQS) for NO_2 establish the limits necessary to protect human health and welfare. Relying upon AERMOD modeling performed by the Project Applicant, the DEIS concludes that neither the ACP compressors stations or the SHP compressor stations would cause or contribute to a violation of the NAAQS for NO_2.[69] However, because of the results of this modeling, FERC staff should carefully examine the dataset inputs and background assumptions used by the Applicant.

The Applicant used AERMOD in a screening mode (the MAKEMET meteorological dataset), in which the source and receptors are defined completely but the meteorological data are not actual/observed data, but rather represent a "worst-

[66] This estimate only includes operating emissions from the three new (Marts, Buckingham, and Northampton) and three modified (Crayne, JB Tonkin, and Mockingbird Hill) compressor stations and does not include construction emissions.
[67] *See* Chesapeake Bay TMDL, Section 9. Chesapeake Bay TMDLs, "Table 9-1. Chesapeake Bay TMDL total nitrogen (TN) annual allocations (pounds per year) by Chesapeake Bay segment to attain Chesapeake Bay WQS," at 9-4 (2010), *available at* https://www.epa.gov/sites/production/files/2014-12/documents/cbay_final_tmdl_section_9_final_0.pdf.
[68] *See* EPA, Health Effects of NO_2, https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects.
[69] DEIS at 4-455, 4-457.

CO89-4 (cont'd)

case" scenario.[70] The screening mode only provides estimates of hourly impacts. The thinking behind this approach is that if the Project does not violate the NAAQS using the screening approach, then the Applicant would not need to gather five years of actual meteorological data to demonstrate compliance. The screening approach is adequate if the results are definitive and a project's emissions are without question below the NAAQS. However, if the screening results are close to the NAAQS limits (as was the case with three of the six modeled compressor stations for the 1-hour NO_2 NAAQS), *and* if any of the assumptions regarding the source data are significantly in error *or* the assumed background level is chosen inappropriately, then the results of the screening approach may not accurately reflect the NAAQS attainment status for the modeled sources.

Background levels are supposed to represent the contributions from all other emissions sources and the regional background for the NAAQS limit. The assumed background level can have a significant effect on the modeled results (e.g., attainment vs. non-attainment), especially if the background levels are not far below the NAAQS (i.e., even a relatively modest-sized additional source would trigger a violation). Examination of the assumptions regarding the selection of background levels for each of the NAAQS standards reveals that there is at least some uncertainty regarding the value for the 1-hour NO_2 NAAQS at the Buckingham and JB Tonkin compressor stations.

According to the Air Quality Model Results for the Project (using the AERMOD screening mode), the 1-hour NO_2 values at the Buckingham, JB Tonkin, and Mockingbird Hill compressor stations (modeled source impact plus assumed background) are greater than 150 ug/m3; the 1-hour NO_2 NAAQS standard is 188 ug/m3.[71] Because these modeled concentrations are close to the 1-hour NO_2 NAAQS standards, CBF recommends that FERC staff conduct a careful examination of (a) the appropriateness and/or representativeness of the assumed background levels and (b) the assumptions regarding the data used for the MAKEMET "worst-case" screening data. In addition, the AERMOD modeling of the Project should be conducted using actual meteorological data (instead of screening mode) to determine local NO_2 concentration impacts and to demonstrate attainment with the 1-hour NO_2 NAAQS.

IV. CONCLUSION

As discussed in the foregoing paragraphs, the DEIS prepared by FERC staff provides inadequate information regarding the foreseeable impacts of the ACP and SHP pipeline project on surface waters and air quality and offers an inadequate evaluation of the mitigation measures proposed to address identified impacts. We respectfully urge FERC staff to take these comments into account, require the Project

[70] DEIS at 4-454.
[71] DEIS at 4-455, 4-457 (Tables 4.11.1-11 and 4.11.1-13).

developers to supply omitted material and undertake a careful evaluation of impacts and mitigation consistent with the requirements of NEPA, as part of a final EIS and prior to the Commission's making a final determination on the Certificates of Public Convenience and Necessity.

Sincerely,

Margaret L. (Peggy) Sanner

cc: Pamela Faggert, Chief Environmental Officer & Sr. VP-Sustainability, Dominion Resources
Rebecca LePrell, CBF Virginia Executive Director
Chris Moore, CBF Virginia Senior Regional Ecosystem Scientist
Joseph Wood, Ph.D., CBF Virginia Staff Scientist
Ariel Solaski, CBF Staff Litigation Attorney

COMPANIES/ORGANIZATIONS COMMENTS

CO90 – West Virginia Rivers

WEST VIRGINIA RIVERS

April 6, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: Draft Environmental Impact Statement, Docket No. CP15-554

Dear Deputy Secretary Davis,

West Virginia Rivers Coalition, along with the organizations signed below, respectfully submit the following comments on the Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline (ACP), Docket No. CP15-554.

We found the DEIS lacking of the critical information needed to fully analyze the significant impacts of the project. Due to the lack of adequate information, we are unable to provide a comprehensive analysis of the DEIS. Because of this deficiency, we request a revised DEIS to be issued for the proposed project with all the necessary information to meet the requirements of the National Environmental Policy Act (NEPA). Specifically, the regulation explains that "NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA." The ACP DEIS released fails to meet NEPA requirements and a revised DEIS must be issued. A complete DEIS is necessary to provide the planning and analysis required so that agency decision-makers can mitigate or avoid impacts, and can correctly identify the least-impacting alternative.

The gas industry in general, and ACP in particular, consistently display an attitude of arrogance and constantly violate environmental rules and requirements. Even those conditions agreed to by industry go by the wayside when economic conditions encourage, or lax monitoring allow, the company to ignore those requirements. As such, FERC must assume a worst-case scenario as the most probable outcome for any impacts not fully mitigated by enforceable requirements.

Additionally, we request the following to be addressed in the revised DEIS:

1.1 Project Purpose and Need

CO90-1 **Page 1-2: The DEIS does not adequately address the need of the project.** The only evidence of need for the pipeline is that ACP is contracting with its own affiliates. There does not appear to be any independent analysis of existing pipeline capacity. This leads to expensive overbuilding and needless

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CO90-1 See the response to comment CO46-1.

CO90-1 (cont'd) environmental impacts. Former Commission Chairman Norman Bay said the commission should also consider whether capacity is needed to ensure deliverability to power generators, reliability benefits and concerns "that anticipated markets may fail to materialize." This issue must be fully analyzed in a revised DEIS.

4.1.4.2 Slope Stability

CO90-2 **Steep Slopes, page 4-28: The DEIS fails to adequately address slope hazards.** The DEIS states "Atlantic and DTI have not yet completed the Phase 2 analysis and field surveys at all evaluation sites, and final measures related to slope hazards have not yet been completed for ACP and SHP." Mitigation designs for steep slopes is critical in evaluating the hazards posed by construction on slip prone areas. The public must be provided access to this information in a revised DEIS. The failure to include complete information on this issue in the DEIS implies that information on steep slopes is not particularly important to decision-making, a conclusion contradicted by both science and common sense, as slope hazards can lead to catastrophic failure of the pipeline. Such a failure could lead to substantial damage to the natural environment, private and public property, and loss of human life, which, according to 40-CFR-1508.27, clearly would be defined as a significant impact, and which therefore, must be addressed in a revised DEIS.

4.1.4.5 Mine Subsidence

CO90-3 **Page 4-33: The DEIS fails to address potential impacts associated with underground mines.** The DEIS states, "Atlantic and DTI are in the process of evaluating the potential for underground mines to affect the proposed ACP and SHP; however, these evaluations are not yet complete." ACP would cross 15 abandoned underground coal mines; however, a Mining Area Construction Plan has not been submitted. Construction over underground mines creates a potential safety hazard and threatens the integrity of the pipeline. This issue must be addressed in a revised DEIS. FERC cannot determine that the potential impacts have been avoided and mitigated without additional evaluation and planning by ACP.

4.1.6 Geology on Federal Lands

CO90-4 **Monongahela National Forest, page 4-37: The DEIS fails to satisfy the NEPA requirements for construction on public lands.** The DEIS states, "Atlantic has not provided the information requested by the FS to access potential project-induced landslide hazards and also the effectiveness of proposed mitigation measures for restoration of steep slopes on MNF lands." This statement appears to have a typo; "access" should be corrected to say "assess". The United States Forest Service (USFS) must have detailed information to assess the project's impacts on public lands. If the USFS has requested this information to adequately assess the impacts and ACP has not provided it, then the DEIS was issued prematurely. The USFS must have all the information requested to make their determination. Failure to provide this information violates NEPA requirements. FERC must issue a revised DEIS with the information requested by the USFS.

CO90-2 See the response to comment CO66-30.

CO90-3 Atlantic has determined that mapped coal mines crossed by the project are hundreds of feet below the surface and are room-and-pillar mines where large subsidence events do not occur. As discussed in section 4.1.4.5, based on the types of underground mines present, we conclude the potential for underground mine collapse to damage the proposed facilities has been adequately avoided and minimized. Available geotechnical studies relating to surface and subsurface mine subsidence hazards are recommended to be submitted prior to construction. If shallow mines are identified from these studies, a Mining Area Construction Plan would then be required.

CO90-4 FS response: Since the draft EIS, Atlantic has provided additional information and analyses as requested by the FS to evaluate the effects of the proposed project. The FS has worked with Atlantic to develop project design features, mitigation measures, and monitoring procedures to ensure that NFS resources are protected as much as possible. The BIC Team and the SAIPR provide design and construction practices for steep terrain. Atlantic would also follow the FERC Plan and West Virginia and Virginia state requirements and BMPs. The FS continues to work with Atlantic on site-specific designs which would be used to minimize the potential risks for sliding and other slope instabilities and would require additional site designs.

4.1.7 Conclusion

CO90-5 **Page 4-42: The DEIS does not provide adequate information to determine that impacts from landslides will be minimal.** The DEIS states "However, Atlantic and DTI are currently working to provide documentation of the likelihood that their proposed design features and mitigation measures would minimize the risk of landslides in the project area." Without this information FERC cannot conclude that ACP has minimized the risk of landslides in the project area. A revised DEIS must be issued which includes the deficient information. NEPA specifically requires agencies to "Take a Hard Look" at the impacts of the proposed action, and to allow public review of that information, before making a decision. Asking the public to comment on incomplete information, and assuming that any subsequent documentation filed by ACP will mitigate all hazards, clearly cannot be construed as an objective analysis of impacts.

4.3.1.5 Water Supply Wells and Springs

CO90-6 **Page 4-74: The DEIS does not supply sufficient information on water supply wells and springs.** The DEIS states "Atlantic should complete the remaining field surveys for wells and springs within 150 feet of the construction workspace, and within 500 feet of the construction workspace in karst terrain, and file the results, including type and location, with the Secretary." This information is critical in determining the impacts of construction on private drinking water sources. The results of the completed field surveys must be included in a revised DEIS.

4.3.1.7 Groundwater Impacts and Mitigation

CO90-7 **Karst Groundwater, page 4-84: The DEIS does not adequately identify mitigation measures in karst terrain.** The DEIS states "Atlantic should consult the appropriate state agencies to identify additional mitigation procedures to be implemented in the event construction activities intercept a saturated karst conduit and file with the Secretary the measures that would be implemented to minimize these impacts, for review and written approval by the Director of OEP." The results of consultations and additional mitigation procedures to avoid impacts in karst terrain is critical to ensure that avoidance and mitigation is adequate. This information must be included in a revised DEIS.

4.3.2.2 Existing Surface Water Resources

CO90-8 **Field Survey Summary, page 4-89: Details of crossing plans for major waterbodies are incomplete.** The DEIS states, "site-specific construction and restoration measures have not been incorporated into the plans." This information is vital when assessing the impacts of construction on major waterbodies and must be included in a revised DEIS.

CO90-9 **West Virginia Surface Water Classifications, page 4-94: The DEIS does not adequately address Tier 3 stream impacts.** The DEIS states, "Use of this existing access road would not likely impact the stream. We acknowledge that various tributaries that flow into Tier 3 streams would be crossed by the projects, some of which may contain trout and cross public lands. By implementing the construction measures

CO90-5 Comment noted.

CO90-6 Comment noted.

CO90-7 Comment noted.

CO90-8 Comment noted.

CO90-9 Comment noted.

CO90-9 (cont'd) discussed below in section 4.3.2.6, impact on these streams and stream biota would be effectively minimized." The FERC cannot conclude that construction would not 'likely' impact Tier 3 streams without an antidegradation review as required by WV State Code *§22-11-7b. Water quality standards; implementation of antidegradation procedures; procedure to determine compliance with the biologic component of the narrative water quality standard.* An antidegradation review must be performed on any Tier 3 streams potentially impacted by ACP.

CO90-10 **Public Drinking Water Sources, page 4-104: The DEIS does not adequately address impacts to public drinking water supplies.** The DEIS states "ten surface water intakes are within 3 miles of ACP, and eight source water protection watersheds would be crossed...The remaining waterbody crossings would be conducted using a dry crossing method, which reduces sedimentation and turbidity impacts, as the pipeline trench is isolated from flowing water." While the DEIS mentions the crossing method reduces sedimentation, it provides no basis for this claim. A turbidity analysis is needed where the pipeline would impact source water protection areas. Excess sediment in source water accelerates the formation of haloacetic acids when chlorine is added for treatment purposes. Haloacetic acids are regulated by EPA under the Safe Drinking Water Act. Excess sediment in source water can cause water utilities to exceed the standards resulting in undue hardships on the water utility and endangering human health.

CO90-11 **Hydrostatic Testing and Dust Control Procedures, page 4-111: The DEIS does not identify water sources for dust control.** The DEIS states, "Water sources for dust control are still being evaluated by Atlantic and DTI." Atlantic will use approximately 38.2 million gallons of water for dust control during the driest times and when streams are at their lowest flow. The DEIS must identify the sources of water for dust control and the approximate amount of the withdrawal from each water source. Without this information the DEIS does not satisfy NEPA requirements and a revised DEIS must be issued which contains the deficient information.

CO90-12 **First-order Streams: The DEIS fails to address cumulative impacts on headwater streams.** First-order or headwater streams are vitally important to the health of the watershed. The overall health of a watershed is dependent on its network of tributaries. Further analysis is needed to understand the impacts to headwater streams. A project of this magnitude that impacts multiple watersheds must be assessed at a regional scale. The DEIS must contain an analysis on the projects total impacts within each watershed to determine the overall impacts of the project. ACP must provide an analysis for each watershed including information on the number of headwater stream crossings by watershed and the number of stream crossings on each stream if waterbodies are crossed multiple times. At the landscape level, impacts from the ROW are exacerbated by the cumulative impacts of the proposed access roads. There is a negative correlation between road miles within a watershed and water quality. An analysis of the pre-construction vs. post-construction ratio of roads within a basin must be included in the DEIS to adequately assess the impacts from the proposed project.

CO90-13 **Stream Bank Cover: The DEIS fails to address loss of stream bank cover due to stream crossings.** The DEIS should include an analysis of the loss of stream bank cover on a watershed scale to determine the

CO90-10 Comment noted.

CO90-11 Comment noted.

CO90-12 Comment noted.

CO90-13 Comment noted.

CO90-13 (cont'd) % loss of stream bank cover by watershed to provide a better understanding of the potential impacts of the project.

4.3.3.8 Wetland Mitigation

CO90-14 **Page 4-125: The Wetlands Mitigation plan is not included within the DEIS.** The DEIS states "construction and operation of ACP would temporarily and permanently impact 783.4 and 247.5 acres of wetlands, respectively." However, the wetlands mitigation plan is not included in the DEIS and FERC recommends submitting it prior to construction. This plan is critical in assessing whether the impacts to wetlands have been mitigated properly. Allowing the plan to be submitted prior to construction prevents the public from reviewing and commenting on the wetland mitigation plan, undermining the public 's participation and failing to meet the requirements of NEPA. The Wetland Mitigation Plan must be included in a revised DEIS.

CO90-15 **Wetland Impacts: The DEIS fails to address the project's impact on wetland functions regarding water storage for flood prevention.** The DEIS must provide an analysis of the disruption of water storage for flood control. The analysis must include watershed-based wetland impacts with details on the acres of impacted wetlands by watershed to determine whether flooding within the watershed has the potential to significantly increase as a result of the loss of wetland functions during construction and operation of the pipeline.

4.3.3.10 Conclusion

CO90-16 **Page 4-125: The DEIS prematurely concludes that the project would not significantly impact wetlands.** The DEIS states "Based on Atlantic's and DTI's measures to avoid, minimize, and mitigate wetlands, along with adherence to their construction and restoration plans; the FERC *Procedures*; and federal, state, and local permit requirements, we have determined that ACP and SHP would not significantly impact wetlands." The mitigation plan has not been completed and the wetland permits have not been issued; therefor, FERC is premature in concluding that the project will not significantly impact wetlands. FERC must have all the pertinent information before drawing that conclusion.

4.5.2.4 Karst, Cave, and Subterranean Habitat

CO90-17 **Page 4-157: The DEIS does not adequately address impacts to subterranean habitat.** The DEIS states "Atlantic should file with the Secretary, and provide to the FWS, FS, WVDNR, and VDGIF, a revised *Karst Mitigation Plan*" Conservation measures to address potential impacts to subterranean obligate species have not been identified. The DEIS must include this critical information to adequately assess the potential impacts.

4.5.6 Habitat Fragmentation and Edge Effects

CO90-18 **Page 4-165: The DEIS analysis on forest fragmentation is incomplete.** The DEIS states "Several agencies, including the FS and WVDNR, have expressed concerns regarding forest fragmentation and the impacts on interior forest and their associated wildlife species." FERC recommends several additional items be submitted prior to the close of the DEIS comment period to address the deficiency. The additional

CO90-14 Comment noted.

CO90-15 Comment noted.

CO90-16 Comment noted.

CO90-17 The referenced text has been updated.

CO90-18 The referenced text has been updated.

CO90-18 (cont'd) information should have been included in the DEIS. A revised DEIS must be issued containing this critical information.

4.6.2.1 West Virginia Threatened and Endangered Resources

CO90-19 **Brook Trout, page 4-176: The DEIS does not adequately address impacts to brook trout.** The DEIS states "the FWS encouraged Atlantic and DTI to avoid and minimize impacts on streams that contain brook trout habitat through coordination with appropriate resource agencies.... The WVDNR has expressed concern with Atlantic's proposed construction activities at Big Spring Fork." Evaluations of potential impacts to Big Spring Fork have not been completed. This information is critical to assessing the impacts on brook trout populations and must be included in the DEIS.

Eastern Hellbender: The DEIS fails to address the project's impacts on Eastern Hellbenders. The hellbender (*Cryptobranchus alleganiensis*), also known as the hellbender salamander, is a species of aquatic giant salamander endemic to eastern North America. This is a species of special concern in WV. Hellbender populations have drastically declined throughout their range, mainly because of declining stream quality. Hellbenders are sensitive to sedimentation issues because sediment smothers the hellbender's habitat. Impacted streams must be assessed for potential impacts on the hellbenders.

4.6.5 Aquatic Resources on Federal Lands

CO90-20 **Monongahela National Forest, page 4-195: Aquatic Surveys are not complete.** The Forest Service requested additional surveys for sensitive aquatic species including the candy darter (*Etheostoma osburni*), New River shiner (*Notropis scabriceps*), Appalachia darter (*Percina gymnocephala*), and Kanawha minnow (*Phenacobius teretulus*), in addition to the elktoe mussel (*Alasmidonta marginata*) and green floater mussel (*Lasmigona subviridis*). The results of the surveys had not been provided to FERC by the release of the DEIS. These results are imperative in assessing the impacts of the project on aquatic resources and must be included in a revised DEIS. Additionally, surveys for these species must be conducted in all streams having suitable habitat.

4.7.1 Endangered Species Act-Protected Species

CO90-21 **Page 4-199: The DEIS fails to adequately address impacts on Threatened and Endangered Species.** The DEIS states "Atlantic and DTI have not provided conservation measures to address potential impacts to these species in all cases." All potential impacts and conservation measured to avoid and minimize impacts must be included in a revised DEIS.

Page 4-199: Section 7 consultations with the USFWS are not complete. The DEIS must contain the results of the Section 7 consultations under the Endangered Species Act. Failure to include the results of Section 7 consultations with USFWS in the DEIS does not satisfy the NEPA requirements. Section 7 consultations must be included in a revised DEIS.

CO90-22 **Page 4-202: The DEIS is lacking information on the impacts of water withdrawals on threatened and endangered species.** The DEIS states "FWS is concerned that discharged water and stormwater run-off from proposed access roads adjacent to waterbodies could introduce increased sedimentation and/or

CO90-19 As stated in section 4.6.2, ACP would cross Big Spring Fork, which is in the headwaters of Elk River. This system provides nursery waters for reproducing populations of brook, brown, and rainbow trout. Atlantic proposes to cross Big Spring Fork using a dry-ditch crossing technique with the pipeline, and proposes two permanent access roads in proximity to the pipeline crossing. Atlantic would also conduct in-stream blasting at two locations. Atlantic has committed to the adhering to the trout TOYR of September 15 to March 31 for all in-stream activities at Big Spring Fork and all other designated trout and unnamed tributaries to trout waters. Atlantic would no longer use the Big Spring Fork or the two unnamed tributaries for the withdrawal of 2.6 million gallons of water to support hydrostatic testing.

Atlantic would attempt to minimize downstream sedimentation and turbidity, and subsequent impacts on aquatic biota in these waterbodies, by conducting the crossings during low-flow periods within the applicable TOYR for protection of fisheries and species of special concern, and following the FERC Plan and Procedures (see section 2.3.1-1) relative to construction on the streambanks. Impacts and associated mitigation measures for the eastern hellbender are discussed in table S-1 of appendix S.

CO90-20 FS response: Aquatic resources surveys necessary to conduct an appropriate analysis were completed and are documented along with the analysis and conservation measures for specific species in numerous sections of the final EIS, including sections 4.3-Water Resources, 4.6-Aquatic Species, 4.7-Special Status Species, and 5.0-Conclusions and Recommendations; as well as appendix G - Draft Construction, Operations, and Maintenance Plan, appendix K-Waterbodies Crossed by ACP and SHP, appendix L-Wetlands Crossed by ACP and SHP, and appendix R-Forest Service Management Species Tables; and in the draft BA and BE for the project.

CO90-21 Section 4.7.1 recommends that construction of the projects be conditioned upon the completion of all outstanding biological surveys and section 7 consultation with the FWS. Section 4.7.1 has been updated with enhanced conservation measures for special status species. All subsections in section 4.7 have been updated with the most recent survey results and avoidance, mitigation, and conservation measures.

CO90-22 Section 4.7.1 has been updated to include enhanced conservation measures, including those related to water withdrawals and discharges. Sections 4.7.1.7, 4.7.1.8, 4.7.1.10, 4.7.1.11, 4.7.1.14, and 4.7.1.15 have been updated with avoidance, mitigation, and conservation measures.

CO90-22 (cont'd) contaminants, degrading habitat quality for ESA-listed or under review species." These are serious concerns and they have not been addressed in the DEIS. The proposed conservation measures to address these concerns must be included in a revised DEIS.

CO90-23 **Freshwater Mussels Impact Assessment, Conservation Measures, and Determination, page 4-238: Conservation measures to avoid or mitigate impacts to threatened and endangered mussel species have not been identified.** The DEIS states "FERC and FWS will re-evaluate this determination upon receipt of pending survey results and proposed conservation measures." If FERC and FWS have not made a final determination on the impacts to threatened and endangered mussel species than the DEIS was released prematurely. A revised DEIS must be issued when the determination of impacts has been made.

4.7.3.4 U.S. Forest Service Managed Species Conclusions

CO90-24 **Page 4-253 to 4-255: The Biological Evaluation, Locally Rare Species Report and Management Indicator Species Report have not been finalized.** The DEIS states "Due to pending survey results, pending conservation measures, and consultations with the MNF, GWNF, and other appropriate federal and state agencies detailed above, our determination regarding the overall impacts on FS managed species is pending." The fact that the DEIS fails to provide enough information for the agencies to make a determination on impacted species is yet another glaring example of the inadequacies of the DEIS. A revised DEIS must be issued when this information becomes available.

4.7.4 State-Sensitive Species

4.7.4.1 West Virginia

CO90-25 **Freshwater Mussels, page 4-257: The DEIS fails to adequately address impacts to freshwater mussel species.** Surveys have not been completed and conservation measures have yet to be identified for two locations in WV with the potential to impact freshwater mussel species. A revised DEIS must be issued to address this deficiency.

4.7.4.6 State Sensitive Species Conclusions

CO90-26 **Page 4-267: The DEIS fails to address impacts on sensitive species.** The DEIS states, "Due to pending survey results, pending conservation measures, and consultations with the appropriate federal and state agencies, in particular with regard to bat species and bat hibernacula, subterranean obligate species, and aquatic species, our determination regarding the overall impacts on statelisted and sensitive species is pending." This lack of information in the DEIS blatantly disregards the entire purpose of NEPA. A revised DEIS must be issued that contains adequate information for the public to fully understand the impacts of this project.

4.9.8 Economy and Tax Revenues

CO90-27 **Page 4-410: The ACP DEIS fails to analyze economic impacts to West Virginia gas users.** Almost certainly, the ACP would result in significant increases in price of gas in WV, which will adversely affect

CO90-23 Section 4.7.1 has been updated to include enhanced conservation measures, including those related to water withdrawals and discharges. Section 4.7.1.15 has been updated with avoidance, mitigation, and conservation measures.

CO90-24 FS: The FS and FERC have received additional surveys and analysis since the DEIS and have incorporated it into the BE and appendix R-FS Managed Species. Surveys are ongoing and an effects determination for Regional Forester Sensitive Species will be reflected in the FS' Final ROD. See response to comment CO90-20 for aquatic species.

CO90-25 Section 4.7.1 conditions the construction of the projects on the completion of all outstanding biological surveys, any necessary consultations with federal and state agencies. Section 4.7.4 has been updated with avoidance, mitigation, and conservation measures.

CO90-26 Section 4.7.1 conditions the construction of the projects on the completion of all outstanding biological surveys, any necessary consultations with federal and state agencies. Section 4.7.4 has been updated with avoidance, mitigation, and conservation measures.

CO90-27 See the response to comment CO85-7.

CO90-27 (cont'd) current users. The DEIS needs to analyze these impacts on the economy, and completely fails to do so. Former Commission Chairman Norman Bay has previously stated "Overbuilding may subject ratepayers to increased costs of shipping gas on legacy systems. If a new pipeline takes customers from a legacy system, the remaining captive customers on the system may pay higher rates." This issue must be addressed in a revised DEIS.

4.11.1.3 Air Emission Impacts and Mitigation

CO90-28 **Page 4-455: The DEIS fails to adequately address greenhouse gas emissions.** While this DEIS does provide some information on greenhouse gases, it does not include a detailed analysis of methane emissions. Additionally, it does not address the basic question of whether cumulative emissions will increase or decrease, whether the CO2 emissions of end users of the gas from the ACP pipeline displace, or add to, emissions from existing coal-fired power plants, or the impacts of "upstream" emissions from additional gas drilling, pipelines and compressor stations. Former Commission Chairman Norman Bay called on the commission to "analyze the environmental effects of increased regional gas production from the Marcellus and Utica" and consider "the downstream impacts of the use of natural gas and … a life-cycle greenhouse gas emissions study." The revised DEIS must address these issues.

4.11.3.2 Noise

CO90-29 **Page 4-471: The DEIS does not adequately address noise impacts.** The DEIS states "There would be no noise impacts due to operation of the pipeline." However, gas pipelines create a phenomenon of low and extra-low frequency soundwaves that occur in the communities they transverse caused by the operations of high pressure natural gas transmission systems. These noises are known as "flutter" and "hum." The DEIS must address these noise occurrences and their impact on nearby residents in a revised DEIS.

5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources

CO90-30 **Page 5-17: The DEIS fails to adequately address impacts on recreation and special interest areas.** The DEIS states "Site-specific crossing plans are pending for these features, including the Greenbrier River-Trail, Allegheny Trail, North Bend Rail-Trail, and Forest Trails Loop Trail." Without this information, one cannot adequately address how construction will impact recreation and tourism in these areas. This information must be included in a revised DEIS.

In conclusion, for the reasons outlined above, we request a revised DEIS to be issued with complete and accurate information in order to comply with the NEPA requirements. A complete DEIS is necessary to provide the planning and analysis needed so that the agency decision-makers can mitigate or avoid impacts, and can correctly identify the least-impacting alternative. We appreciate the opportunity to submit these comments and look forward to further participation in this proceeding.

Respectfully Submitted,

Angie Rosser & Autumn Crowe
West Virginia Rivers Coalition

8

CO90-28 Sections 4.11.1 and 4.13.3.12 include our analyses of GHG emissions and climate change, including cumulative impacts and end use emissions.

CO90-29 See the response to comment CO68-17.

CO90-30 While some information was still pending at the time of issuance of the draft EIS, the lack of this final information does not deprive the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such effects. The EIS includes sufficient detail to enable the reader to understand and consider the issues raised by the proposed project and addresses a reasonable range of alternatives.

COMPANIES/ORGANIZATIONS COMMENTS

CO90 – West Virginia Rivers (cont'd)

Brent Walls
Upper Potomac Riverkeeper
Potomac Riverkeeper Network

George Santucci
New River Conservancy

Elizabeth Nicholas
Waterkeepers Chesapeake

Matt Wasson
Appalachian Voices

Natalie Thompson
Ohio Valley Environmental Coalition

Allen Johnson
Christians for the Mountains

Beth Little
Eight Rivers Council

Cindy Ellis & Cindy Rank
West Virginia Highlands Conservancy

Jennifer Baker
Greenbrier River Watershed Association

Nancy Novak & Helen Gibbins
League of Women Voters of WV

Justin Raines
Glenville Environmental Organization

Chris Chanlett
Summers County Residents Against the Pipeline

Carolyn Reilly
Bold Alliance

COMPANIES/ORGANIZATIONS COMMENTS

CO90 – West Virginia Rivers (cont'd)

Lakshmi Fjord
Friends of Buckingham County Virginia

Chris Hale
Friends of Water

April Keating
Sierra Club, West Virginia Chapter

Kevin Campbell
Mountain Lakes Preservation Alliance

Becky Park
Citizens' Climate Lobby of Southern West Virginia

COMPANIES/ORGANIZATIONS COMMENTS

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April 6, 2017

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

RE: Chesapeake Climate Action Network supplemental comments regarding the Draft Environmental Impact Statement on the Atlantic Coast Pipeline and Supply Header Project (FERC Docket Nos. CP15-554-000, CP15-554-001, and CP15-555-000)

On behalf of Chesapeake Climate Action Network ("CCAN"), we offer these comments regarding the draft Environmental Impact Statement ("DEIS") on the Atlantic Coast Pipeline and Supply Header Project ("ACP"), issued by the Federal Energy Regulatory Commission ("FERC") on December 30, 2016. These comments from CCAN supplement the comments submitted by the Appalachian Mountain Advocates on behalf of CCAN and other groups.

CCAN is the first grassroots, nonprofit organization dedicated exclusively to fighting global warming in Maryland, Virginia, and Washington, D.C. Our mission is to build a diverse movement powerful enough to put our region on the path to climate stability, while using our proximity to the nation's capital to inspire action in neighboring states, regions nationwide, and countries around the world.

These comments begin by outlining the federal government's plan to clean up the Chesapeake Bay, the important role protected lands play in this plan, and the pipeline's impact to these lands. They conclude that FERC's DEIS completely failed to consider the impact of the ACP on the Chesapeake Bay clean-up plan and recommend additional analysis before approval.

I. The Federal Energy Regulatory Commission failed to consider the consequences of the Atlantic Coast Pipeline on high-value lands protected from development in compliance with the Chesapeake Bay Total Maximum Daily Load

The decision to grant Atlantic Coast Pipeline, LLC ("Atlantic") a permit to construct the ACP is a "major Federal action" within the meaning of the National Environmental Policy Act ("NEPA"), and it must be preceded by the preparation of an Environmental Impact Statement ("EIS"). 42 U.S.C. § 4332. FERC must prepare an EIS that addresses:

Z-2168

> (i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between the local short-term uses of the project as compared to the long term use of the land, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

42 U.S.C. § 4332. Under NEPA, "agencies [must] take a 'hard look' at the environmental effects of their planned action." Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 374 (1989). If a court determines that an agency did not take a hard look at the relevant factors, the court may find that the agency's review was arbitrary and capricious and send the analysis back for review. 5 U.S.C. § 706(2)(A). Here, FERC completely failed to consider how, by developing lands that are supposed to be permanently protected from development, the ACP will impact the Chesapeake Bay clean-up plan. We strongly recommend that FERC require Atlantic to consider the ACP's impact on the Chesapeake Bay before granting approval of the project.

CO91-1

a. Authority for the Chesapeake Bay Clean-Up Plan

The Chesapeake Bay was designated a national treasure by Executive Order in 2009. Exec. Order No. 13,508 (May 12, 2009). The Order also established a federal program tasked with cleaning up the Bay by 2025. To comply with this Order, the Environmental Protection Agency ("EPA") established the Bay clean-up plan, known as the "Total Maximum Daily Load" ("TMDL"). The TMDL identifies the necessary pollution reductions of nitrogen, phosphorus, and sediment across the seven jurisdictions in the Bay watershed[1] and sets pollution limits necessary to meet applicable water quality standards in the Bay and its tidal rivers. The applicable water quality standards vary depending on the particular water body. When setting the standard, a state must first designate the use of the water body (fishing or recreation, for example) and then establish criteria necessary to protect that use. 40 C.F.R. § 131.6. Under the TMDL, all pollution control measures needed to fully restore the Bay must be in place by 2025, with at least 60 percent of the actions completed by 2017. Am. Farm Bureau Fed. v. EPA, 984 F. Supp. 2d 289, 305 (Pa. 2013).

b. Development is a Main Stressor to the Chesapeake Bay

Land development continues to be a top stressor to the Chesapeake Bay ecosystem and a threat to the goal of remediating the Chesapeake Bay. Developing forests and open lands increases pollution by removing the ecosystem services responsible for capturing rainfall and reducing runoff, filter nutrients and sediment, and stabilize soils. Margaret Walls & Virginia

[1] The jurisdictions are Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia.

CO91-1 Your letter fails to identify which lands are protected. Additionally, the project will not hinder the ability to clean up the Bay.

CO91-1 (cont'd)

McConnell, *Incentive-Based Land Use Policies and Water Quality in the Chesapeake Bay*, Discussion Paper 04–20, 4 (March 2004). An 18 percent increase in impervious surfaces results in an 80 percent increase in runoff volume. Stephen J Gaffield, PhD., et al., *Public Health Effects of Inadequately Managed Stormwater Runoff*, 93 AM. J. PUBLIC HEALTH. 1527, 1528 (2003). By contrast, natural groundcover undisturbed by development generally results in only 10 percent of the precipitation traveling as runoff. PRINCE GEORGE'S COUNTY, LOW IMPACT DEVELOPMENT HYDROLOGIC ANALYSIS 4 (1999). The remaining precipitation is soaked up and filtered by the land.

Stormwater runoff is one of the "non-point" sources of pollution that have become the dominant water quality problem in the Bay, dwarfing all other sources of nutrients and sediments. *Am. Farm Bureau*, 984 F. Supp. 2d at 296. Increased land disturbance because of pipeline construction could increase the discharge of sediments into streams, raising total suspended solids concentrations. P.J. Drohan & M. Brittingham, *Topographic and Soil Constraints to Shale-Gas Development in the North Central Appalachians*, 76 SOIL SCI. SOC. AM. J. 1696, 1706 (2012). In addition, removing vegetation for construction and rights-of-way can cause excess runoff and sedimentation that are harmful to river ecosystems, especially in sensitive headwater streams. Susan L. Brantley et al., *Water Resource Impacts during Unconventional Shale Gas Development: the Pennsylvania Experience*, 126 INT'L J. OF COAL GEOLOGY 140, 153 (2014).

c. A Key Strategy to Meet the Bay Clean-Up Plan is to "Permanently Protect Lands from Development"

Protecting land is a key strategy for Bay restoration efforts. On June 16, 2014, representatives from all seven jurisdictions in the Bay watershed signed the most recent Chesapeake Bay Watershed Agreement. CHES. BAY PROGRAM, WATERSHED AGREEMENT (2014). To achieve the goal of restoring the Bay by 2025, the jurisdictions identified protecting lands as a top priority. Since signing the Agreement, the Chesapeake Bay Program has been crafting "management strategies" that describe the steps necessary to achieve the goals of the Agreement. Among the steps, jurisdictions committed to protecting an additional two million acres of lands throughout the watershed by 2025. *Ches. Bay Program, Management Strategy,* http://www.chesapeakebay.net/managementstrategies/strategy/protected_lands (last visited April 6, 2017).

The Bay Program defines "protected lands" as those "permanently protected from development, whether by purchase or donation, through a perpetual conservation or open space easement or fee ownership." CHES. BAY PROGRAM: INDICATOR ANALYSIS AND METHODS DOCUMENT 1 (2013), *available at* http://www.chesapeakebay.net/images/indicators/5402/analysis_and_methods_2016_protected_1

CO91-1 (cont'd)

ands_02-06-2017.pdf (last visited April 6, 2017). Protected lands may be held in private ownership as working farms or forests; designated open space and recreational land as a county, town, city, state or federal park; publicly owned forests or wetlands; historically significant properties held as battlefields, colonial towns and farms or military-owned parks. ANALYSIS AND METHODS DOCUMENT at 1.

The Bay clean-up plan requires these lands to be "permanently protected from development." Indeed, the Chesapeake Bay Program's Watershed Model, which is used to analyze the impact on the watershed of various pollution-reducing actions, assumes that these lands are permanently protected. CHES. BAY PROGRAM, PHASE 5.3 WATERSHED MODEL § 4.7.3, at 4-40, *available at* ftp://ftp.chesapeakebay.net/modeling/P5Documentation/SECTION_4.pdf. The model helps guide decision-making for reducing pollution and meeting water quality standards. It *cannot* accurately predict impacts to the Bay if it is based on false assumptions.

The commonwealth of Virginia is heavily invested in the Bay clean-up plan. In 2011, the Virginia Senate Finance Committee estimated that the total cost to Virginia of cleaning up the Bay could reach $3.2 billion by 2025. VA. SENATE FINANCE COMMITTEE, CHESAPEAKE BAY TMDL WATERSHED IMPLEMENTATION PLAN: WHAT WILL IT COST TO MEET VIRGINIA'S GOALS? Attachment 2, at 17, *available at* http://www.chesapeakebay.net/channel_files/17761/bay_tmdl_wip_ii_overview_for_rrbc_12feb13.pdf. By all measures, the state has already invested significant resources into clean-up, with state funding for Chesapeake Bay restoration activities in fiscal year 2016 exceeding $255 million. OFFICE OF MGMT. & BUDGET, REPORT TO CONGRESS: CHESAPEAKE BAY RESTORATION SPENDING CROSSCUT 25 (Dec. 2016), http://www.chesapeakebay.net/documents/cbara_chesapeake_bay_restoration_spending_crosscut_report.pdf. As part of those investments, the state has protected 2,907,343 acres of land—21 percent of Virginia land within the watershed. CHES. BAY PROGRAM, INDICATOR ANALYSIS AND METHODS DOCUMENT: PROTECTED LANDS 5 (updated Sept. 2016), *available at* http://www.chesapeakebay.net/images/indicators/5402/analysis_and_methods_2016_protected_lands_02-06-2017.pdf.

Virginia is on track to meetings its TMDL goals, but it cannot afford setbacks. According to the data provided by Virginia, the commonwealth is on track to meet its nutrient reduction goals. EPA EVALUATION OF VIRGINIA'S 2014-2015 AND 2016-2017 MILESTONES 1 (June 17, 2016), *available at* https://www.epa.gov/sites/production/files/2016-06/documents/va_2014-2015_-_2016-2017_milestone_eval_06-17-16.pdf. It failed, however, to meet its state-wide target for sediment in 2015. *Id.* As a result, the EPA initiated backstop authority and put Virginia's urban/suburban stormwater program under "enhanced oversight" in 2016. *Id.* With so much invested, Virginia cannot afford for its progress to be undermined by pipeline development that fails to consider impacts to the Bay.

d. The Atlantic Coast Pipeline Will Set Back Efforts to Clean Up the Bay

CO91-1 (cont'd)

Construction and operation of the ACP threaten Virginia's commitment to protecting lands in the Chesapeake Bay and all the resulting water quality, public health, and other gains these protected lands are meant to achieve. Overall, the Project will disturb a total of 12,030.7 acres of land in connection with the installation and operation of 603.8 new miles of pipeline in West Virginia, Virginia, and North Carolina. FERC, DRAFT ENVIRONMENTAL IMPACT STATEMENT: ATLANTIC COAST PIPELINE AND SUPPLY HEADER PROJECT, Volume I, at 2-15 (Dec. 2016) [hereinafter DEIS]. Nearly 307 miles of the pipeline—approximately half—will be located in Virginia, DEIS at Table 2.1.1-1. In Virginia, much of the ACP would lie in the Chesapeake Bay watershed, leaving the watershed in Dinwiddie County in southern Virginia only to enter it again in the Tidewater region. DEIS at Table 4.3.2-1.

The construction process is destructive and polluting. During construction, temporary rights-of-way will require trees and vegetation to be removed from a 75- to 150-foot swath over the path of the pipeline, with additional space set aside for spoil and workspace. DEIS at Table 2.2.2-1, at 2-19 (the DEIS labels two different tables with this same number). The construction process involves "leveling the right-of-way surface." DEIS at 2-32. When rock is encountered, which is likely to be the case on the steep forested mountains of western Virginia, "blasting may be required to fracture the rock." DEIS at 2-32. Workers will dig trenches to depths of six to eight feet to submerge the 16- to 42-inch pipes below the surface. DEIS at 2-32–2-33. Upon completion of the trenching phase, the construction zone will be allowed to start the decades-long process of reversion back to its natural state. In some cases, the "clearing and restoration of forested areas would be a long-term to permanent impact because of the extended length of time it takes trees to grow to maturity from seedlings or saplings planted as part of the revegetation process." DEIS at ES-5. Permanent rights-of-way, between 50- and 75-feet wide, along which trees will never be allowed to grow, will remain above the entire stretch of the project. DEIS at Table 2.2.2-1, at 2-19.

CO91-2

Of specific concern to the Bay clean-up plan is ACP's plan to cross a variety of protected lands within the watershed. The crossings at issue will impact the George Washington National Forest and thousands of acres of land held under conservation easements in Highland, Augusta, Bath, and Nelson Counties.

The pipeline will disturb 301.4 acres of land in the George Washington National Forest, with permanent impacts to 156 acres. DEIS at 5-16. The George Washington National Forest is the largest federal landowner in the Chesapeake Bay watershed and the Forest Service recognizes that "[t]he Forest is . . . an important component of the Chesapeake Bay watershed." USDA, REVISED LAND AND RESOURCE MANAGEMENT PLAN: GEORGE WASHINGTON NATIONAL

CO91-2 See the response to comment CO91-1.

CO91-2 (cont'd)

FOREST 1-6, E-15 (Nov. 2014) [hereinafter 2014 LRMP]. On these lands, the Forest Service is requiring Atlantic to implement additional mitigation measures. DEIS at 4-148. These requirements are laid out in Land and Resource Management Plans ("LRMPs"). The LRMPs are comprehensive planning documents designed to guide land management decisions within the National Forest boundaries. The 2014 LRMP for the George Washington National Forest takes the Chesapeake Bay clean-up plan into account. "As the largest Federal land manager in the Bay watershed, the Forest fully supports measures like . . . the Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorous and Sediment." 2014 LRMP at 3-3. In other words, by requiring Atlantic to take additional steps—steps beyond what FERC requires—to comply with a management plan that takes the Bay into account, the Forest Service is making additional efforts to ensure that the pipeline complies with the TMDL.

By publication of the DEIS, consultations between Atlantic and the Forest Service were ongoing. To comply with Forest Service requirements as they relate specifically to the George Washington National Forest, FERC's DEIS included a laundry list of missing information, recommending that Atlantic file (a) a revised Biological Evaluation; (b) an updated Restoration and Rehabilitation Plan; and (c) an updated Construction, Operation, and Maintenance Plan. DEIS at 5-7. Nowhere in the DEIS did FERC itself discuss the George Washington National Forest's importance to and impact on the Chesapeake Bay.

CO91-3

The ACP would also cross 10 conservations easements in the Bay watershed, impacting nearly nine miles or 4,622 acres held by the Virginia Outdoors Foundation ("VOF"). DEIS at 4-324 & Table 4.8.5-1. The ACP will permanently impact 54.59 acres of these protected lands. Supplemental Filing, VOF Open Space Conversion Applications, Attachment 1, at 15 (filed Mar. 31, 2017). The VOF is a public organization created by Virginia General Assembly with the goal of preserving open-space lands and the natural, scenic, historic, scientific, open-space, and recreational areas of the Commonwealth. VA. CODE § 10.1-1800. Land held under VOF conservation easements is integral to Bay clean-up. According to its website, VOF is "responsible for more than one third of all the land conserved in the six-state Chesapeake Bay watershed since 2000." *Va. Outdoors Fdn., About VOF*, http://www.virginiaoutdoorsfoundation.org/about/ (last visited April 5, 2017).

Activities such as establishing rights-of-way require written approval from the VOF using standards outlined under Virginia law. VA. CODE § 10.1-1704(A). By publication of the DEIS, the VOF had declined to decide on Atlantic's unprecedented request to convert 10 separate conservation easements. *Va. Outdoors Fdn., Search: Atlantic Coast Pipeline*, http://www.virginiaoutdoorsfoundation.org/?s=atlantic+coast (last visited April 4, 2017). Nonetheless, FERC concluded that it believed that "the project w[ill] not be precluded from establishing an easement for ACP on each VOF easement crossed." DEIS 4-325. FERC then

CO91-3 The final EIS discussion of VOF conservation easements has been updated based on information from Atlantic, the VOF, and other appropriate permitting and regulatory authorities.

See the responses to comments CO3-1 and CO10-3.

CO91-3 (cont'd)

failed entirely to discuss the impacts of the development of these conservation easements on the Chesapeake Bay.

e. Conclusion

Protected lands play a key role in the federal government's—and Virginia's—plan to meet the Bay TDML. In total, the pipeline will disturb at least 4,923 acres of land in the Bay watershed that the Chesapeake Bay Program Watershed Model assumes is permanently protected and untouchable by development. The ACP will permanently impair 211 acres of this land. Volume I of the DEIS mentions the Chesapeake Bay a mere eight times in the 742-page document. It does not mention "protected lands," as this term is used by the Chesapeake Bay Program, even once. In its discussions about the impacts to public lands and lands held under conservations easements, FERC completely fails to account for how this unexpected development will impact the Bay. In conclusion, we strongly recommend that FERC require Atlantic to take a hard look at the effects of the ACP on the Chesapeake Bay.

COMPANIES/ORGANIZATIONS COMMENTS

CO92 – Satchidananda Ashram-Yogaville, Inc.

Federal Energy Regulatory Commission
Draft Environmental Impact Statement Comments, April 6, 2017

Atlantic Coast Pipeline Docket No, CP15-554
Supply Header Project Docket No. CP15-555

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

Swami Dayananda
Integral Yoga Instructor and Trainer
Satchidananda Ashram – Yogaville, Inc.
108 Yogaville Way, Buckingham, VA, 23921

Dear Secretary Bose,

CO92-1 I am concerned about the potential air pollution from the proposed 54,000 hp ACP Compressor Station (CS) in Buckingham, VA, that would be 5.5 miles from Yogaville, where I serve as a Hatha Yoga and Meditation teacher.

Clean air is the right of all citizens. At Yogaville, clean air is especially valued as we practice Pranayama, yogic breathing techniques, as a part of our Hatha Yoga discipline. Breathing practices conserve energy, help to calm the mind, relax and revitalize our entire system and are done three times every day during our meditation sessions at Yogaville.

My research shows that the proposed CS has the potential to directly impact the health and yogic practices of Yogaville's residents, staff and guests. I would like to request that either FERC or Dominion conduct air dispersion modeling report.

The dispersion modeling is a way of predicting how the pollution spreads out from a source and will show the predicted concentration of pollution and the potential Significant Impact Area. Such study is needed for Yogaville and the surrounding communities, as according to Dr. Curtis Nordgaard, other physicians and scientists, the tons per year listed in the air permit does not really tell us about possible health impacts accurately.

I base my request on two reports by energy companies (Spectra and Kinder Morgan) both of which concluded that the Significant Impact Area was 6.2 and 6.4 miles in their particular studies on 7,700 hp and 41,000 hp CS respectively. (Documentation attached/linked) Additionally, CS with larger hp would have a significantly increased impact on formaldehyde concentrations, per Dr. Nordgaard. (Documentation attached/linked)

CO92-1 Section 4.11.1.3 provides the results of air quality modeling for ACP and SHP, in screening mode, and demonstrates that the compressor stations would not result in a violation of the NAAQS. Atlantic and DETI have met all modeling requirements for their respective projects.

CO92-1 (cont'd)

These reports by the energy industries themselves indicate the need for an air dispersion modeling report for Yogaville area.

Thank you for your consideration on this matter.

Respectfully submitted,

Swami Dayananda

Links/Attachments

1. Spectra Energy Atlantic Bridge Project
   Resource Report 9, Air and Noise Quality, Oct. 2015
   Please see pages 3-8 and 3-9 of Dispersion Modeling Report.
   Source:

https://drive.google.com/open?id=0ByMONoeZSvWSYXk5UjlUZkVCckU

2. Kinder Morgan Tennessee Gas Pipeline NED Project
   Environmental Report Resource Report 9,
   Air and Noise Quality, Nov. 2015
   Source:

https://drive.google.com/open?id=0ByMONoeZSvWSTWNYekdSZ2NCMm8

3. Algonquin Gas Transmission, March 30 2017
   Proposed Plan Approval
   Source:

http://www.mass.gov/eea/agencies/massdep/air/approvals/algonquin.html

COMPANIES/ORGANIZATIONS COMMENTS

CO93 – Nelson County Creekside LLC

JACKSON IPG Jackson Intellectual Property Group PLLC
106 Starvale Lane | Shipman, VA 22971 | 434.962.7544 | mail@jacksonipg.com

Demian K. Jackson

April 6, 2017

Mr. Nathaniel J. Davis, Sr Deputy Secretary Federal
Energy Regulatory Commission
888 First Street NE, Room 1A Washington,
DC 20426

Re: Docket #CP15-554-000 & CP15-554-001
Proposed Atlantic Coast Pipeline

Dear Mr. Davis,

I am writing to you with comments on the Draft Environmental Impact Statement (DEIS) as a landowner affected by the Atlantic Coast Pipeline, LLC and Dominion Transmission, Inc. project to construct the ACP within a thousand feet of our home and place of business at 106 Starvale Lane, Shipman, VA 22971.

CO93-1 We believe FERC should reject the DEIS released Dec. 30, 2016 as it is incomplete. The DEIS it is cursory in nature with regard to the analysis of potential impacts on the natural and human environment during the construction and subsequent operating of the ACP. Further, the DEIS fails to describe or evaluate reasonable alternatives to the ACP that would avoid or minimize adverse impacts on the environment. It also does not sufficiently detail specific mitigation measures to avoid or further reduce/minimize environmental impacts.

The National Environmental Policy Act requires FERC to consider environmental impacts from the construction and operation of the pipeline to the fullest extent possible. The threat posed to the endangered species have not been fully considered and balanced. In addition, the karst geology of the Blue Ridge mountains of Nelson County is well documented as unstable, most notably during hurricane Camille in 1969 when vast tracts of soil washed away roads, bridges and houses, causing catastrophic human losses and devastation. The ACP is presently routed across our property up and down a number of steep slopes and ridges, many of which show scars from hurricane Camille including unstable soils. The ACP is also presently routed about 625 feet from our well and crosses a number of streams and springs on my property which feed into the Chesapeake Bay watershed. No construction techniques exist that would fail to upset the delicate geologic and ecological balances in these ancient mountains, including on our property. The hydraulic testing of the pipe, requiring enormous quantities of water to be flushed into the ground would introduce chemicals into the underground aquifers which Nelson county's numerous wineries, breweries, and distilleries draw from, putting the county's tourism industry at grave risk, as well as the well water we drink from. Tourism

CO93-1 See the response to comment CO6-1.

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Demian K. Jackson

CO93-1 (cont'd) here is driven largely by the unspoiled views of the mountains, which will be forever scarred by clear-cut swaths through the mountains and landscape. Further, these clear-cut swaths are routed through archaeological sites and our within the viewshed of a historic family cemetery.

CO93-2 Dominion touts that it has already rerouted their proposed route over 300 times. No reroutes are possible to make their proposed pipeline safe, and not permanently, severely and negatively impact the environment, people and lifestyle of Nelson county. Further, I know from personal experience that 5 of the route changes in my neighborhood were a result of poor preliminary planning (i.e., multiple houses "discovered" after the fact, etc.), as well as routes that were purposely chosen to be as poorly routed as possible through landowners properties in order to gain bargaining leverage and earn points with FERC for "working with landowners" by making route adjustments from routes that were chosen to be as damaging as possible, to slightly less terrible.

CO93-3 This pipeline is also clearly not needed. Numerous pipelines already bisect our state and have been calculated as sufficient to carry gas from the Marcellus shale fields in WV, according to a Synapse study. The Department of Energy has already approved for the reverse flow of the existing Transco pipeline which would negate the need for a new pipeline and would save ratepayers from the responsibility of bankrolling this pipeline. The only true need for this pipeline is the need of the Dominion shareholders to receive the guaranteed infrastructure profits for the pipeline construction installation on top of the profits from selling the gas itself, while doing so on the backs of affected landowners, most of which are not fully compensated.

As outlined in greater detail in my pleading (along with other affected landowners), this pipeline also clearly fails to meet the standard of 'public good' required to exercise such a high level of eminent domain over so great a length. The majority of Dominion showing of public good is that they have buyers for the gas, but it is a complete abuse of the government's eminent domain power to take the land from citizens by force of law because Dominion has shown that they can make a profit. The ability of a private corporation to make a guaranteed profit is not a showing of 'public good'. FERC needs to require more evidence from Dominion clearly showing that the ACP is in the public good.

CO93-4 Finally, as a landowner I was also disappointed to read that "ACP and SHP would not result in decreased property values," with no quantitative research to back this statement. Where is the supporting data for this conclusion? The statement relies simply on "literature reviews and discussions with real estate appraisers." I have spoken to a number of real estate experts in my area and they have indicated that the real estate market for land is largely frozen at the moment and that is very difficult (and sometimes nearly impossible with large tracts of land) to sell a property affected by the ACP without taking a significant loss. It clearly flies in the face of reason to conclude that a massive, permanent clear-cut in conjunction with very real explosion risks, fails to decrease property values in any way, particularly in an area known for its peacefulness, natural beauty, and views. It is also highly suspicious that no evidence has been provided to the public.

CO93-5 I understand the difficulties involved in alternative routings for utility corridors. I hope that the Federal Energy Regulatory Commission will minimize the number of affected private property landowners by

CO93-2 Comment noted.

CO93-3 See the response to comment CO46-1.

CO93-4 Comment noted.

CO93-5 Comment noted.

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Demian K. Jackson

CO93-5 (cont'd) ensuring that Dominion is using rights of way and easements already in existence for power and telephone lines in those areas where development has already occurred, while minimizing the impact on endangered species.

I would ask that the Commission take the above comments and objections into consideration when considering the DEIS for the Atlantic Coast Pipeline routing. Thank you for your attention to this matter.

Sincerely,

Demian K. Jackson (member and manager of Nelson County Creekside LLC)

Bridget K. Hamre (member of Nelson County Creekside LLC)

COMPANIES/ORGANIZATIONS COMMENTS

CO94 – Potomac Appalachian Trail Club

POTOMAC APPALACHIAN TRAIL CLUB

www.patc.net

April 3, 2017

ORIGINAL

The Honorable Nathaniel J. Davis, Sr.
Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: FERC Docket #CP15-554

Dear Deputy Secretary Davis:

I am writing on behalf of the Potomac Appalachian Trail Club, Inc. to provide comments on the Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline (ACP).

The Potomac Appalachian Trail Club (PATC) is a 501(c)(3) non-profit formed in 1927 to build and maintain the Appalachian National Scenic Trail (ANST) in southern Pennsylvania, Maryland, West Virginia, and Virginia. PATC is one of 31 clubs that preserve the ANST and its side-trails in cooperation with the Appalachian Trail Conservancy and the Appalachian Trail Park of the National Park System.

We are very active in our traditional role as public hiking trail builders and maintainers, but our mandate goes much further than that. We also work to protect and manage those trails and the trail lands around them.

The proposed ACP across 21 miles of George Washington National Forest (GWNF) and Monongahela National Forest (MNF) lands will require the U.S. Forest Service to issue a Special Use Permit and amend both national forest management plans to 1) create a permanent new utility corridor through core forested areas, headwater streams and recreational areas and 2) relax established standards that protect soil, water, old growth, and recreational resources.

We have not seen a project of this magnitude though the extremely rugged mountainous terrain of our mid-Atlantic national forests before. Rather than follow existing utility corridors, Dominion is asking for a new utility corridor through 21 miles of core forests, across popular recreation areas and trails, degrading some of Virginia's most outstanding scenic beauty and rich biodiversity in the GWNF and MNF. Dominion's preferred route passes through some of the most intact, undisturbed forests on public land in the East. While PATC is very skeptical about the need for this pipeline, we are deeply concerned about its impacts, especially on the Appalachian Trail and the George Washington National Forest.

NEPA requires that actions on public lands undergo stringent evaluation with the opportunity for public scrutiny and input. Our analysis of the DEIS reveals missing information, inconsistencies, and conclusions

118 Park Street, SE • Vienna, VA 22180 • Phone (703) 242-0693 • Fax (703) 242-0968

CO94-1 that are not well supported. We have concluded that the DEIS is insufficient for the USFS to make a decision on whether to grant a special use permit and waive standards in the GWNF and MNF Land and Resources Management Plans. Our conclusion is based on the following deficiencies in the DEIS:

CO94-2 **Appalachian National Scenic Trail:** Dominion has proposed to tunnel under the AT using Horizontal Directional Drilling; yet, the DEIS does not provide a detailed plan for how this can be done successfully. Though the HDD would be 800 feet below the ridgetop, the pipeline and the staging areas on both sides would be clearly visible from multiple points on the AT and Blue Ridge Parkway. Our members who frequently hike the AT in Augusta and Nelson Counties have observed the pipeline route from Three Ridges Overlook, Cedar Cliffs, Raven's Roost, Humpback Rocks, and other points along the AT between Bee Mountain and Humpback Rocks. The ACP would degrade the AT and the surrounding natural beauty that both day hikers and through hikers are seeking and replace it with a linear permanently maintained corridor that would be an eyesore for generations to come. Please note that Reids Gap, Dripping Rock, and Humpback Rocks are all heavily used by hikers. The DEIS has not adequately analyzed visual impacts to popular trailheads and trails in this area. We would like to see an alterative that follows an existing utility corridor across the AT. This seems like a reasonable option to avoid severe visual impacts on such a scenic and popular portion of the AT by a new route.

CO94-3 **Sherando Lake Recreation Area:** The ACP would cause both temporary and permanent impacts to this popular recreation area in the GWNF. Sherando is the most popular recreation area in the GWNF. The pipeline route follows Mt. Torry Road right across from the Sherando entrance station, permanently degrading the scenic entrance. The pipeline and western staging area would be clearly visible from Torry Ridge Trail, which offers the most scenic views of the whole Sherando area, and also from other trails on Big Levels, such as Kennedy Ridge Trail.

CO94-4 **Proposed Shenandoah Mountain National Scenic Area:** PATC endorsed the proposed SMNSA in 2009 and strongly supports Congressional designation for this special area. As far back as the 1920s, PATC hauled busloads of hikers from the D.C. area to Shenandoah Mountain and Ramseys Draft to enjoy the wild beauty and outstanding hiking opportunities of the area. Currently, members of our Southern Shenandoah Valley Chapter lead hikes in the Braley Pond – Hankey Mountain area and maintain trails in Ramseys Draft Wilderness, including Bald Ridge Trail. The ACP would be clearly visible from all the best overlooks on Bald Ridge and from the Wild Oak National Recreation Trail on Hankey Mountain. The ACP route would follow along and then cross Dowell's Draft Trail and White Oak Draft Trail. We concur with comments submitted by Friends of Shenandoah Mountain on March 24, 2017, regarding scenic impacts, forest and stream impacts, and recreation impacts on the proposed SMNSA. We also share their concern that the pipeline could mar the proposal and threaten its viability to be designated by Congress.

Scenic Impacts on Other Trails: The pipeline corridor would also be visible from popular trails on Crawford Mountain, Elliott Knob, and Southern Shenandoah Mountain. Visual impacts from these key observation points are not addressed or are dismissed as insignificant.

Great Eastern Trail: The ACP route crosses the Great Eastern Trail, America's newest long distance trail, where it is co-located with Shenandoah Mountain Trail, and again on Tower Hill Mountain; yet, the DEIS offers no analysis of impacts.

CO94-5 **Forest Fragmentation:** Intact forests are highly valued by hikers. The ACP route bisects 105 separate core forest areas in West Virginia and Virginia where biodiversity is the highest and harm to the interior forest from fragmentation would be the greatest. From the terminus in Harrison County, W.V. to Buckingham County, Va., 14,786 acres of core forest would be lost to fragmentation caused by the pipeline corridor, access roads, and edge effect along both. The DEIS concedes that forest fragmentation will be permanent and that it cannot be mitigated, but does not see this as a significant issue.

CO94-1 See the responses to comments CO5-1 and LO49-3.

CO94-2 Comment noted. Sections 4.8.8 and 4.8.9.1 discuss impacts on visual resources as a result of construction and operation of the project.

CO94-3 FS response: Section 4.8.9.1 has been updated to address scenic impacts on these areas.

CO94-4 Sections 4.8.8 and 4.8.9.1 discuss impacts on visual resources as a result of construction and operation of the project. The Visual Impact Assessment and identification of key observation points were developed in coordination with the MNF, GWNF, ATC, and NPS. The Great Eastern Trail is a proposed feature.

CO94-5 Comment noted. See updated interior forest fragmentation analysis in section 4.5.6.

CO94-6 **Biodiversity:** PATC members and the general public hike to enjoy natural beauty, solitude, clean water, healthy forests, and a wide variety of plants and animals. Virginia stands high among other states for biodiversity, making it an especially appealing place to hike. According to the Virginia Natural Heritage Program (VNHP), as of 2004, 2,546 species of vascular plants and 737 species of vertebrates had been identified as native to the state. Invertebrates are estimated to be at least 30,000 (aquatic and terrestrial). Western Virginia has been identified by The Nature Conservancy as a "Biodiversity Hotspot". Many of the Biological surveys for rare species have not yet been done; therefore, the DEIS is lacking critical information.

CO94-7 **Is It Needed?** A major weakness of the DEIS is that it so readily accepts the necessity of the project, even though this has been challenged by an independent study by Synapse Energy, *Are the Atlantic Coast Pipeline and the Mountain Valley Pipeline Necessary?* (Sept. 2016), that concludes that both the ACP and MVP are unnecessary and that existing pipelines, with modifications, can meet future demand through 2030.

CO94-8 **Cumulative Impact of Multiple Pipelines.** With multiple pipelines across the AT and Blue Ridge Parkway being proposed and on the horizon, it seems reasonable to consider cumulative impacts of all these pipelines, but the DEIS does not do this. FERC is the only agency that could examine cumulative impacts.

CO94-9 **Lack of Alternatives:** Another weakness is that the DEIS does not give serious consideration to an alternative that avoids the national forests or that co-locates this new utility with existing utility corridors. The DEIS conclusion that a 21-mile route through both forests is an acceptable option is not well supported. These two national forests are strongholds for biodiversity, native brook trout, clean water, recreational resources, and scenic beauty. The DEIS gives too much credence to mitigation and dismisses cumulative impacts related to these important values that our national forests provide.

In addition to the points we have made, we are in full agreement with comments submitted by the Appalachian Trail Conservancy on the DEIS, and we support all the desired actions they recommend, particularly:

- We request that all alternatives be considered based on their relative environmental impact irrespective of land ownership (NPS or USFS). While a final decision may take into consideration issues of land ownership, it is important to evaluate and explore all alternatives so an informed decision can be made.
- FERC and the applicant should work to correct the record in that Congressional approval is not the only mechanism to cross land owned by the National Park Service. Land exchanges have taken place and may be a viable alternative given an adequate alternatives analysis.
- The ATC asks FERC to verify through an independent third party, the viability of all proposed crossing methods of the ANST.
- The ATC requests the release all geologic studies relative to evaluation of the primary and contingency actions to allow for independent review.
- The ATC asks FERC to develop a mechanism that would ensure the construction of the ANST and BLRI crossing occurs first and before any other project construction, the purpose of which would be to ensure:
  - All funds are allocated to a viable project
  - No unfavorable means of crossing the ANST will be required as a last resort to save the project.
- Analysis of alternatives that do not require an amendment to the A.T. prescription area should be reconsidered and re-evaluated given the significant impact to the National Trails System.
- Additional visual impact analysis filed after the DEIS reveal that the proposed action would result in significant impairments to the Appalachian National Scenic Trail. Less impactful alternatives must be re-evaluated given the potential impact represented in the analysis.

CO94-6 Comment noted. Section 4.7.1 recommends that construction of the projects be conditioned upon the completion of all outstanding biological surveys and any necessary consultations with federal and state agencies.

CO94-7 See the response to comment CO46-1.

CO94-8 See the response to comment FA6-17.

CO94-9 Comment noted.

CO94-5 (cont'd)

- Given that the ACP and MVP projects are of similar magnitude, timeframe, impact the same AT Prescription area standards and impact a segment of National Scenic Trail commonly experienced within a single visit to the resource, FERC must require the applicant and the USFS to conduct a thorough cumulative impact analysis relative to the ANST that considers both the proposed Mountain Valley and Atlantic Coast Pipeline projects.

In conclusion, the DEIS does not provide sufficient information for an informed decision about the ACP. In our view FERC or the Forest Service should issue a Supplemental DEIS that fully addresses our concerns about the impacts to the Appalachian National Scenic Trail and our national forests. Thank you for the opportunity to comment.

Respectfully,

Don White
President
The Potomac Appalachian Trail Club, Inc.

Cc:

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Superintendent, Appalachian National Scenic Trail Park, National Park Service

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COMPANIES/ORGANIZATIONS COMMENTS

CO95 – Clean Water for North Carolina

Comments from Clean Water for North Carolina, on Draft Environmental Impacts Statement for Atlantic Coast Pipeline, CP15-554-000

Submitted by Hope Taylor, Executive Director, hope@cwfnc.org, 3326 Guess Rd. Suite 105, Durham, NC 27705, (919) 401-9600

Clean Water for North Carolina, a 501 c 3 statewide, science based Environmental Justice organization, with members in over 60 NC counties, submits the following comments on the Draft Environmental Impact Statement for the Atlantic Coast Pipeline, focusing on the impacts on North Carolina's environment, economy, safety and cultural resources.

Public Involvement, "Need" for Atlantic Coast Pipeline, Alternatives Analyzed

CO95-1 We disagree strongly with statements that public involvement in the period before the DEIS was strong. Both Dominion and FERC hearings on this docket were poor noticed, with some residents located in the proposed corridor only having gotten notification the day before, and our informal outreach to over 250 residents in 5 NC counties within ½ mile of the corridor showing that a strong majority had no awareness of the pipeline at all. 300 comments is not a strong showing, given the enormous scope of this project and the applicants and FERC should not be congratulating themselves. The most focused outreach of Dominion was to local public officials well BEFORE there was public awareness of the project, and materials and presentation were heavily weighted toward an unrealistically positive portrayal of economic and environmental impacts.

CO95-2 Several studies issued in the past year have provided substantial evidence that the Atlantic Coast Pipeline is not only unnecessary for near term and future economic development. In particular, the study linked here http://ieefa.org/wp-content/uploads/2016/05/Risks-Associated-With-Natural-Gas-Pipeline-Expansion-in-Appalachia- April-2016.2.pdf points to economic, social, climate and environmental damage that will be driven by the continued overbuilding of gas pipelines in the southeastern region of the US. Further, it documents the expectation that ACP will recover almost all costs plus ROE from ratepayers, who will be paying on the debt for decades to come. Contrary to Dominion's statements that the project will ensure lower cost energy supply, the ACP will necessarily raise rates, both for the cost recovery for building the project from ratepayers, but also from the completely untenable assumption that natural gas will remain a plentiful and low cost fuel for electric generation. In fact, despite optimistic projections, gas industry analysts confirm that gas production has been decreasing and that prices are predicted to rise. The net result is that the public and ratepayers will be trapped paying off a project that does not serve the public interest and may never have the markets or supply that Dominion predicts.

CO95-1 We disagree. As discussed in section 1.3, the public input process for ACP and SHP has been thorough and extensive. We acknowledge that not all commentors could be heard at certain scoping meetings due to the number of attendees and scheduled end times of the venues. However, FERC considers and weighs all comments equally regardless of which the format they are presented (orally, electronically, etc.). Additionally, FERC's revised meeting format was developed primarily to ensure more people would have the opportunity to provide comments without some of the time constraints associated with the former meeting format.

Atlantic and DETI are required to provide FERC with a list of all affected landowners as defined in 18 CFR 157.6(d)(2), and the list of affected landowners was part of our environmental mailing list who received the draft EIS. Anyone who wishes can request to be added to the FERC mailing list by submitting a comment on the docket or contacting FERC directly.

CO95-2 See the response to comment CO46-1.

CO95-3 FERC has no statutory mandate to only evaluate alternatives that specifically meet the economic investment interests and purposes of the applicant. As noted by former FERC Chairman Norman Bey, the Commission must take a broader look at both the need for a given project, its upstream cumulative impacts and less damaging and costly alternatives that are not designed solely to meet the economic goals of the applicant.

Groundwater Resources

Assessment of Groundwater Resources and Proposed Procedures Severely Inadequate to Protect Groundwater and the Safety of Well Users Close to the ACP Corridor in North Carolina

We disagree strongly with FERC's conclusion on page 4-86 that "No long term impacts on groundwater are anticipated from construction or operation of ACP," and believe that the methods proposed are designed to prevent detection of such long term impacts.

CO95-4 For most of its length in NC, the ACP would be located above the Northern Coastal Plain Aquifer system, especially vulnerable to contamination, with the uppermost sand aquifers at shallow depths being particularly vulnerable to contamination or disruption due to human. Given the large number of households in or within ½ mile of the proposed corridor dependent on well water, even with special precautions, construction could adversely impact water supplies.

The DEIS acknowledges that there are a large number of private wells within 150 ft. of the pipeline workspace in Nash, Johnston and Cumberland Counties (DEIS pages 4-70-471), and that ACP and its contractors have not completed a survey of wells within 150 ft. due to lack of survey access. We are aware that some landowners object to being surveyed for this project, and we contend that a 150 ft. buffer between water supply wells and the construction workspace is inadequate. Approximate locations for wells within 500 feet of construction workplace could be readily facilitated by GIS location of all residences outside city limits or service areas of public water utilities.

The DEIS states that surface disturbances, clearing and trenching can impact both surface water drainage and groundwater recharge patterns, with the most impact to shallow surficial aquifers. The DEIS authors contend that most construction will be 10 feet or less below the surface, and that the surface will be restored to its original contours, but no protocols are in place to prevent impacts including compaction that could affect recharge of shallow aquifers or infiltration of toxic or hazardous materials. The potential for toxic and hazardous materials to be released in and near the construction workspace is acknowledged, including: fuels, oils, lubricants, hydraulic fluids, and explosives for blasting.

According to the DEIS, page "Prior to construction and pending landowner authorizations, Atlantic and DTI would test water supply wells and springs within 150 feet of the construction workspace (within 500 feet of the construction workspace in karst terrain). In addition to well

CO95-3 Comment noted.

CO95-4 Comment noted.

CO95-4 (cont'd)

yields, water quality parameters that would be tested include pH, total suspended solids, total dissolved solids, conductivity, alkalinity, acidity, sulfates, oil/grease, phenolic, iron, manganese, aluminum, copper, lead, nickel, silver, thallium, zinc, chromium, arsenic, mercury, selenium, cyanide, calcium magnesium, hardness, chlorides, antimony, cadmium, beryllium, and fecal coliform. Sampling methods would comply with approved EPA and state/commonwealth sampling." The well testing must include all water supply wells within 500 feet of the construction workspace and include ALL substances which could impact groundwater, including components of natural gas liquids. Well owners must receive a copy of all testing results, pre- and post construction, and the opportunity to do independent testing by certified laboratories.

Assuring methods protective of well users in or near the workspace cannot be achieved with a mere "recommendation" (DEIS, page 4-74) that AP and its contractors complete a well survey before construction begins. They must prepare a list of all possible wells on land parcels with potentially occupied buildings requiring a water source within 500 feet of the construction workspace, and all methods must be assured to protect well water sources for all such locations.

On page 4-82, the DEIS states that "Atlantic and DTI would conduct post-construction water quality tests to ensure water supply wells and springs are not adversely affected by construction activities. If damage claims occur, Atlantic and DTI have committed to providing a temporary potable water source, and/or a new water treatment system or well." There is no requirement that the well water testing results would be reported to the well owner promptly, or that additional substances possibly present near contaminated sites, used in construction activities, or resulting from acknowledged potential leakage of natural gas liquids would be included in testing. Possible contaminated sites that could be disturbed during construction include a Superfund site and 3 brownfield sites located in NC close to the AP-2 section of the pipeline, as well as 9 leaking underground storage tank sites near AP 2 in NC.

There is no information for landowners about the procedure initiate a claim if there is evidence of well water quality or quantity impacts. Moreover, a single post-construction well water test is inadequate to assure that there are no long term impacts of construction or operation. Well testing must include fuels, lubricants, hydraulic fluids and any explosives use, as well as the components of natural gas liquids and well flow rate. The DEIS acknowledges that natural gas liquids represent the greatest ongoing threat to groundwater during ACP operation. Well testing for all of the standard parameters, plus any hazardous or toxic materials used during construction, as well as natural gas liquids, must continue annually during the operational life of the pipeline.

All well tests must be by labs certified for analysis of all of the specified contaminants and to detection levels below any NC groundwater (2L) or IMAC standards. All results must be reported to well owners with a comparison to those standards within 20 days of testing. ACP must state the procedure for a well owner to make a claim of diminished flow rate or contamination their well for drinking water, and act within 15 days of a substantiated claim to

CO95-4 (cont'd) provide bottled water and within 60 days to provide a permanent replacement safe water supply.

Page 4-84 of the DEIS notes that, "Atlantic and DTI have prepared a SPCC Plan to avoid or minimize impacts of hazardous material releases during construction and operation of ACP and SHP. The SPCC Plan prescribes preventive measures such as regular inspection of storage areas for leaks, replacement of deteriorating containers, and construction of secondary containment systems around hazardous liquids storage facilities. Moreover, the SPCC Plan provides explicit guidance on handling hazardous materials during construction. Specifically, it would restrict refueling or other liquid transfer areas within 100 feet of wetlands, waterbodies, and springs, and within 300 feet of karst; prohibit refueling within 200 feet of private water supply wells and within 400 feet of municipal water supply wells; and require additional precautions (e.g., secondary containment) when specified setbacks cannot be maintained."

The above protections are inadequate to assure that water supply wells will be protected, particularly in this area with vulnerable surficial aquifers. All pollution prevention plans prepared by ACP to avoid or minimize impacts during construction and operation must be readily available to the public in plain language. The training of employees, inspectors and enforcement of construction violations at all stages must be transparent. Refueling or other handling of fuels and other toxic or hazardous materials must be prevented within 500 feet of wetlands, private water supplies or municipal water supply wells. 100 to 400 feet, for various setbacks as stated in the DEIS, provides an inadequate margin of protection.

CO95-5 The DEIS states in other sections that, in addition to ACP hired Environmental Inspectors, there would be third party inspectors accountable only to FERC to review compliance and prevent accidents or failures. Those independent inspectors must report directly to the agency and inspection results must be available to the public. The EIs, who have the authority to stop work if violations have been detected during inspections, must have specified protections from pressure and adverse consequences from ACP or its construction contractors.

The DEIS says that a variance procedure is in place for requests to allow activities closer than specified setbacks. As is frequently the case, this mechanism can be dangerous and allow for reduced oversight and riskier activities with little documentation or recourse if contamination occurs. No variances must be permitted for reducing setbacks of at least 500 feet from areas where any hazardous or toxic materials will be handled.

CO95-6 "Although the natural gas received by ACP and SHP would be processed to remove natural gas liquids (NGL), small amounts of residual NGLs may still be present in the gas. Standard operating procedures minimize the risk of release of residual NGLs that may accumulate in the pipeline." Natural gas liquids could be a substantial threat to groundwater quality, as the DEIS notes, and must therefore be included in annual well water testing throughout the operational life of the pipeline.

Z-2187

CO95-5 As discussed in section 2.5, third-party compliance monitors would work solely under the direction of the FERC and would be onsite daily during construction documenting Atlantic's and DETI's construction and restoration through about the time the pipeline would be placed into service. FERC staff would also periodically inspect the project area during construction and restoration to ensure restoration occurs and, if any issues arise, that they are addressed. The third-party monitors would also consult with FERC staff as needed during construction and restoration.

Section 2.5.5 discusses the variance process during construction, including the approval process that would be required for changes in workspace location and construction methods.

CO95-6 Comment noted.

Again, we strongly disagree that no long term impacts to groundwater can be anticipated. The lack of key information for this assessment and failure to include protocols to ensure that no impact will occur or will be quickly detected are failures to meet NEPA requirements.

Land Impacts, Land Use Concerns

The amount of information of many types missing from the DEIS, including soil surveys and detailed practices and mitigation measures that would be needed to assess the project's impacts on land and soils, as well as cumulative impacts in this DEIS is substantial. We therefore contend that the ACP DEIS does not provide sufficient information to justify the stated conclusion that

> "given the proposed projects' mitigation measures, cumulative impacts on land use, recreation,special interest areas, and visual resources would mostly be limited to the construction phase (except as noted above) and would be temporary and minor, we conclude that cumulative impacts on these resources would not be significant"

is therefore not in compliance with the NEPA.

CO95-7 The DEIS acknowledges that ACP construction will impact at least 2258.0 acres in NC, of which 1125.5 will be used for permanent corridor. Other land used by the project in NC will include 460 additional acres of temporary workspace, 45 acres for compressor station 3 in Northampton County and 14.8 acres for metering stations, in addition to dozens of acres for new access roads and contractor yards. This large area of land required for the project would reduce or modify future use of a significant amount of land in areas already disproportionately impacted by low levels of economic development.

CO95-8 Despite the DEIS conclusion that regional economic benefits will outweigh the lack of local economic benefits—a fact that we challenge in our analysis of gas supply need and impact of the project on energy cost—we contend that, after a short pulse of economic activity associated with construction, the net effect of the pipeline will be reduced flexibility for income generating landowner uses, reduced land values, reduced overall local real estate tax revenues and increased local government costs for services including emergency response services. (Cite Key Log?) As only a very few industries would be large enough to pay for a tap fee and pipeline extensions to access the gas supply, there is no realistic projection of indirect permanent jobs after pipeline construction except close to the largest cities.

CO95-9 FERC calls for reduction of the width for which eminent domain could be used on non-NC section of the ACP to 50 feet, saying that is "sufficient to efficiently and safely operate large diameter natural gas pipelines". We disagree that simply reducing the width for which eminent domain would be available will assure safe land use outside the 50 foot corridor, and question why eminent domain should be granted for any section of the ACP if sufficient compensation isn't offered to landowners for loss of land use, inconvenience and other factors.

CO95-7 See the response to comment CO68-12.

CO95-8 Comment noted.

CO95-9 See the response to comment CO50-2.

CO95-10 Atlantic and its contractors are required to use PHMSA (DOT) minimum safety standards for construction and 18 CFR 380.15 (Siting and Maintenance Requirements) and other applicable federal and state/commonwealth regulations, including the requirements of the U.S. Department of Labor, Occupational Safety and Health Administration. These minimum requirements are intended to protect the construction work force, but the rise in pipeline incidents along pipelines built since 2010 documents the inadequacy of these standards for recently built pipelines in operation. This clearly increases the liability and safety risk for landowners in or near the pipeline corridor and furtherreduces the range of safe uses of land and intrinsic land values, whether or not a pipeline incident occurs.

CO95-11 **Impacts of Erosion and Sedimentation:**

According to the DEIS, "Temporary erosion controls would be installed along the construction right-of-way immediately after initial disturbance of the soil and would be maintained throughout construction. Temporary erosion control measures would remain in place until permanent erosion controls are installed or restoration is completed. Atlantic and DTI have committed to employing Environmental Inspectors (EI) during construction to help determine the need for erosion controls and ensure that they are properly installed and maintained." The Best Management Practices called for as a key element of erosion and sedimentation prevention cannot be assumed to be adequate to prevent erosion from the construction site, or sedimentation of downstream waters under conditions of heavy precipitation.

The DEIS Fails to Adequately Assess the Impacts of Erosion, Sedimentation, and Turbidity on Aquatic Life

Construction of the proposed project in NC would disturb over 930 acres of wind-erodable soils, 39 of water erodible soils, over 900 acres of hydric soils as well as 1, 740 acres of prime farmland. The ACP would clear a 150 foot wide corridor along the length of the pipeline route during construction with a few exceptions in wetlands, which would "remove[] the protective cover and expose[] the soil to the effects of wind and rain, which increases the potential for soil erosion and sedimentation." Additionally, the project would convert a significant amount of forested land to herbaceous cover in the 75-foot wide permanent right-of-way, including some highly erodible soils.

FERC acknowledges that "[i]mpacts on waterbodies could occur as a result of construction activities in stream channels and on adjacent banks."

Those impacts include "local modifications of aquatic habitat involving sedimentation, increased turbidity, and decreased dissolved oxygen concentrations."

Additionally, FERC states that the

> clearing and grading of stream banks could expose soil to erosional forces and would reduce riparian vegetation along the cleared section of the waterbody. The use of heavy equipment for construction could cause compaction of near-

Z-2189

CO95-10 The DOT is mandated to provide pipeline safety under 49 U.S.C. 601. The DOT's PHMSA administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. PHMSA develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety.

See also the response to comment CO67-15.

CO95-11 Comment noted.

surface soils, an effect that could result in increased runoff into surface waters in the immediate vicinity of the proposed construction right-of-way. Increased surface runoff could transport sediment into surface waters, resulting in increased turbidity levels and increased sedimentation rates in the receiving waterbody. Disturbances to stream channels and stream banks could also increase the likelihood of scour after construction.

Those impacts would harm the aquatic organisms that rely on the affected streams for their survival. As FERC states,

> [i]ncreased sedimentation and turbidity resulting from in-stream and adjacent construction activities would displace and impact fisheries and aquatic resources. Sedimentation could smother fish eggs and other benthic biota and alter stream bottom characteristics, such as converting sand, gravel, or rock substrate to silt or mud. These habitat alterations could reduce juvenile fish survival, spawning habitat, and benthic community diversity and health. Increased turbidity could also temporarily reduce dissolved oxygen levels in the water column and reduce respiratory functions in stream biota.

Despite generally acknowledging these impacts, FERC nonetheless concludes that "[n]o long-term or significant impacts on surface waters are anticipated as a result of the projects" and that "[t]emporary impacts would be avoided or minimized" primarily because the applicants will use dry open-cut crossing methods at most major crossings and will adhere to Best Management Practices when performing clearing and grading in riparian areas. Following from that conclusion, FERC finds that "constructing and operating the ACP would not significantly impact fisheries and aquatic resources."

CO95-12

The DEIS's conclusion that the projects would not have significant adverse impacts on fisheries and aquatic resources is flawed for several reasons. First, FERC lacks adequate information to determine the impacts that would be associated with the use of wet open-cut crossing methods at three of the major rivers that would be crossed by the ACP. Without that information, FERC cannot reasonably conclude that the project would not significantly impact the aquatic ecosystems in those waterbodies.

Second, FERC unjustifiably relies on the use of Best Management Practices to conclude that clearing and trenching within the relevant watersheds during pipeline construction will not significantly contribute to sedimentation and related impacts of turbidity. FERC provides no evidence to justify its conclusion that BMP measures would successfully minimize sedimentation impacts, and past experience with similar projects in erodible soils such as those traverse by the ACP demonstrates that they would be inadequate. Finally, FERC fails to account for the increased sedimentation that would result from the conversion of mature forest to herbaceous cover within the 75-foot wide permanent right-of-way along much of the pipeline route. As FERC's failure to analyze those impacts renders its conclusion that the projects would

Z-2190

CO95-12 Refer to section 4.6.4 for a discussion of the impacts and mitigation associated with construction of ACP and SHP on aquatic resources, including a discussion of the impacts associated with the wet open-cut crossing method. Note that Atlantic would not maintain 75-foot-wide right-of-way; rather it would maintain a 50-foot-wide permanent right-of-way, of which only a 10-foot strip centered over the pipeline would be maintained in an herbaceous state, and trees greater than 15 feet tall within 15 feet of the pipeline would be removed.

CO95-12 (cont'd) not significantly impact aquatic resources unsupportable. Because of those shortcomings, FERC's DEIS does not comply with NEPA.

Inadequate and Biased Assessment of Socioeconomic Impacts of the ACP Don't Meet Requirements of NEPA and Title VI Review

CO95-13 The introduction to Socioeconomic Impact section of the DEIS on page 4-383 indicates a substantial bias in in its analysis of "potential" socioeconomic impacts of the ACP by listing most impacts in the direction most favorable for pipeline development. "Increased property tax revenue, increased job opportunities, and increased income associated with local construction employment are potential effects of the projects… increased employment opportunities, increased demand for housing and public services, tourism and transportation impacts, and an increase in government revenue associated with sales and payroll taxes." Only "increased traffic or disruption of normal traffic patterns" are named as potential adverse impacts.

The DEIS concludes that there is adequate rental housing and public services (hospitals, law enforcement, fire depts. and schools) in NC counties along ACP to handle the influx of temporary workers from outside (about half of the total construction workforce for each spread) from late 2017 to 2019. This analysis assumes that workers from outside the area will not bring their families, and fails to account for any economic or social disruptions due to the temporary influx, including overbuilding of hotel units or other housing not needed after a few months (Such dislocation has been reported in other areas where oil and gas development increased quickly and crashed. It is unclear if local economies and governments would be fully aware of the very temporary nature of the construction, followed by fewer than 20 jobs in 2 North Carolina counties.) The DEIS states that there will only be a temporary minor increase in hiring to meet needs of rental and retail services.

CO95-14 The DEIS states that Atlantic and DTI would each have a health and safety plan to prevent and minimize accidents; but acknowledges that use of local emergency, fire and health services could occur, but fails to account for the need for increased capacity and training of local services to deal with any emergencies. DEIS claims that, because Atlantic and DTI would maintain emergency response plans and that concerns about costs and local ability to respond to a catastrophic accident are unfounded, based on statistical data, there will be no significant added expenses for local government services. In fact, local fire and emergency responders are often the first responders to a pipeline explosion or fire, and the number of significant pipeline incidents has been increasing in recent years, especially on pipelines built since 2010. Data from the Pipeline and Hazardous Materials Safety Administration show a dramatic increase in pipeline incidents for pipelines built in the past 6 years, even higher than for pipelines built before 1940, which provides a reasonable basis for public safety concerns.

ACP plans to have three NC construction "spreads" with 885 workers and 85 inspectors in each for a period of months, with about half expected to be workers from outside region. The only

CO95-13 We disagree that the analysis was inadequate. The EIS was prepared in accordance with NEPA, CEQ guidelines, and other applicable requirements. The EIS includes sufficient detail to enable the reader to understand and consider the issues raised by the proposed project.

CO95-14 Section 4.12.1 describes the coordination Atlantic and DETI would be required to complete with local emergency response providers (such as fire and police departments) to ensure that the proposed projects do not adversely affect these emergency services' ability to serve their communities. See also the response to comment CO67-15.

permanent jobs anticipated would be 15 employees at the compressor station and offices in Northampton and 5 in Johnston. No significant positive economic benefit can be assumed.

CO95-15 The DEIS authors are dismissive of the Key Log study of economic impacts on property values in VA counties. Instead they site studies commissioned by Dominion and real estate sources, with the claim that they are independent, stating that there's no impact on value of local properties, except in the first few years after a pipeline accident.

The Key Log reports demonstrate that the DEIS's assessment of socioeconomics is flawed because FERC fails to critically evaluate applicant-provided assessments of potential economic benefit when those assessments use flawed research methods, applies the methods inappropriately, and bases estimates on unrealistic assumptions. FERC also fails to critically evaluate flawed research into gas-industry-sponsored and/or promoted research, which concludes, falsely, that pipelines do not diminish property value. FERC fails to consider external costs due to lost ecosystem service value, carbon and other greenhouse gas emissions, and impacts on regional recreation, tourism, and other amenity-dependent economic development. Finally, FERC unreasonably dismisses independent research into the likely economic impacts of the proposed Mountain Valley Pipeline. The Key-Log analyses undermine FERC's conclusion that the proposed projects would not have a significant adverse effect on the socioeconomic conditions of the project area.

There is a pattern of uncritically accepting the claims of ACP contracted studies, while dismissing independent studies simply because they have been contracted by environmental organizations or organizations opposing pipeline development. The authors acknowledges that a variety of factors make such analyses problematic, and that "perceived safety issues" or limitations on land uses with a permanent easement may effect number of buyers and thus the time a property could stay on the market. This is, in fact, one of the key concerns of many rural residents who had viewed their land and its use as a legacy that they had expected to be able to pass to descendants. Most of these studies of buyer perception have been done in higher density areas than the predominantly rural areas in which ACP would be built, so impacts on land value and long term use may be expected to be more acute in agricultural areas.

As the ACP's own studies forecast only about $72K in additional individual income tax payments to NC Dept. of Revenue during operational years, this would indicate an insignificant increase in economic benefits to counties where employees are located. A high proportion of permanent employees can be anticipated to have been recruited from outside the state of NC.

Studies cited by the DEIS to indicate reduced energy costs for NC and VA customers are based on erroneous assumptions. ".. The Economic Impacts of the Atlantic Coast Pipeline, conducted by ICF International (ICF, 2015) assessed anticipated effects of ACP on natural gas and electricity prices as well as economic impacts on the project area. The study, which measured the net effect of energy cost savings to homes and businesses due to increased access to natural gas supplies, concluded that from years 2019 to 2038, operation of ACP could result in a net annual average energy cost savings of $377 million for natural gas and electricity consumers

CO95-15 See the response to comment CO86-17.

CO95-15 (cont'd) in Virginia and North Carolina. Additionally, the study found that the energy cost savings (due to increased supply of low-cost energy sources) could allow consumers and businesses to spend money in other parts of the economy, leading to the creation of new jobs, labor income, tax revenues, and gross domestic product."

In order to forecast such an outcome, the study necessarily assumes stable or increasing natural gas production and stable low gas prices. Neither of these can reasonably be assumed: shale gas production has been decreasing in recent months and prices are expected to rise. As a result, the $5.5 B debt that ratepayers would be forced to pay for in increased utility bills is highly unlikely to be compensated for by any "low cost" energy supply. Instead, it is possible that there will be either an inadequate gas supply to fill the overbuilt pipeline system in the VA/NC area or that renewable electric supply will continue to drop in price, providing less costly energy supply, while the region will be saddled with unneeded, costly infrastructure, funded by ratepayers with profits to Dominion and its partners in the ACP up to 15% as approved by FERC.

ACP anticipates paying $30 million annually to local governments along the 3 states for property taxes. However, it is unclear what the impact would be on property values if pipeline is underutilized, due to inadequate gas supply or relatively high gas prices. The Key Log report predicts that the tax revenue received by local governments will be outweighed by additional local government costs and lost revenue due to impacts on property markets.

Environmental Justice

CO95-16 The Environmental Justice analysis in the DEIS Starts by assuming the principle policy impact of the Environmental Justice Executive Order is only to ensure widespread public participation and congratulates the ACP for widespread public notification and participation, listing meetings which were inadequately noticed and total of 330 comments, a tiny fraction of the population that could be impacted in even one of the three states the ACP would traverse.

FERC's study acknowledges that more than half of NC counties are below the median income for NC, and notes that "Twenty-seven of the 42 census tracts in North Carolina within a 1-mile radius of ACP facilities have a higher percentage of persons living below poverty-level when compared to the state." This fact, by itself, indicates that the route chosen creates disproportionate impact of the pipeline on low income residents, and therefore contradicts the DEIS conclusion that "no environmental justice populations are impacted."

The DEIS analysis of minority populations is remarkable in its contorted logic used minimize the relative impact on people of color. It notes that: "In North Carolina, minorities comprise 30.5 percent of the total population. The percentage of minorities in the North Carolina census tracts within 1 mile of ACP ranges from 12.5 to 95.5 percent. In 13 of the 42 census tracts, the minority population is meaningfully greater than that of the county in which it is located." On this, FERC uses this result to reinforce its conclusion that there are no disproportionate impacts on environmental justice populations.

CO95-16 See the response to comment CO86-11.

CO95-16 (cont'd)

Remarkably, unlike the comparison to census tracts within one mile of the pipeline corridor for poverty to the state as a whole, FERC's study only compares minority population % in census tract near pipeline with the % minorities in the county in which this occurs. As most of the NC counties along the proposed ACP corridor have minority populations significantly above the state average (Northampton County, for instance, is 58% African American, compared to a state average of 22%)...this greatly minimizes the apparent disproportionality in minorities impacted. A comparable analysis to disproportionate impacts on low income residents would use a comparison to state minority populations, and would result in a dramatically different conclusion.

In a recent study **County-Level Race & Ethnicity Analysis of NC Segment of the ACP Route,** by researchers at Research Triangle Institute (Allpress, J., Hofmann, J., Wraight, S., Depro, B. (2017). *U.S. Census Socioeconomic Data, Environmental Justice, The Atlantic Coast Pipeline: A Methods Report*. Unpublished manuscript), it is highly that significant disproportionate impact is occurring to minority populations.

Researchers downloaded county-level 2010 Decennial Census data for the entire state, and determined the number of people in every county who self-identified as white and non-Hispanic. They subtracted that subpopulation from the total population of each county to obtain the number of "minority" residents, and divided the states' counties into two groups, those that were crossed by the proposed pipeline route and those that were not. The proportional minority population was calculated for each group. Using a two-sample test of proportions, the proportion minority population of the counties that would be crossed by the proposed pipeline with the proportion minority population of the rest of the counties in the state was compared. The results are below:

Pipeline route counties' proportion minority population	0.5099
Proportion minority population for rest of the counties in the state	0.3295
P-Value (one-tailed test)	0.0000
Conclusion	The counties crossed by proposed ACP route collectively have a significantly higher percentage minority population than the rest of the counties in the state (at the 99% confidence level).

The failure of the ACP and FERC to do any serious credible analysis of disproportionate impacts is clearly a violation of NEPA requirements. The following "hand waving" statement only shows

CO95-16 (cont'd)

the extent of the abdication, even as its own analysis does indicate that impacts on minority communities are likely to occur:
"The construction and operation of the proposed facilities would affect a mix of racial/ethnic and socioeconomic areas in the ACP and SHP project area as a whole. Not all impacts identified in this EIS are considered to affect minority or low-income populations. The primary adverse impacts on the environmental justice communities associated with the construction of ACP and SHP would be the temporary increases in dust, noise, and traffic from project construction. These impacts would occur along the entire pipeline route and in areas with a variety of socioeconomic backgrounds."

Finally, in a betrayal of its lack of understanding of the simple term "disproportionate, " FERC claims that because impacts may be happening in low population areas, fewer people would be hurt and therefore they can't see evidence of disproportionate impact: "Because the projects would generally traverse rural areas, the number of persons who would be at risk of injury due to a pipeline failure would be low, and there is no evidence that such risks would be disproportionately borne by any racial, ethnic, or socioeconomic group." Just because there is a low population concentration doesn't mean that people of low income or people of color would not be disproportionately impacted. In fact, in comparing the current ACP corridor to earlier proposed ACP routes, it is clear that the current proposed corridor for the Atlantic pipeline is a result of sequential adjustments to traverse areas of greater poverty and more people of color, a clear manifestation of Environmental Injustice.

Cultural Resources

CO95-17

Quotes from DEIS indicating acknowledged impacts or lacking information:

- "Construction and operation of ACP and SHP could adversely affect historic properties. These historic properties could include prehistoric or historic archaeological sites, districts, buildings, structures, and objects, as well as locations with traditional value to Native Americans or other groups."
- The DEIS states that "Surveys, reporting, and NRHP determinations are not complete for cultural resources along ACP." Although Atlantic will continue to conduct surveys and file the reports as they are prepared, it is unfair to ask the public to comment on incomplete information about impacted cultural and historical resources. FERC cannot make a decision on the pipeline based on incomplete surveys.
- In North Carolina, there are 92 cultural resource sites along the pipeline route that could be impacted. This includes "45 archaeological sites, 16 cemeteries, 2 battlefields, and numerous standing structures." However, State Historic Preservation Officer comment on 79 of these sites is still pending.
    - "The project area of potential effect (APE) intersects with two battlefields in North Carolina, the Averasborough Battlefield and the Bentonville Battlefield."

CO95-17 See the response to comment CO70-2.

CO95-17 (cont'd)

- "The SHPOs have not provided comments on the reports that Atlantic filed in September 2016 (archaeology reports) and October 2016 (historic architecture) for all three states." Until the SHPOs have been able to review all of the sites and provide comments, Atlantic should not be able to begin construction. If the reviews are incomplete, and a site is disrupted by the pipeline or construction, we could lose an invaluable cultural or historic resource that may not ever be able to be restored.
- Atlantic contracted with Environmental Resources Management (ERM) to conduct the cultural resource investigations for the ACP. However, we know from experience with other pipelines like Keystone and DAPL that these types of private consulting firms are not able to identify many sites that may be of cultural significance to Native American tribes. Some sites may be ceremonial or have native plants that are significant to traditional practices, and an archaeologist or scientist wouldn't have the cultural knowledge necessary to recognize these.

Tribal Consultation

CO95-18

- FERC consulted with federally recognized American Indian tribes about the ACP. However, they failed to comment on any consultation with the Lumbee Tribe, which is a state recognized tribe that has sizeable populations in Robeson and Cumberland counties. There are 58,306 individuals in the state of North Carolina who identified as Lumbee (alone or in combination) in the 2010 census, and 42,111 (>72%) of these individuals live in counties that would be affected by the pipeline. Members of the Lumbee Tribe make up 38% of the entire population of Robeson County. The Lumbee Tribe is the largest non-federally recognized tribe east of the Mississippi River, and the 9th largest non-federally recognized tribe in the U.S.
  - Population source: http://www.doa.nc.gov/cia/documents/populationdata/TotalPopulationbyTribebyNCCounty.pdf
- The ACHP Handbook for Consultation with Indian Tribes in the Section 106 Review Process (http://www.achp.gov/pdfs/consultation-with-indian-tribes-handbook-june-2012.pdf) says that a federal agency may invite groups to participate in consultation if they have a demonstrated interest in the effects of the project. A demonstrated interest could be that a tribe has "ancestral ties to the area of the undertaking." With such a large population in the pipeline's area of potential effect, the Lumbee certainly appear to have a demonstrated interest in the project.
- If the Lumbee Tribe was purposefully left out of the DEIS and consultation process, FERC should provide justification for that decision. If leaving them out was an oversight, FERC should officially consult with the Lumbee before any decisions are made.

Unanticipated Discovery Plans

CO95-18 See the response to comment NAT1-4.

CO95-19

- "Atlantic and DTI submitted Unanticipated Discovery Plans outlining the actions they would take in the event that archaeological resources including human remains were inadvertently exposed during project construction." The discovery plans state that if Atlantic/DTI come across any significant cultural or historical discoveries during construction, that they are supposed to stop what they're doing and report it to the Environmental Investigator. But this would rely on the ability of Atlantic employees to recognize these resources, and the integrity and ethics of Atlantic to cease construction. Instead, Atlantic should be required to have an independent professional archaeologist on-site for any ground-disturbing activities, and if any cultural resources are found then any further construction should be halted until an appropriate review has been conducted.

Compliance with NHPA

CO95-20

- "Compliance with section 106 of the NHPA has not been completed for ACP and SHP. Atlantic and DTI still need to complete cultural resources surveys of proposed project areas and treatment plans for NRHP-eligible sites that cannot be avoided."
- FERC states in the DEIS that:
    - **"Atlantic and DTI should not begin construction of ACP and SHP facilities or use of contractor yards, ATWS, or new or to-be-improved access roads until:**
        - **A. Atlantic and DTI file with the secretary:**
            - **I. all survey reports, evaluation reports, site treatment plans, and cemetery avoidance plans; and**
            - **II. comments on all reports and plans from the Pennsylvania, West Virginia, Virginia, and North Carolina SHPOs; the MNF; GWNF; and NPS; as well as any comments from federally recognized Indian tribes; and other consulting parties, as applicable;**
        - **B. the ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and**
        - **C. the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies Atlantic and DTI in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed."**

The Cultural Resources section of the DEIS, like many other sections, is incomplete and does not provide sufficient information for the public to adequately comment on the project. Atlantic has not completed the necessary groundwork for FERC and the public to thoroughly understand the potential impacts of the project on cultural and historic resources. Though FERC suggests in the DEIS that Atlantic should not begin construction until relevant reports and plans are filed with the agency, this still would not allow the public and other interest groups to review a complete DEIS before a decision is granted by FERC.

CO95-19 See the response to comment NAT1-4.

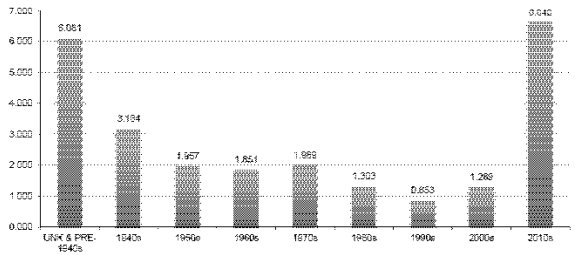
CO95-20 Comment noted.

The DEIS Greatly Under Assesses the AP-2 Threats to Safety of North Carolina Communities Along the Pipeline

In response to a number of safety concerns expressed by public commenters during the "scoping" period, FERC simply responds that "ACP and SHP (Supply Header Project) aboveground facilities would be designed, constructed, operated, and maintained in accordance with DOT Minimum Federal Safety Standards in 49 CFR 192."

Since 2010, there has been, according to Pipeline and Hazardous Materials Safety Administration (PHMSA) data, a five-fold increase in the number of pipeline incidents per 100,000 miles of gas transmission pipeline (see figure below). If compliance with those DOT safety standards were adequate, we would not have seen such a dramatic rise in pipeline incidents, during this period in which a record number of pipelines have been approved and constructed. Such a rise is evidence that the DOT Minimum Federal Safety Standards themselves are inadequate to prevent pipeline incidents, or that the inspection and enforcement of those standards is failing, likely due to rushed pace of construction, or both.

Average number of annual incidents over 2005-2013 per 10,000 miles of onshore gas transmission pipe by decade of pipe installation



As of March 2015
Sources: U.S. Pipeline and Hazardous Materials Safety Administration, Pipeline Safety Trust

According to the DEIS, "Section 157.14(a)(9)(vi) of FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection, or certify that it has been granted a waiver of the requirements of the *Reliability and Safety* 4-472 safety standards by the DOT in accordance with section 3(e) of the Natural Gas Pipeline Safety Act." The PHMSA data above necessarily raise the question as to whether the required certification by an applicant is adequate to assure compliance in a time when the motivation to construct pipelines as quickly as possible under conditions allowing up to a 14% Return on Investment.

COMPANIES/ORGANIZATIONS COMMENTS

CO95 – Clean Water for North Carolina (cont'd)

CO95-21 The DEIS identifies one High Consequence Areas (HCA's) each in Northampton, Halifax and Wilson Counties, and multiple HCA's in Nash, Johnston, Cumberland and Robeson Counties, indicating areas of higher occupied building density or where the impact circle is greater than 660 feet and intercepts 20 or more buildings for human occupancy or an identified site, with anticipated occupancy more than 50 days per year or with disabled persons difficult to evacuate. A basic right should be for any person who will stay for extended periods or resident in a building close to a major gas pipeline to be aware of its presence and to be trained to recognize and respond to (report and evacuate) any evidence of a pipeline leak or disturbance. This is particularly critical for residents in an HCA.

Yet, when staff of Clean Water for North Carolina met with residents door to door in an identified HCA (though it had not been formally identified at the time of our visits) in Garysburg, NC (Northampton County) or at several HCA locations in Robeson County, there was almost no awareness of plans to construct the ACP, the size of the pipeline, and certainly not that their residence was in or near a High Consequence Area. This deprives residents of the right to informed participation in public scoping meetings, FERC comment sessions (which fell far short of any reasonable definition of public "hearings") or the ability to give informed comment as well as take any actions that would protect their lives and property from the higher risks associated.

For FERC to callously compare the risks of a pipeline incident to a resident in constant higher risk due to being at a pre-existing location, to those of extreme natural events or chosen activities such as driving, is entirely inappropriate and deeply disrespectful of the rights of residents who are disproportionately low income and people of color (see socioeconomic comments).

CO95-22 The DEIS describes Atlantic consulting with Local Emergency Planning Committees and Fire and Emergency officials. From experience and a study by Clean Water for North Carolina of NC LEPCs, we know that many of them are not functioning at all or are only meeting annually, and are seldom discussing urgent public safety matters. While Fire and Emergency Services personnel may more ready for such a consultation, we can reasonably assume that Atlantic staff will downplay potential safety hazards and the risks associated with any response, and there is no assurance that equipment available to them will be adequate to deal with a major incident. Further, in a 2016 Clean Water for NC phone survey of Emergency Directors and County Managers in the relevant NC counties, several were completely unaware the pipeline would be traversing their county or had no understanding of the planned timing. One Emergency Management Director said he thought the pipeline would be constructed starting in 2025.

The DEIS includes "direct mailings" to police, fire and emergency officials as one of the ways that Atlantic will stay in touch with them, wholly inadequate to assure that the information is incorporated into staff knowledge and agency planning. Even where adequate training programs are established for such personnel, the turnover of staff will necessarily

CO95-21 As described in section 4.12.1, the list of HCAs follows the DOT rules that define a HCA as an area where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for DOT to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area. We do not have the authority to require pipe thicknesses beyond what the DOT requires. Per DOT regulations, Atlantic and DETI would be required to design and construct the pipeline based on identified area classifications and HCAs at the time of construction. If a subsequent increase in population density adjacent to the right-of-way results in a change in class location for the pipeline, Atlantic and DETI would reduce the MAOP or replace the segment with pipe of sufficient grade and wall thickness, if required to comply with DOT requirements for the new class location or HCA.

Atlantic and DETI are required to provide FERC with a list of all affected landowners as defined in 18 CFR 157.6(d)(2), and the list of affected landowners was part of our environmental mailing list who received the draft EIS. Anyone who wishes can request to be added to the FERC mailing list by submitting a comment on the docket or contacting FERC directly.

CO95-22 As described in section 4.12.1 and the response to comment CO95-14, Atlantic and DETI would be required to work with local emergency response providers to ensure that the projects do not affect these emergency services' ability to serve their communities.

CO95-22 (cont'd) require retraining in person with updates on at least an annual basis. Such training must also include familiarity with all remote monitoring systems used by Atlantic and the ability to check and report on any monitoring failures.

As the largest categories of pipeline incidents for recently built pipelines are associated with equipment failure and excavation, additional redundancy and increased frequency of on-site testing must be required for all systems associated with pipeline safety, and more visible and frequent pipeline signage must be required on all pipelines.

FERC's analysis of safety implications of the Atlantic Coast Pipeline is simplistic and minimizes the risk, and the requirements for public notification are seriously inadequate. Thus the DEIS fails to meet the requirements of NEPA.

Cumulative Impacts and Climate

CO95-23 The DEIS fails completely to include impacts on "upstream" communities where extraction activities are taking place. My organization visited Doddridge County, WV in 2015 and saw first-hand the damage being done to groundwater, surface water, air quality and community safety during production there. While this was a community accustomed to conventional oil and gas production, the scale and intensity of disturbances and emissions that have occurred as fracking has continued and grown in this region must be considered as part of the cumulative impacts of this project. It is clear that major gas extraction companies like EQT would not have been interested in scaling up their production so massively if there wasn't a plan route to export gas to areas of higher prices. In other words, the very proposal of the ACP has already caused substantial cumulative impacts, which will only become worse if pipeline operation begins.

Finally, it's understood that about 80% of the gas transmitted along the ACP will be used to supply gas fired plants operated by Duke Energy and Dominion. In addition to the methane emissions from pipeline pigging and other operations, from compressor station blowdowns and from leaks during transmission, a just-published Purdue Univ. study points to likely methane emissions from various equipment at gas fired power plants up to 120 times greater than previously reported. In other words, the pipeline will not only contribute to significant increases in climate changing emissions, it will primarily serve to supply a very large additional source of methane emissions. If built, this pipeline will be viewed by future generations as a monument to environmental injustice, violating landowner rights and perpetrating avoidable climate crime—all to serve the economic interests of the ACP partners' shareholders.

CO95-23 See the response to comment CO55-2.

COMPANIES/ORGANIZATIONS COMMENTS

CO96 – Sound Rivers

SOUND RIVERS
NEUSE & PAMLICO-TAR RIVER FOUNDATIONS

April 5, 2017

United States of America
Federal Energy Regulatory Commission

Re: Docket Nos CP15-554-000, CP15-554-001

To Whom It May Concern:

Sound Rivers, Inc. (SRI) is writing in response to the Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline (ACP) as proposed by Atlantic Coast Pipeline, LLC (Atlantic). The entire project encompasses over 640 miles of natural gas transmission pipeline and associated facilities, including new and modified gas-fired compressor stations from the Marcellus shale region of West Virginia to North Carolina and coastal Virginia. The comments herein are focused on the direct, cumulative and indirect impacts associated with the construction, use and maintenance of the ACP in North Carolina and specifically within the Neuse and Tar-Pamlico River basins. Sound Rivers respectfully ask that the Commission include these comments in the administrative record for its proceedings under the National Environmental Policy Act (NEPA) and the agency's Certificate Policy Statement in dockets CP15-554-000, CP15-554-001.

Sound Rivers is a non-profit organization that works to guard the health and natural beauty of both the Neuse and Tar-Pamlico River Basins. SRI represents more than 3000 members, many of whom work, live, recreate, fish, swim and obtain their drinking water from the Neuse and Tar-Pamlico River basins. SRI partners with concerned citizens to monitor, protect, restore, and preserve these watersheds, which cover 23% or 12,000 square miles of North Carolina's landmass, in order to provide clean water to our communities for consumption, recreation, nature preservation, and agricultural use.

Summary

The ACP's current proposed route will cross 343 waterbodies in North Carolina and result in substantial and long-term impacts to the aquatic resources of the state. The information provided within the DEIS fails to comply with the NEPA in numerous ways. The document fails to take the required "hard look" at the proposed impacts and provide reasonable alternatives for consideration. In addition, the DEIS is lacking sufficient information, including specific mitigation proposals, for reviewers and commenters to evaluate the impacts the project will have on water resources and aquatic species. There are also considerable questions surrounding the documented public need for the project to meet the energy demands of North Carolina and Virginia.[1] Therefore, Sound Rivers requests that the Commission issue a revised DEIS or supplement for public comment once the necessary information is provided by Atlantic.

[1] Comments submitted by Southern Environmental Law Center on the draft EIS for the Atlantic Coast Pipeline and Supply Header Project on behalf of Shenandoah Valley Network and 20 other conservation groups in FERC dockets CP15-554-000, CP15-554-001, and CP15-555-000.

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Z-2201

CO96-1

NEPA: Additional Information Required

The National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321, et. seq., applies broadly to "promote efforts which will prevent or eliminate damage to the environment." NEPA has several goals. First, "it places upon [a federal] agency the obligation to consider every significant aspect of the environmental impact of a proposed action."[2] Second, NEPA "ensures that the agency will inform the public that it has indeed considered environmental concerns in its decision making process."[3]

Federal agencies must prepare an environmental impact statement ("EIS") when the action proposed by the agency is a "major federal action significantly affecting . . . the human environment" (42 U.S.C. § 4332(C)). The alternatives analysis is "the heart of the environmental impact statement" (40 C.F.R. § 1502.14). In evaluating alternatives, FERC must "[r]igorously explore and objectively evaluate all reasonable alternatives" to the proposed action. *Id.* In addition to reasonable alternatives, the NEPA analysis should consider a "no action" alternative (40 C.F.R. § 1502.14).

FERC noted throughout the DEIS that the document contains incomplete information. As examples of this lack of information, the DEIS notes that endangered species surveys were not completed, mitigation information was incomplete, and a mussel relocation plan was submitted but in draft form and is currently being finalized. In fact, Atlantic has submitted over 8,000 additional pages of information. All of this information is crucial to the NEPA process and the true evaluation of alternatives as well as providing the public with the necessary information to evaluate the impact and understand the lead agency's conclusions regarding environmental impacts. It is impossible for our members to determine which documents are relevant and which documents / analysis may now be out of date.

In order to comply with NEPA, FERC must collect all required documents from Atlantic and re-issue a draft EIS and establish another public comment period.

Endangered and Threatened Species

North Carolina streams, rivers and wetlands provide vital ecosystem resources, in addition to contributing to the natural beauty of this area. For example, many of the Neuse and Tar River basin streams are inhabited by a diverse array of aquatic wildlife, including a rich variety of mussel species.

The Tar River watershed, including the main tributaries of Swift and Fishing Creeks, supports a diverse aquatic population and is the source of drinking water for the majority of communities located downstream.

The largest threat to the quality of the Tar River is the rapid growth the region is experiencing. Research regarding the protection of aquatic species and water quality point to the threat of future development,

[2] Kern v. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002) (quoting Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc., 462 U.S. 87, 97 (1983)) (internal quotations and citations omitted, alteration in original).

[3] [2] *Id.* NEPA requires federal agencies to take a "hard look" at environmental impacts of proposed actions. *See, e.g.,Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989).

CO96-1 See the response to comment CO6-1.

sedimentation, increase wastewater discharges as all highly problematic for aquatic species continued survival.[4]

The Upper Tar River Subbasin is a globally significant freshwater resource. In fact, it is considered a "Hot Spot" for freshwater conservation by The Nature Conservancy (TNC). In terms of rare species richness, it is considered one of the top 72 out of 2,000 subbasins across the United States.[5] Given nearly 80% of our nation's 300 mussel species are considered extinct, endangered, threatened, or special concern by our scientific community and 37% of our nearly 900 fish species are considered the same, it is extremely import to prevent any degradation of the Upper Tar River Subbasin.

As described in the NC Wildlife Resource Commission's "Wildlife Action Plan", the Tar-Pamlico River basin is home to 39 priority aquatic species.[6] The NC Natural Heritage Program (NC NHP) lists the upper Tar River as a "nationally significant aquatic habitat". The USFWS characterizes the Tar River as one of the "few best places in the southeast and a mussel refugium of national significance".[7] In addition, the FWS adds: "the Tar River supports the Atlantic Pigtoe (fusconaia masoni), one of the few remaining populations of Yellow Lance (Etliptio lanceolata), the Green floater (Lasmigona sitbvfridis), the Carolina Madtom (Noturus furiosus) and the Neuse River Waterdog (Nectitrus lewisi); all five of these species have suffered significant declines in their range and the Service have been petitioned to consider them for federal listing as endangered/threatened." In fact, the FWS just this week has proposed listing the yellow lance for federal endangered species act protection. Furthermore the letter continues to state, "Tar River Spinymussel, Carolina Madtom, and Neuse River Waterdog are endemic to only the Neuse and Tar-Pamlico drainages and occur nowhere else on the planet."

As noted in the Neuse River NC Basinwide Water Quality Plan,[8] "Good water quality in the Neuse River Basin is critical to the survival of a large number of rare freshwater mussels. Eighteen species of rare freshwater mussels, plus one rare snail [panhandle pebblesnail (Somatogyrus virginicus)] are known from the Neuse Basin, and two species, the dwarf wedgemussel (Alasmidonta heterodon) and Tar River spinymussel (Elliptio steinstansana), are federally-listed as Endangered. The majority of the Neuse Basin mollusks inhabit small streams." In addition, the basinwide plan notes that the Little River, proposed to be crossed via HDD, is "nationally significant" stream system that contains 15 different rare species. "including several populations of the Federally Endangered dwarf wedgemussel and the only population of the Tar River spinymussel in the Neuse basin."

CO96-2 The DEIS is lacking sufficient information on the actual impacts to listed species and proposed mitigation for any potential impact. While SRI appreciates the efforts of Atlantic, in consultation with the NC Wildlife Resource Commission and US Fish and Wildlife Service to work to minimize direct impacts, significant direct and cumulative impacts remain. In addition, the DEIS notes in several places that

[4] 2014 Tar-Pamlico Basinwide Water Quality Plan. http://www.ncwater.org/basins/Tar-Pamlico/index.php
[5] Master, Lawrence L., Stephanie R. Flack and Bruce A. Stein, eds. 1998. *Rivers of Life: Critical Watersheds for Protecting Freshwater Biodiversity*. The Nature Conservancy, Arlington, Virginia.
[6] NC Wildlife Resource Commission, "Wildlife Action Plan". 2005. http://www.ncwildlife.org/plan.aspx
[7] Letter from Pete Benjamin, USFWS to Teresa Rodriguez, NC DWR, August 2, 2016
[8] Neuse River Basin Water Quality Plan. 2009. Chapter 20, page 400.

Z-2203

CO96-2 Section 4.7.1 has been updated to include enhanced conservation measures, including those related to ORVs and water withdrawals and discharges. Sections 4.7.1.7, 4.7.1.8, 4.7.1.10, 4.7.1.11, 4.7.1.14, and 4.7.1.15 have been updated with avoidance, mitigation, and conservation measures.

CO96-2 (cont'd)

mitigation plans are not finalized. It is impossible for the public to evaluate the ability of the proposed mitigation to actually offset the impacts. Without this information, FERC cannot reasonably conclude that the mitigation will offset impacts to endangered and threatened species.

As noted in a June 2016 letter from the USFWS to FERC, proposed water withdrawals from streams and the return of that water may be harmful to aquatic wildlife, introduce pollutants to the waterbody and negatively impact stream flows, especially during low water conditions.

While Atlantic has proposed to cross several sensitive stream channels in the Tar and Neuse River basins using HDD, smaller tributaries that are part of the stream sub-watersheds will be impacted directly by other methods, including dam and flume or open cut. Tributaries within the Swift Creek, Fishing Creek and Little River watersheds are equally as important for endangered aquatic species survival as the mainstems. While SRI understands the USFWS has requested additional "measures" to protect water quality and habitat at those crossings, there is no indication at this point if those recommendations will be required. In addition, the right-of-way established at these crossings will allow for ORV access to sensitive stream channels, resulting in damage and potential loss of endangered species and aquatic habitat.

SRI remains opposed to the open cut method currently proposed for the Neuse River crossing. Significant populations of Roanoke slabshell, a state endangered listed species, are found upstream and downstream of the crossing corridor.

In conclusion, FERC has not provided sufficient information to support a conclusion and finding that the project will "not likely to adversely affect" aquatic species and supporting habitat. Therefore, FERC has failed to provide the "hard look" required in an EIS, and has thereby precluded the public from having sufficient information on which to base comments on the impacts that the Project will have on these species. Providing the public with sufficient information to analyze the circumstances and impacts of a proposed project is essential to the NEPA process.

Sincerely,

Heather Deck
Pamlico-Tar Riverkeeper
Deputy Director, Sound Rivers

Matthew Starr
Upper Neuse Riverkeeper
Sound Rivers

COMPANIES/ORGANIZATIONS COMMENTS

CO97 – The Nature Conservancy

The Nature Conservancy
Protecting nature. Preserving life.™

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April 6, 2017

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Washington, DC 20426

RE: Docket Numbers CP15-554-000, CP15-554-001; Draft Environmental Impact Statement for the proposed Atlantic Coast Pipeline

Dear Mr. Davis:

The Nature Conservancy appreciates the opportunity to provide comments on the Draft Environmental Impact Statement (DEIS) that has been prepared for the Atlantic Coast Pipeline (ACP).

The mission of The Nature Conservancy (The Conservancy) is to conserve the lands and waters on which all life depends. The Conservancy is a leading conservation organization working in all 50 states and more than 35 countries. We have helped conserve nearly 15 million acres of land in the United States and more than 118 million acres with local partner organizations globally.

The proposed route of the ACP crosses through the Central Appalachian and Longleaf Pine Whole System Projects, both of which are areas of deep investment for the Conservancy. Within these regions, The Conservancy has worked with public agencies, corporations, private landowners, and local communities to undertake land protection, management, and restoration actions across public and private lands. We have worked with others to develop and implement strategies to protect the best large, intact habitats that will continue to support a diversity of species, in the face of a changing landscape and a changing climate.

Below we address the issues we initially raised in EIS scoping letters The Conservancy filed with FERC on April 28, 2015 and June 2, 2016.

Extend the Comment Period for the DEIS or Provide a Supplemental DEIS

CO97-1 **The Conservancy strongly recommends that FERC either formally extend the Comment Period for the DEIS or prepare a Supplemental DEIS to allow public review and comment on the information that has yet to be submitted in response to 36 recommendations by FERC staff.** The public has a compelling interest not only in the benefits that would accrue from the expanded transport of natural gas, but also in the consequent impacts of such expansion. As such, the Conservancy submits that FERC must provide the public with a complete analysis of those impacts and how they can be avoided, minimized, and the amount and type of compensation that can offset the impacts. Because the FERC process does not provide a comment period on a Final EIS, the only means by which this can be achieved is through a supplement to the current DEIS.

CO97-1 The draft EIS comment period was 90 days, which was longer than the FERC's typical comment period of 45 days. See also the response to comment CO6-1.

Z-2205

CO97-1 (cont'd)

In our scoping comments, the Conservancy requested that FERC detail how impacts will be avoided, then minimized, and how compensatory measures can offset impacts that cannot reasonably be avoided. In the DEIS, FERC staff conclude that "*construction and operation of ACP and SHP would result in limited adverse environmental impacts, with the exception of impacts on about 6,800 acres of forested vegetation/wildlife habitat; the federally listed Indiana bat, northern long-eared bat, Roanoke logperch, Running Buffalo Clover, and Madison Cave isopod, which would likely be adversely affected by the projects. . .[and] constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur. As part of our review, we developed specific mitigation measures that we determined would appropriately and reasonably reduce the environmental impacts resulting from construction and operation of ACP and SHP. We are therefore recommending that our mitigation measures be attached as conditions to any authorizations issued by the Commission.*"

FERC has made 36 recommendations to Atlantic to provide information by the end of the comment period for the DEIS. As of this date, Atlantic has not provided FERC all of the information of interest to The Conservancy (see comments below on karst and forests). In order for the public, including The Conservancy, to be able to comment on FERC's assessment of impacts and measures to mitigate them, a formal extension of the comment period must be provided and/or a Supplemental DEIS must be issued for public review when the requested information has been submitted and deemed complete. In particular, it is important to allow public consideration of the appropriateness and practicability of the avoidance, minimization, and compensatory mitigation measures.

Avoid All Preserves and Conservation Easements

CO97-2

We have been consistent in our requests to FERC and ACP that the pipeline avoid all conservation easements. Yet *Section 4.8.5.2* of the DEIS states that "The AP-1 mainline would cross 8.7 miles of easements held by the Virginia Outdoors Foundation (VOF)." The Conservancy is deeply concerned that the DEIS exhibits a lack of understanding of the implications of allowing the pipeline route to cross lands protected by conservation easement.

Conservation easements have a clear public benefit, documented in many state and federal statutes and regulations. The donation of perpetual conservation easements has been incentivized both by the Commonwealth of Virginia and the federal government in the form of tax benefits to the donor of the easement. Easements represent the intent of a landowner to ensure a durable conservation outcome on their property for the benefit of the public. Both this intent and its public benefit would be thwarted by construction of a pipeline across these properties. Perpetuity is what makes conservation easements unique, and perpetuity is essential to their efficacy as a conservation tool. Allowing land under a conservation easement to be converted to a non-conservation use to accommodate infrastructure such as natural gas pipelines calls into the question the extent to which such easements are actually perpetual.

FERC seems to have placed undue emphasis on the fact that state law contains a process for such conversions. But we do not think that process is applicable in the current case. As we stated in our June 8, 2016 letter to VOF:

> We recognize that §10.1-1704 provides an avenue through which, under very limited circumstances, land under a VOF easement can be diverted from open-space use. Under this statute, VOF can only allow such a diversion after making a finding that the diversion is "essential to the orderly development and growth of the locality." The Conservancy submits that such a finding cannot be made at this time. There exists no rationale for concluding that the project, which is at this stage merely a proposal, constitutes "essential" development for these localities.

CO97-2 The final EIS discussion of VOF conservation easements has been updated based on information from Atlantic, the VOF, and other appropriate permitting and regulatory authorities.

See the responses to comments CO3-1 and CO10-3.

CO97-2 (cont'd)

Further, FERC has failed to analyze the consistency of the ACP with the easements held by VOF, the impacts of conversion, or the extent to which such conversion would meet the above requirements under §10.1-1704. **We therefore request that FERC direct ACP to develop a buildable route variation that avoids these conservation easements, and that FERC perform and make available for public review the necessary analyses to determine that conversion of VOF easements is the environmentally preferable alternative.**

If FERC chooses, over the objections of the Commonwealth, The Nature Conservancy, and many other organizations, to allow the pipeline to be routed through lands under conservation easement, then it is essential that FERC ensure that measures to minimize impacts to conservation values and compensate for remaining unavoidable impacts are conditions of the Certificate of Public Necessity and Convenience.

We have urged VOF to delay consideration of ACP's conversion request until after FERC makes a final decision on the pipeline route, and this appears to be the approach that VOF is taking. If and only if FERC approves a pipeline route that includes lands under easement, effectively having made the determination that avoidance of these lands is not possible, would it become appropriate for compensation for impacts to be considered. As we stated in our letter to VOF: "The mitigation hierarchy must, in our view, be implemented sequentially. Only after impacts are avoided and then minimized to the fullest extent possible is it appropriate to consider how to offset the remaining impacts."

State law does provide an adequate standard for ensuring adequate compensation. Virginia Code § 10.1-1704 requires that "there is substituted other real property which is (a) of at least equal fair market value, (b) of greater value as permanent open-space land than the land converted or diverted and (c) of as nearly as feasible equivalent usefulness and location for use as permanent open-space land as is the land converted or diverted." FERC can and should ensure compliance with this standard, if any easements are converted for this project.

Avoid Critical Habitats

In our previous scoping comments, the Conservancy requested that ACP avoid impacts to Critical Habitats for Conservation. In that letter we described Critical Habitats as designated areas with high biodiversity value, consistent with the definitions of Critical Habitats as outlined in the International Finance Corporation Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources. For the Central Appalachians, these habitats include very large and diverse patches of intact forest, ecologically significant cave and karst systems, and rare, threatened and endangered species known to occur in less than 10 locations globally. We made these datasets publicly available so that they may be used in siting decisions and impact assessment.

Forest

CO97-3

Our June 2016 scoping comments noted that three areas containing large patches of intact forest classified as critical habitats are avoided by what is now the AP-1 mainline. This is consistent with The Conservancy's request to avoid impacts to critical habitats.

In the DEIS, FERC concludes: "that the primary impact from construction and operation would be on forested areas crossed by ACP and SHP, including the removal of approximately 6,800 acres of forested vegetation (includes 3,800 acres of permanent impacts) and fragmentation of interior forest blocks". We note that page ES-10 cites different figures and request this discrepancy be resolved. Nonetheless, The Conservancy concurs with FERC's conclusion that the project would adversely affect a significant area of natural forest habitat, and appreciates FERC's effort to ensure that adequate compensatory mitigation is provided for these impacts. We particularly appreciate the thorough description of interior forest fragmentation and edge effects in *Section 4.5.6 Habitat Fragmentation and Edge Effects*.

CO97-3 Comments noted. Section 4.4 and other appropriate sections of the EIS have been updated with vegetation impact calculations based on a 50-foot-wide permanent right-of-way for the AP-1 mainline. Section 4.5.6 on interior forest fragmentation has also been revised.

CO97-3 (cont'd)

Effects of forest fragmentation are extensively described within a very large body of peer reviewed research. Haddad et al (2015) synthesized fragmentation experiments spanning multiple habitats and scales, five continents, and 35 years, and concluded that habitat fragmentation reduces biodiversity by as much as 75%.

We also concur with the finding in *Section 4.4.3 General Impacts and Mitigation on Vegetation Resources* that although areas where no permanent facilities or roads would occur may be considered temporary impacts, "the clearing and restoration of forested areas would be a long-term to permanent impact because of the extended length of time it takes trees to grow to maturity from seedlings or saplings planted as part of the revegetation process."

We question the note in *4.4.10 Conclusion* **"**that the operational impacts calculated are based on a 75-foot-wide permanent right-of-way for AP-1, and we recommend in section 2.2.1 that Atlantic only maintain a 50-foot-wide permanent right-of-way; therefore, impacts are currently overestimated." While The Conservancy fully supports FERC's recommendation that Atlantic maintain only a 50' permanent right-of-way, we find that the associated reduction in impacts to upland forest to be marginal because the long term to permanent impact initiated by clearing of forest vegetation would only be affected by a reduction in the construction right-of-way and associated temporary workspaces (ATWS).

CO97-4

Recommendation 37 states: "Prior to the close of the draft EIS comment period, Atlantic and DTI shall file with the Secretary a revised fragmentation analysis . . ." Atlantic's Supplemental Filing of February 24, 2017 APPENDIX D Revised Forest Fragmentation Analysis appears to respond to this recommendation; however, we find the response incomplete. Appendix D consists solely of a data table, presumably as specified in part d. The total area of 12,139 acres "Indirectly Affected" is significantly lower than what The Conservancy calculated in a similar analysis. We assume that the reason for the discrepancy is that while Atlantic included a 300' buffer in its calculation to account for new edge, it did not calculate "*areas of remaining forest immediately adjacent to one or both sides of the new corridor that would no longer be classified as interior forest due to the new, project-related disturbances.*" We understand this language to mean the area of forest which, due to the fragmentation of the patch, no longer consists of interior forest. We are unable to verify our assumption regarding the source of the discrepancy because there is no text accompanying the data table explaining the methods used to calculate acreage impacts.

We note that the filing does not include discussion of "how the creation of forest edge or fragmentation would affect habitat and wildlife, including potential impacts on federally listed threatened and endangered species and migratory birds." Neither does it "[d]escribe measures that Atlantic and DTI will implement to avoid, minimize, or mitigate impacts on interior/core forest habitat." (paragraph e.), nor include any reference to applicable state and federal agency datasets, as specified in paragraph a. It is our understanding that the Commonwealth of Virginia has developed a methodology for calculating impacts to forest that is consistent with FERC's recommendation. The Conservancy supports the use of the Commonwealth's methodology to determine appropriate mitigation for forest fragmentation and loss of interior forest habitat.

The Conservancy holds that the public should have an opportunity to review mitigation measures for impacts to interior/core forest. Given that the Revised Forest Fragmentation Analysis is currently incomplete, **we reiterate our request that FERC extend the comment period for the DEIS or draft a Supplemental DEIS for public review.**

CO97-5

The Conservancy finds that the DEIS fails to address impacts to old growth forest. TABLE 1.3-1

CO97-4 Section 4.5.6 on interior forest fragmentation has been updated.

CO97-5 Section 4.4.2 has been revised to include a discussion of old growth forests. Additional information can be found in section 4.8.1.1.

CO97-5 (cont'd) *Environmental Issues and Concerns Raised During Public Scoping for the Atlantic Coast Pipeline and Supply Header Project* indicates that impacts to old growth forests are covered under *Section 4.4.4*, however this section addresses noxious weeds and not the destruction of old growth forest. We were unable to include Old Growth forests within our Critical Habitats assessment because there is no comprehensive database of old-growth stands, however old-growth forests in the eastern U.S. are clearly "highly threatened and/or unique ecosystems" which is one of the criteria for critical habitats promulgated under IFC Performance Standard 6.

CO97-6 In its supplemental filing, dated March 10, 2017 (Appendix B), Atlantic notes that preconstruction timber surveys in areas to be impacted by construction activities will document old growth trees and stands on both the Monongahela National Forest (MNF) and George Washington National Forest (GWNF) and that information will be shared with the US Forest Service prior to tree removal. This practice would not ensure consistency with each Forest's Land and Resource Management Plan which specify management direction for old growth, including restrictions on harvesting. The supplemental filing also states: "No old growth forest is known to occur in the Project area based on a review of the GWNF Management Plan and Region 8 Guidelines for GWNF South Half GIS data." In fact, very little existing old growth has been verified on the ground of the GWNF, thus Forest Plan direction that old growth will be surveyed and subsequently evaluated during project analysis to determine its suitability for harvest. The Conservancy supports FERC's recommendation that "Prior to the close of the draft EIS comment period, Atlantic should file with the Secretary and FS a revised BE that . . . d. provides start and end milepost and acreage of impacts on old growth forests according to the MNF and GWNF old growth forest definition;" Again, since this information has yet to be provided, **The Conservancy reiterates our request that FERC either formally extend the comment deadline or issue a supplemental DEIS for public review when the requested information has been submitted and deemed complete**.

CO97-7 Just as old growth has not been inventoried extensively on the two National Forests, even less is known about old growth status on private lands. The DEIS states that "Results of . . . timber cruises would be used to develop a *Timber Extraction Plan*, which would identify areas of old growth impacted by construction activities. Construction of ACP would convert mature and/or old growth forests to grass/forbs habitat, while the balance of the acres would be converted to an early successional condition". However, there are no recommendations in the document regarding avoidance and minimization of impacts to old-growth forest on private lands. **The Conservancy requests that FERC ensure that the National Forest's old growth definitions are used to inventory old-growth forest on private lands, and that Atlantic demonstrate avoidance and minimization measures for all old-growth forest.**

Intact Floodplains

CO97-8 The Conservancy appreciates that the DEIS makes note of the special value and relative scarcity of intact floodplain forest in its discussion of forest resources. We also note that the use of horizontal directional drilling (HDD) will avoid impacts to floodplain forest at many stream crossing, which is consistent with requests we made during scoping. We reiterate our request **that FERC require ACP to avoid and minimize removal of intact floodplain forest by reducing the construction ROW through these forests to the 50' even if the floodplain forest is not a delineated wetland**.

River health depends on a wide array of processes that require dynamic interaction between the water and land through which it flows. The Conservancy created the Active River Area (ARA) framework to explicitly consider the spatial area necessary for natural processes and disturbance regimes to occur, and thereby allow the inherently dynamic formation, modification, and maintenance of aquatic and riparian habitat (Smith et al, 2008). The ARA framework is incorporated into the Conservancy's Critical

CO97-6 FS response: At this time, Atlantic has not completed the old growth survey using the criteria in Forestry Report R8-FR 62 (June 1997). An estimate of impacts on old growth forest is provided in Section 4.4.8-Vegetation. Atlantic has not conducted its preconstruction timber surveys. The survey information will be used in the ROD to assess consistency with the GWNF LRMP.

CO97-7 Atlantic has committed to conducting old growth surveys using the criteria in Guidance for Conserving and Restoring Old Growth Forest Communities on National Forests in the Southern Region (FS, 1997). Section 4.4.8 has been updated to incorporate this commitment.

CO97-8 Comment noted.

CO97-8 (cont'd) Habitats assessment through the inclusion of zones within the ARA adjacent to rivers identified as conservation priorities that are in natural vegetative cover (see further description of priority streams and rivers below). This area may include less active terraces and high slope riparian land which does not usually receive overbank flooding, but which contribute to other important riverine processes such as shading, input of woody debris, sediments, and nutrients which influence river health. (The Nature Conservancy, 2009).

Rare, Threatened and Endangered Species

CO97-9 In the DEIS FERC states: "Based on these [Agency] consultations, current information, and assuming implementation of our recommendations, we determined that construction and operation of ACP and SHP *may affect* and is *likely to adversely affect* five federally listed species (Indiana bat, northern long-eared bat, Roanoke logperch, running buffalo clover, and Madison Cave isopod)".

FERC recommendation 45 states: "Atlantic and DTI shall not begin construction of the proposed facilities until:

a. all outstanding biological surveys are completed;
b. the FERC staff complete any necessary Section 7 consultation with the FWS;
c. Atlantic and DTI have received written notification from the Director of OEP that construction and/or use of mitigation (including implementation of conservation measures) may begin.

FERC appears to have determined that these impacts will occur and can be mitigated for, however there is no explanation given as to why the project should proceed given these impacts, nor evidence to support the assumption that they can be mitigated for. We find this to be a serious failing of the document and believe this recommendation is more properly a prerequisite for issuance of a Certificate of Convenience and Necessity, rather than for commencing construction.

In contrast, recommendations 46 through 65 more appropriately recommend action to assess impacts and determine potential remedies for various special status species prior to the close of the draft EIS comment period. While we are unclear how public review and comment would occur on such submissions, we believe that requiring submission of this information prior to the development of a Final EIS is essential to ensuring full implementation of the mitigation hierarchy, including avoidance of impacts. **The Conservancy commends FERC for its efforts to implement the mitigation hierarchy and reiterates our request that FERC either formally extend the comment period for the DEIS or provide a supplemental DEIS for public review when the requested information has been submitted and deemed complete**.

Cave and Karst Systems

CO97-10 In our June 2016, scoping comments, The Conservancy requested "that FERC use the best available data, expert consultation, and field inventory to identify and avoid impacts to biologically significant cave systems along this an all other mid-Atlantic shale gas pipeline routes." Overall, we find that FERC has been thorough in its analysis of impacts to these systems, and we appreciate the treatment of karst terrain not only as a substrate that can cause construction and operational challenges to the project but also as a vulnerable and important habitat for subterranean species.

The DEIS finds that ACP would cross 32.5 miles of karst terrain and SHP would cross 1.1 miles of land that has the potential to contain karst features. In *Section 4.1.7*, FERC concludes that "While small, localized, and temporary impacts on karst features, water flow, and water quality could occur, the impacts would be minimized and mitigated through Atlantic's and DTI's plans." In its February 23, 2017 letter Re: Atlantic Coast Pipeline, Karst Terrain Assessment, Construction, Monitoring, and Mitigation

CO97-9 Section 4.7.1 recommends that the construction of the projects be conditioned upon the completion of all outstanding biological surveys, any necessary section 7 consultation with the FWS, and Atlantic and DETI's receipt of written notification from the Director of OEP that construction and/or use of mitigation (including implementation of conservation measures) may begin.

CO97-10 Comment noted.

COMPANIES/ORGANIZATIONS COMMENTS

CO97 – The Nature Conservancy (cont'd)

CO97-10 (cont'd) Plan – Review, VDCR notes that "DCR-DNH has reviewed the Karst Terrain Assessment, Construction, Monitoring, and Mitigation Plan (Karst Mitigation Plan). The overall plan is comprehensive and reduces the potential risk posed by the Atlantic Coast Pipeline to karst resources." The Conservancy hereby incorporates by reference the additional recommendations in this letter.

CO97-11 On page ES-4, FERC recommends that "Atlantic consult with the VDCR to determine potential impacts to the Cochran's Cave Conservation Site or Cochran's Cave No. 2, and if required, identify and adopt a pipeline route that would avoid impacts on the cave and conservation site." In its February 23 letter Re: Atlantic Coast Pipeline, Cochran's Cave Conservation Area and Moffett Lake Investigation Update – Review, VDCR states: "While DCR-DNH continues to recommend the avoidance of the Cochran's Conservation Site entirely, the investigations underway and ongoing adjustments to the details of the alignment have reduced the likelihood of a significant impact to the cave or its associated biological and hydrological resources." We note that in its supplemental filing dated March 24, 2017 (which appears to duplicate a March 10, 2017 filing), Atlantic fails to report the recommendation by DCR-DNH to avoid the conservation site, quoting only the phrase regarding reduction of the likelihood of a significant impact. **The Conservancy supports the recommendation by DCR-DNH to avoid the Cochran's Cave Site and requests that FERC require Atlantic to develop an alternative route that would entirely avoid impacts to it.**

Consider Additionality of Impacts from Climate Change

CO97-12 In previous scoping comments, the Conservancy described our efforts to advance species conservation in the face of a changing climate (Anderson et al. 2014, Anderson et al. 2012; see here for related work) that focus on inherent site resilience. The activity of traversing a relatively unfragmented area with a permanently maintained clearing diminishes the connectedness and therefore resiliency of the site. We requested then that the DEIS fully consider the loss of site resilience to climate change consequent to an interruption in connectedness within large patches of intact habitats. **The Conservancy requests that a supplement to the DEIS be prepared to address how climate change will amplify environmental impacts from this project, particularly impacts to wildlife and wildlife habitat including forests.**

Specify Mitigation Actions for Migratory Bird Habitat

CO97-13 *Section 4.5.3.5 General Impacts and Mitigation for Migratory Birds* of the DEIS states that "Atlantic and DTI would provide mitigation to compensate for remaining impacts on migratory birds. In addition to their compensatory wetland mitigation, Atlantic and DTI are in ongoing consultations with federal and state agencies regarding compensatory mitigation to offset impacts specific to migratory birds. Atlantic and DTI would quantify the mitigation needed to offset these impacts via a Habitat Equivalency Analysis (HEA). The HEA would be provided in Atlantic's and DTI's final *Migratory Bird Plan*."

FERC makes specific recommendations regarding direct impacts to nesting birds (35) and to rookeries (36), followed by a recommendation regarding forest fragmentation (37). The Conservancy acknowledges that impacts to migratory bird habitat will have substantial overlap with impacts to interior forest. It is our assumption that compensatory actions taken to restore habitat for migratory birds will count towards the larger set of actions taken to compensate for losses of interior forest. If this is correct, then we suggest that Atlantic and DTI complete the HEA in order to evaluate the effectiveness of the forest fragmentation mitigation measures. **The Conservancy requests that FERC include a specific recommendation regarding the completion of a migratory bird HEA in the Supplemental Draft or Final EIS.**

CO97-11 The text in section 4.1.2.3 has been revised to include the latest discussions with the VDCR regarding Cochran's Cave Conservation Site.

CO97-12 The EIS was prepared in accordance with NEPA, CEQ guidelines, and other applicable requirements. The EIS is consistent with FERC style, formatting, and policy regarding NEPA evaluation of alternatives and different types of impacts, including cumulative impacts.

As noted in section 4.13.3.5, clearing and grading of the construction rights-of-way for ACP and SHP and other nearby projects would result in loss and fragmentation of wildlife habitat. There are over 8.2 million acres of land area, much of which provides habitat for wildlife, within the HUC-10 watersheds comprising the geographic scope of influence for these resources. While herbaceous vegetation and adjacent edge areas do provide habitat for numerous wildlife species more suited to human-caused modifications, this different suite of species would utilize the habitats converted from forested areas that formerly may have been inhabited by certain forest dwelling migratory bird species, for example. Due to the prevalence of similar habitats in adjacent areas, the permanent conversion of forested lands would not be a significant impact on wildlife resources within the proposed project area.

CO97-13 HEA are a means to determine the amount of compensatory restoration required to provide services that are equivalent to the interim loss of natural resource services following an injury. HEAs are used by the FWS as one of many conservation measures that may be used to mitigate impacts on migratory birds and threatened and endangered species; it is important to note that HEAs are a voluntary measure. Atlantic and DETI will no longer be conducting an HEA with the FWS for ACP or SHP.

Although we agree that compensatory mitigation is one way to offset the impacts resulting from forest loss and fragmentation, there are other measures described in sections 4.4.6 and 4.5.6 that would reduce fragmentation and edge effects. Additional measures would also be applied on NFS lands as discussed in sections 4.4.8 and 4.5.9. Atlantic is required to obtain the necessary permits and authorizations required to construct and operate the project. As such, to the extent the state has regulatory authority and permitting jurisdiction for these features, Atlantic would consult with the appropriate state agencies. These state agencies would have the opportunity to review Atlantic's and DETI's proposed crossings during the permitting process and, if necessary, identify additional mitigation measures beyond those proposed.

Reduce Risks of Sedimentation, Erosion, and Slope Failure

Section 4.1.4.2; Geologic Hazards, Landslides states that "In West Virginia, 73 percent of the AP-1 mainline route would cross areas with a high incidence of and high susceptibility to landslides. In Virginia, approximately 28 percent of the AP-1 mainline route would cross areas with a high incidence of and high susceptibility to landslides (Highland, Bath, Augusta, and Nelson Counties); [and] 21 percent would cross areas with a moderate incidence of and high susceptibility to landslides."

In *Section 4.1.7* FERC concludes: "constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur. . . Adherence to DOT's pipeline safety regulations would minimize the risk of landslides in the project area. However, Atlantic and DTI are currently working to provide documentation of the likelihood that their proposed design features and mitigation measures would minimize the risk of landslides in the project area."

CO97-14

We note that while the referenced DOT pipeline safety regulations reduce the risk of damage to a pipeline from a landslide, those regulations do not claim to address the risk of landslide occurrence. Overall, while the DEIS takes serious consideration of steps that may be taken to protect the integrity of the pipe, it fails to consider the impacts to stream and vegetation that could occur as a result of mass sediment movement. The Conservancy is seriously concerned about the possible impacts to vegetation and stream resources that could result from project-induced landslides, such as failures of cut slopes or fill slopes, or the projects' alteration of surface and subsurface drainage in areas of construction and adjacent natural slopes along the pipeline and access roads.

We have met with Atlantic to learn about their efforts to manage landslide and sedimentation and erosion risk, and believe that the company is taking that risk seriously and developing an effective risk management process. At the same time, as we noted in those discussions and consistently in our scoping comments, evidence of the efficacy of the proposed control measures in this terrain and climate is limited.

We request that a supplement to the DEIS address potential impacts to vegetation and aquatic habitats from landslides and sedimentation and erosion during both normal and high intensity rain events. We further request that the applicant provide evidence – including examination of all available records maintained by state and federal regulators and anecdotal evidence pertaining to the sufficiency of landslide risk control measures for recent pipeline construction projects in VA and WV - that proposed strategies to reduce landslide risk will be effective given the project scale, terrain, and climate.

Conclusion and Summary

CO97-15

The Conservancy reiterates it's overarching finding that there is a need for public review and thorough analysis of the information that FERC staff have requested be submitted prior to the end of the DEIS comment period, and that much of that information has not been provided in the supplements filed by Atlantic. **We strongly recommend that FERC either formally extend the Comment Period for the DEIS or prepare a Supplemental DEIS to allow public review and comment on the information that has yet to be submitted in response to 36 recommendations by FERC staff.**

In addition, we request that FERC direct ACP to:

- Develop a buildable route variation that avoids VOF's conservation easements, and that FERC perform and make available for public review the necessary analyses to determine that conversion of VOF easements is the environmentally preferable alternative;
- Avoid impact to all Critical Habitats, including Cochran's Conservation Site and old-growth forest

CO97-14 See the response to comment CO55-81.

CO97-15 See the responses to comments CO97-1 through CO97-14.

stands on both public and private land;

CO97-15 (cont'd)

- Appropriately compensate for impacts to intact forest, including fragmentation effects such as the creation of new forest edge and newly created forest fragments that no longer meet minimum size criteria for forest cores;
- Address how climate change will amplify environmental impacts from this project, particularly impacts to wildlife and wildlife habitat including forests;
- Include a specific recommendation regarding the completion of a migratory bird HEA in the Supplemental Draft or Final EIS;
- Assess potential impacts to vegetation and aquatic habitats from landslides and sedimentation and erosion during both normal and high intensity rain events, and;
- Provide evidence that proposed strategies to reduce landslide risk will be effective given the project scale, terrain, and climate.

Thank you for the opportunity to provide comments to FERC on this important issue. If you have any questions about these comments, please contact Judy Dunscomb, Senior Conservation Scientist at jdunscomb@tnc.org or (434) 951-0573.

Sincerely,

Bill Kittrell	Thomas Minney	Katherine D. Skinner
Acting Virginia Executive Director	West Virginia Executive Director	North Carolina Executive Director

Enclosures

Cc: Elizabeth Gray, Mid-Atlantic Division Director, The Nature Conservancy
Nels C. Johnson, North American Energy by Design Project Director, The Nature Conservancy
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Pam Faggert, Vice President & Chief Environmental Officer, Dominion Resources

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COMPANIES/ORGANIZATIONS COMMENTS

CO98 – Earthworks Oil and Gas Accountability Project

April 6, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

RE: Docket Nos. CP15-554-000, -001; CP15-555-000; and CP15-556-000. Comments on the Draft Environmental Impact Statement, Atlantic Coast Pipeline and Supply Header Project.

Dear Deputy Secretary Davis:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) prepared by the Federal Energy Regulatory Commission (FERC) on the Atlantic Coast Pipeline (ACP) and related Supply Header Project (SHP).

Please accept these comments on behalf of Earthworks, a national nonprofit organization committed to protecting communities and the environment from the impacts of mining and energy development while seeking sustainable solutions. For more than 25 years, we have fulfilled our mission by working with communities and grassroots groups to reform government policies, improve corporate practices, influence investment decisions and encourage responsible materials sourcing and consumption.

Earthworks' comments focus both on the general approach and scope of the DEIS and on specific air quality considerations related to ACP and SHP. Since 2015, we have conducted over 650 individual investigations into air emissions from oil and gas facilities in 16 states using an Optical Gas Imaging camera (specifically a Forward Looking Infrared GF320). This includes three facilities in Virginia owned and operated by Dominion Energy, the videos of which we are submitting along with these comments.

Earthworks is also submitting along with these comments our 2017 report *Permitted to Pollute: how oil & gas operators and regulators exploit clean air protections and put the public at risk.*[1] To conduct this in-depth investigation, we researched the permits, plan approvals, operators' estimated and reported emissions, and conducted air pollution sampling at three natural gas facilities in southwestern Pennsylvania. Some of our key findings are directly related to the gaps in the DEIS for ACP and SHP.

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Z-2215

1. The DEIS is incomplete

CO98-1

The current DEIS was prepared and released to the public for comment on December 30, 2016. However, throughout January and February 2017, Dominion Transmission, Inc. (Dominion) filed dozens of new documents supplementing the information that is reviewed in the current DEIS.

These new submissions to FERC contain important information on environmental issues and are integral to any conclusions contained in an Environmental Impact Statement. Yet none of these documents were available at the time that FERC issued the DEIS, and therefore not subject to the current public review within the current comment period.

The omission of several documents and analyses in the DEIS implies a "just trust us" stance by FERC that is inappropriate for a public agency. By allowing submission of documents after issuance of the DEIS, FERC is effectively depriving the public of their legal right to full information related to the proposed projects. The public is also deprived of the opportunity to contribute information on any and all aspects of the project, which FERC is required to consider before issuing a final Environmental Impact Statement (EIS).

Earthworks agrees with the motion filed with FERC by Wild Virginia, Friends of Nelson, and Heartwood on March 3, 2017.[2] The DEIS currently under review lacks complete information and as a result, FERC, other agencies, and the public can not fully analyze the environmental impacts of the proposed projects.

Given this fact, FERC should withdraw the DEIS, revise it, and release a revised DEIS or supplemental DEIS for public comment. FERC should not proceed with the development and issuance of a final EIS until a complete DEIS reflecting all documents submitted to FERC by Atlantic Coast Pipeline, LLC (Atlantic) and Dominion is issued and subject to full public review, in accordance with the National Environmental Policy Act (NEPA).

2. FERC has not fully analyzed and considered the no-action alternative

CO98-2

FERC has failed to properly consider the no-action alternative in the DEIS for the Atlantic Coast Pipeline, instead providing only a cursory mention based on a faulty premise.

Under NEPA, the purpose of analyzing alternatives, including no action, is to "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public."[3] Unfortunately, in the current DEIS, FERC has abrogated its responsibility to fully assess environmental costs and to weigh them against the purported benefits of the project discussed throughout the remainder of the DEIS.

Instead, FERC briefly states (on p. ES-13) that because the no-action alternative "would not be able to meet the purpose of ACP and SHP, we conclude it is not preferable to the proposed action. We also conclude alternative energy sources, energy conservation, and efficiency are not within the scope of this analysis because the purpose of ACP and SHP is to transport natural gas."

This conclusion is based on the effect that the no-action alternative would have on the goal of the proposed projects (i.e., to deliver natural gas), rather than its effect on the environment and public health as required under NEPA. FERC should therefore supplement this DEIS with a comprehensive

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Z-2216

CO98-1 See the response to comment CO6-1.

CO98-2 See the response to comment CO55-6.

CO98-2 (cont'd)

no action alternative analysis accounting for the environmental and public health harms that would be avoided by not permitting the ACP and SHP projects.

A full no-action alternative analysis is particularly important given the sheer size and complexity of the ACP. Stretching for over 600 miles and including 17 new or modified transmission and distribution facilities, ACP will have wide-ranging impacts on air, water, land, forests, and wild species in three states. FERC has recognized the potential for both temporary and permanent environmental impacts—it is therefore unacceptable to dismiss the no-action alternative because the project is designed to supply natural gas.

3. FERC should recognize current research on the need for ACP

CO98-3

The ACP is one of several pipeline projects proposed for the same region of West Virginia and Virginia. Yet FERC does not have a process in place to assess whether the build-out of a particular natural gas pipeline in a region is even necessary. If it is not, the severe environmental impacts of ACP cannot be justified by the need for additional natural gas transmission that would supposedly be met through the project.

Notably, a recent study by the Institute for Energy Economics and Financial Analysis (IEEFA) concluded that FERC is facilitating the overbuild of pipelines, in turn posing significant financial risks to ratepayers and project investors.[4]

Because pipeline and compressor station projects can take years to complete, the capacity proposed in applications is based not only on current conditions, but also on projections of future increases in gas production and demand.

A recent analysis of natural gas demand by Synapse Energy Economics, Inc. concluded that anticipated natural gas supply capacity on existing and upgraded infrastructure in Virginia, West Virginia, and North Carolina is sufficient to meet maximum natural gas demand from 2017 through 2030. In other words, there is no need for ACP (nor for the Mountain Valley Pipeline) to meet projected demand.[5]

Further, details on the source of actual demand for the gas transported by ACP are limited. However, it is clear that much of the reported demand is directly tied to contracts signed with subsidiaries of the pipeline owners (for example, Duke Energy companies have booked 59 percent and a Dominion subsidiary has booked 20 percent).[6]

4. Air emissions in the DEIS are likely underestimated

CO98-4

FERC's assertions of negligible impacts on air quality are based on the faulty premise that estimates in a proposal will not exceed actual emissions. This assumption has no real basis, since pollution sources in the oil and gas industry are not monitored continuously (e.g., a reading every several seconds or few minutes) or at fenceline (i.e., using monitors along the perimeter of a facility).

Yet this type of monitoring is the only way to capture actual emissions, rather than estimates by operators; emissions that do not originate from stacks; and emissions that may be omitted from routine reporting, for example from equipment malfunctions.[7]

A recent study of methane emissions from oil and gas operations in the Barnett Shale region of Texas found that actual measurements of emissions were 90 percent larger than the estimates

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CO98-3 See the response to comment CO46-1.

CO98-4 Fugitive emissions, which included sources such as valves and pig launchers/receivers, are provided in section 4.11.1-3 under "Operation Emissions." The PADEP's actual emissions for the JB Tonkin and Crayne Compressor Stations exceed levels provided in table 4.11.1-9 because the emissions provided in this table are for the proposed modifications only, not the existing station. Emissions for the existing stations are what is provided by Pennsylvania's eFACTS website.

CO98-4 (cont'd)

submitted by operators to the EPA's Greenhouse Gas Inventory.[8]

Another recent study measured methane emissions coming from 114 gas gathering and 16 gas processing plants in 13 states, concluding that the facilities lost methane at an average rate of nearly 0.50% (with wide variation across facilities) and that most emissions were attributable to normal operations.[9] Following direct measurements, researchers found that lost methane was much higher than figures that were based on estimates and reported to the EPA Greenhouse Gas Inventory.

For the purpose of obtaining permits, operators forecast levels of pollution, known as the Potential to Emit (PTE). Operators perform their own PTE calculations based on manufacturing specifications and emissions factors developed by the US Environmental Protection Agency (USEPA). Earthworks' recent analysis of compressor and processing facilities in Pennsylvania found that operators can "mix and match" emissions factors in order to calculate lower PTEs.

PTEs are generally expected to be higher than actual emissions since they are based on the assumption of operations occurring all day, all week, and all year (i.e., on a 24/7/365 basis). However, the emissions estimates included in the DEIS (Table 4.11.1-9) for the JB Tonkin station are *lower* than what Dominion reported to the Pennsylvania Department of Environmental Protection (PADEP) in 2015 for nitrogen oxide (NOx) and volatile organic compounds (VOCs), as well as half of actual emissions of carbon dioxide (CO_2). In addition, the estimated NOx emissions in the DEIS (Table 4.11.1-9) for the Crayne Compressor station are half the level reported by Dominion to the PADEP in 2015.

These higher emissions levels, included in PADEP's online database (eFACTs) reflect operations that are occurring prior to the significant expansions planned for the JB Tonkin and Crayne compressor stations as part of SHP. If these facilities are expanded with regard to capacity, number of engines, and gas throughput, it is almost certain that actual emissions will far exceed the projected emissions included in project applications and used as the basis for the DEIS.

The emissions estimates included in the DEIS are incomplete. Atlantic and Dominion have not provided projected emissions data for the 10 pig launcher/receiver sites and 37 valve sites planned for several points along the transmission route or to be co-located with compressor stations. However, these types of equipment can be considerable sources of fugitive and routine emissions.

Importantly, pig receivers and launchers located along pipelines are used to remove and separate liquids—a process that results in the venting of hydrocarbons into the air.[10] Notably, PADEP's proposed permit requirements for the control of methane and VOCs include pigging operations.[11]

5. The DEIS lacks enforceable monitoring and inspection standards

CO98-5

Inspection and monitoring of oil and gas facilities is essential to ensuring that air emission limits are followed. The only reference to this consideration is a cursory, general statement (Section 2.5.2) that, "Atlantic and DTI [Dominion] would employ EIs [Environmental Inspectors]" and that, "FERC would conduct its own independent monitoring and inspection of the projects." In addition, FERC states (Section 2.5.3) that, "Atlantic and DTI would fund a third-party contractor, to be selected and managed by FERC staff, to provide environmental compliance monitoring services for the projects."

In effect, Atlantic, Dominion, and FERC are taking a "just trust us" stance—an approach that is wholly inadequate for a DEIS issued by a federal agency. In turn, the lack of specific monitoring and

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CO98-5 The commentor incorrectly implies that FERC would monitor air quality for ACP and SHP. For clarity, The Commission has siting authority for ACP and SHP and would not monitor operational air quality. Air quality, including monitoring, reporting, and enforcement actions are the responsibility of the states and the EPA. Air quality regulations, as outlined throughout section 4.11.1, describe the applicable monitoring and reporting requirements for the ACP and SHP compressor stations. The reduction of VOC emissions is unrelated to the horsepower increase, but is the result of a change in the method of fugitive emissions reporting.

CO98-5 (cont'd)

inspection and monitoring standards could result in air emissions beyond stated levels going unaddressed for long periods of time. This will place the environment and the public at risk of air quality impacts from the ACP and SHP that could be prevented through inspections and monitoring.

6. FERC's "minor source" presumption for compressor stations is questionable

CO98-6

As discussed above, there is significant reason to believe that the emission projections in the DEIS are underestimated. Given this, FERC should not presume that West Virginia, Virginia, and North Carolina will not have to contend with ACP facilities as major emission sources or issue Title V permits.

In the realm of air pollution regulation, "major" and "minor" source designations carry significant consequences. Minor source facilities are subject to less stringent recordkeeping and emissions tracking requirements than major sources. This means limited oversight by regulators, reduced documentation and transparency of operations, and weaker protections for the public—but lower costs and workloads for operators.

Because of this, oil and gas operators make a significant effort to avoid major source designation. Earthworks' research on compression and processing facilities in Pennsylvania identified a pattern in which operators seek multiple "minor modification" permits on a frequent basis.[12] This practice allows for considerable expansion of facility capacity and re-working of PTE calculations without ever having to apply for a Title V permit.

The DEIS indicates the potential for project applicants to change and recalculate their emissions to avoid major source designation. For example, in Resource Report 9 on Air and Noise Quality submitted with the project application, Atlantic and Dominion state (Table 9A-2-9) that Compressor Station #2 in Buckingham County, Virginia, which includes the co-located Woods Corner Metering and Regulation Station, would emit 57.6 tons per year (tpy) of VOCs. However, in the DEIS (table 4.11.1-7), the same facility is shown to have the potential to emit only 32.7 tpy of VOCs.

This downward projection in VOC levels occurred alongside an upward projection in the total volume of carbon dioxide equivalent (CO_2e) emissions, which is stated in the DEIS at more than 10 percent higher than what the project applicants claimed in Resource Report 9. This change likely reflects the projection of larger capacity at Compressor #2 than what was stated in the initial project application. Yet VOC levels were revised down. (In addition, Hazardous Air Pollutants, or HAPs, levels remain the same.)

In the DEIS (p. 4-442), FERC states that, "ACP's proposed new Compressor Stations 1, 2, and 3 would be subject to a PSD [Prevention of Significant Deterioration] major source threshold of 250 tons per year (tpy)." FERC's position that 250 tpy of criteria pollutants is a *threshold* runs counter to EPA's intent in establishing National Ambient Air Quality Standards (NAAQS). For the six NAAQS pollutants, the minor/major "default" threshold established by EPA is 100 tpy for areas in attainment, and lower for pollutants in non-attainment areas.[13]

FERC's position appears to be based on a narrow reading of the list of named "major stationary source" in federal law requiring a PSD analysis if they emit over 100 tpy of criteria pollutants, which does not specifically include oil and gas facilities.[14]

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CO98-6 The draft EIS does not provide conflicting major source thresholds for Title V and PSD permits. Earthworks incorrectly states that the PSD major source threshold for PSD is 100 tpy for compressor stations. Earthworks is confusing two separate permits. For attainment areas, the major source thresholds are 100 tpy and 250 tpy for Title V and PSD permits, respectively. This is correctly stated throughout the draft EIS. As stated in section 4.11.1.2 under the Title V Operating Permit discussion, a U.S. Supreme Court ruling (discussed in the EIS) found that a facility may not be required to obtain a Title V permit based solely on GHG emissions.

CO98-6 (cont'd)

However, this approach is inconsistent with how states currently apply major source requirements to compressor stations, processing plants, and other oil and gas sector facilities. Pennsylvania, Ohio, New York, and other states have issued Title V permits for facilities based on the 100 tpy threshold, using 250 tpy as a "ceiling" rather than a "floor." FERC should do so as well.

It is possible that FERC has stated its position in error, since the DEIS (p. 4-444) also includes the statement that, "The major source threshold level for an air emission source is 100 tpy for criteria pollutants in attainment areas."

The three new compressor stations included in the ACP have the potential to emit CO_2e at levels that should result in major source designation for Greenhouse Gases (GHG), which is 100,000 tpy according to EPA's Greenhouse Gas Tailoring rule.[15] According to the DEIS (table 4.11.1-7), these levels are 283,000 tpy for Compressor #1; 324,000 tpy for Compressor #2; and 129,000 tpy for Compressor #3.

The designation of the stations as minor sources is therefore not based on their actual emissions levels or potential to impact air quality—but solely on a 2014 US Supreme Court ruling that a facility can't be considered a major source by virtue of its GHGs alone.[16] Because Atlantic and Dominion have not, for the purposes of the DEIS, projected emissions of any criteria pollutant above the major source threshold, they have been able to project GHG emission levels far higher than that threshold and still claim minor source designation.

7. The DEIS fails to consider localized air pollution impacts

CO98-7

Nationwide, there is a lack of localized "baseline" air quality data that show conditions prior to oil and gas activities, which makes it difficult to pinpoint the effects of new sources after they begin operating. A 2014 study concluded that in parts of the Marcellus Shale region with air monitors, emissions of some pollutants show an upward trend—but that a lack of monitors in many places obscures the picture and limits air quality management.[17]

There are no USEPA air monitors for the criteria pollutants in close proximity to where the ACP are slated to be constructed or expanded. In the DEIS, air modeling to determine impacts on regional air quality is based on monitoring stations located at considerable distances from the project compressor stations, from about 15 miles up to 230 miles away.

Across oil and gas operations, emissions vary depending on the phase of development and control technologies employed. Pollution can greatly increase during events such as flaring and venting, or due to equipment malfunctions. Industry recognizes the fluctuating nature of pollution from such events; for example, blowdowns can last for several hours but emissions may be most intense during the first 30-60 minutes.[18]

Emerging environmental health research confirms that episodic emission events can cause health impacts immediately or in as little as 1-2 hours, largely because toxicity is determined by the concentration of the chemical and intensity of exposure.[19] As a result, longer-term, average measurements of emissions—what is what the DEIS contains—do not provide a full picture of the types and patterns of pollution that result in the exposure of workers and residents to harmful pollutants.

In addition, *regional* air quality assessments and reporting limited to single facilities can not convey *local* health impacts, particularly in places where many emissions sources are clustered together.

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CO98-7 The FERC does not have authority over state (or federal) agencies to require air quality monitoring. Any requests changing protocol for another agency should be made directly with that agency.

CO98-7 (cont'd)

For example, a 2013 RAND Corporation study showed that in Pennsylvania counties where oil and gas operations are concentrated, NOx emissions were 20-40 times higher than levels equivalent to thresholds for individual "major" emission sources.[20]

As discussed above, the absence of air monitoring by operators and regulators in close proximity to sources of emissions means that actual emissions may be underestimated. In other words, operators can be "in compliance" with air quality standards on the basis of estimated volumes alone, even if they are emitting pollutants at concentrations that harm health.

FERC should state in the DEIS that the West Virginia Department of Environmental Protection, Virginia Department of Environmental Quality, and North Carolina Department of Environmental Quality should require continuous air sampling at the compressor, Metering and Regulation, and pigging stations that are part of ACP and SHP.

Earthworks has long documented the environmental and health impacts of oil and gas development.[21] Research to investigate such connections is rapidly emerging. Physicians, Scientists, and Engineers for Healthy Energy (PSE) recently assessed peer-reviewed literature on the environmental and health impacts of shale gas development, finding that 80 percent of all papers (which total nearly 400) has been published since 2013.[22] In addition, the vast majority of scientific studies show a link between shale gas development and impacts related to health (84 percent); water quality (69 percent); and air quality (87 percent).[23]

In a 2013 study combining air sampling and health symptom surveys in gas development areas across Pennsylvania, participants living near gas wells and compressor stations reported problems that are consistent with the scientifically established health effects of the chemicals detected at their homes.[24] Other recent studies confirm the connection between gas and oil wells and facilities and the health problems experienced by nearby residents, including dizziness, headaches, nausea, fatigue, and nosebleeds, as well as the potential for increased risk of developing cancer.[25]

In 2016, Earthworks sampled the air near Pennsylvania gas compression and processing facilities using Summa canisters that were provided and analyzed by a certified lab using standard EPA methods (TO-15 for Volatile Organic Compounds and TO-3 for methane) and additional analysis for Tentatively Identified Compounds (TICs). In all, more than 70 distinct chemicals were detected at least once.[26]

Earthworks' sampling at two compressor stations detected ten chemicals included in the federal Toxics Release Inventory, including Acetaldehyde, Dichlorodifluoromethane, Ethylbenzene, n-Hexane, Isoprene, Styrene, Toluene, Trichlorofluoromethane, 1,2,4- Trimethylbenzene, and Vinyl Acetate. At one compressor station, two chemicals were detected in higher concentrations than the respective effects screening level (ESL), or the level likely to trigger health symptoms.[27]

The release of health-harming chemicals from compressor stations has been confirmed in other studies as well. Some of the chemicals detected in Earthworks' 2016 sampling (most notably Toluene, Ethylbenzene, Propene, Dichlorodifluoromethane, and Trichlorofluoromethane) were also detected in our previous sampling near compressor stations in Pennsylvania.[28] A similar suite of VOCs was also detected in sampling by the Southwest Pennsylvania Environmental Health Project near a compressor station in New York[29] and by the Agency for Toxic Substances and Disease Registry (ATSDR) at a compressor station in Pennsylvania.[30]

8. The DEIS fails to include a meaningful analysis of the climate change impacts of greenhouse gas (GHG) emissions

CO98-8

It has long been settled that the assessment and disclosure of climate impacts falls squarely within NEPA. On August 1, 2016, the Council on Environmental Quality (CEQ) adopted their "Final Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews" (CEQ Guidance).[31] The CEQ Guidance provides clarity and certainty to permitting agencies and applicants in NEPA reviews that assess the climate change impacts of proposed federal projects.

On February 22, 2017, FERC published a manual formally adopting the CEQ Guidance.[32] Yet, in the current DEIS on the ACP and SHP, FERC applies neither the letter nor the spirit of the CEQ Guidance to its analysis. Instead, a number of the aspects that FERC outlines in this DEIS fly directly in the face of the CEQ Guidance. For this reason, the climate change analysis in the current DEIS fails in several important ways.

First, FERC improperly compares the GHG emissions of ACP to the overall GHG emissions from the states through which the pipeline would cross. For instance, the DEIS states (p. 4-511) that, "Although the GHG emissions from construction and operation of the projects appear large, the emissions are small in comparison to the GHG emissions for each state."

Yet this approach is unequivocally rejected by the CEQ Guidance, which states: "A statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA."[33]

Second, in the current DEIS, FERC misinterprets the application of the CEQ Guidance to current or ongoing NEPA processes. CEQ clearly provided discretion to FERC when, as stated in the DEIS (p. 4-512), "considering whether to apply this guidance to the extent practicable to an on-going NEPA process."

The CEQ Guidance concludes that, "Agencies should consider applying this guidance to projects in the EIS or EA preparation stage if this would inform the consideration of differences between alternatives or address comments raised through the public comment process with sufficient scientific basis that suggest the environmental analysis would be incomplete without application of the guidance."[34]

FERC acknowledges in the DEIS (on p. 4-512) that public commenters have suggested that the GHG analysis for ACP and SHP is incomplete and have urged the agency to consider CEQ's Guidance. To ensure a thorough response to the commenters' concerns, FERC should supplement this DEIS with a meaningful climate change analysis that conforms to the processes and methods described in the CEQ Guidance.

Third, FERC fails to recognize the interconnectedness, especially the indirect climate change effects, of the upstream, midstream, and downstream GHG emissions from increased natural gas production, storage, transmission, and end-use. FERC should quantify the direct and indirect GHG emissions based on available information, including reasonable projections and assumptions. FERC should also consider and disclose the reasonably foreseeable direct and indirect GHG emissions when analyzing the direct and indirect effects of the proposed action.

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CO98-8 Section 4.13.3.12 includes our analysis of climate change. We utilized data and methodologies as established by the EPA, which is tasked with, among other things, setting regulations for GHG. Air quality permits required for ACP must comply with these calculation methods and standards, and Atlantic has done so. While we appreciate the Oil Change International study, assumptions used in the document are not in line with those established by federal agencies, and assumptions were made that may not reflect operational scenarios for the ACP. The study also erroneously implies that FERC assumes that the project would not impact natural gas consumption, ignoring the fact that the EIS discloses GHG emissions from downstream use (combustion) as an indirect impact of the project. Consideration of the Oil Change International study does not change the conclusions in the EIS.

See the response to comment CO55-2.

CO98-8 (cont'd)

Instead, FERC ignores the need for this analysis in the DEIS, stating instead (p. 4-512) that, "Even if we were to find a sufficient connected relationship between the proposed project and upstream development or downstream end-use, it would still be difficult to meaningfully consider these impacts, primarily because emission estimates would be largely influenced by assumptions rather than direct parameters about the project."

This statement is simply untrue. Nearly all GHG analyses are based in some measure on models, estimates, and reasonable assumptions. In addition, even if it were difficult to quantify emissions through these established methods, the CEQ Guidance provides for a qualitative approach: "When an agency determines that quantifying GHG emissions would not be warranted because tools, methodologies, or data inputs are not reasonably available, the agency should provide a qualitative analysis and its rationale for determining that the quantitative analysis is not warranted."[35]

Rather than providing any kind of qualitative analysis, FERC simply abdicates responsibility to provide meaningful climate change information to the public. Even worse, FERC denies the basic causal reality that more pipelines can result in more drilling and production, which in turn results in more GHG emissions. The DEIS states (p. 4-512) that "…the upstream production and downstream combustion of gas is not causally connected because the production and end-use would occur with or without the projects. Therefore, the circumstances in this case do not warrant the inclusion of production or end-use as an indirect effect of the projects."

This conclusion again directly contravenes CEQ's admonition that, "Activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate for a proposed agency action or as a consequence of a proposed agency action, should be accounted for in the NEPA analysis."[36] Indeed, one of the CEQ's chief recommendations in the Guidance is, "…that agencies quantify a proposed agency action's projected direct and indirect GHG emissions."[37]

As discussed above (see comment 2), FERC's analysis of the no action alternative is wholly inadequate. A key omission is consideration of the CEQ Guidance. This is particularly important because the GHG estimates in the DEIS are based on outdated assumption that emissions from shale gas are less than other fossil fuel energy sources—ignoring life cycle analyses that show this is simply not true.

For example, a recent analysis of 200 studies shows that federal estimates of methane emissions from natural gas operations have been vastly underestimated.[38] Other studies show that the so-called climate benefits of natural gas disappear when emissions are assessed over a 20-year timeframe (rather than the 100-year timeframe preferred by the gas industry and many regulators and public officials)—in other words, closer to the window of time still available to avert climate disaster.[39] Another study concludes that increasing reliance on natural gas will have no effect on reducing GHG emissions (and may hinder the growth of renewable energy).[40]

In addition, a new analysis by Oil Change International shows that, due to leakage throughout the ACP and SHP system, the US Environmental Protection Agency's (EPA) New Source Performance Standards (NSPS) adopted in 2016 would reduce methane emissions by 23 percent; in other words, the projects would still cause GHG pollution equivalent to 11 million passenger vehicles.[41] (Making matters worse, the new EPA Administrator has expressed intent to review and potentially rollback the NSPS methane regulation.)

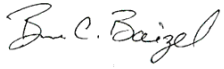
CO98-8 (cont'd)

In closing, Earthworks expresses strong disagreement with FERC's assertion in the DEIS (p. 1-20) that, "Because a natural gas transportation project is proposed before the FERC, it is not likely that it would lead to additional drilling and production." Based on this view, FERC neglects to consider the link between shale gas production in the Marcellus Shale region and the proposed ACP.

The "forcing affect" that a pipeline project has on drilling and production is an appropriate and important subject for analysis in the DEIS. The oil and gas industry is transparent about the need for pipeline capacity to expand in order to boost drilling and production, and has cited insufficient pipeline capacity as a reason why the rate of drilling has slowed in the Marcellus Shale region.[42] In addition, the gas industry has been clear that the regional gas boom's next phase will involve new pipelines to move more gas to market both domestically and internationally.[43] The ACP and SHP projects must be viewed in light of this broader context—FERC's denial of current oil and gas industry realities notwithstanding.

Thank you for your time and attention.

Sincerely,



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[1] Nadia Steinzor, *Permitted to Pollute: how oil & gas operators and regulators exploit clean air protections and put the public at risk.* Earthworks, 2017. http://earthworksaction.org/permittedtopollute

[2] Motion to FERC to rescind and revise DEIS, filed March 3, 2017. http://appvoices.org/images/uploads/2017/03/WildVa-et-al-Motion-to-Rescind-ACP-DEIS-March3-2017.pdf

[3] 40 Code of Federal Regulations, §1502.14, Alternatives including the proposed action.

[4] Cathy Kunkel and Tom Sanzillo, *Risks Associated with Natural Gas Pipeline Expansion in Appalachia: Proposed Atlantic Coast and Mountain Valley Pipeline Need Greater Scrutiny.* IEEFA, 2016.

[5] Synapse Energy Economics, *Are the Atlantic Coast Pipeline and the Mountain Valley Pipeline Necessary? An examination of the need for additional pipeline capacity into Virginia and Carolinas.* Report prepared for Southern Environmental Law Center and Appalachian Mountain Advocates, 2016.

[6] Ibid.

[7] Some facilities regulated under the New Source Performance Standard (NSPS), National Emissions Standards for Hazardous Air Pollutants (NESHAP), Title V, and other CAA programs are required to use continuous emissions monitoring systems (CEMS). However, CEMS are designed primarily for emissions from stacks and don't monitor for all sources, including leaks and fugitive emissions.

[8] Daniel Zavala-Araiza, David R. Lyon, Ramon A. Alvarez, et al. "Reconciling divergent estimates of oil and gas methane emissions," *Proceedings of the National Academy of Sciences,* December 2015.

[9] Anthony J. Marchese, Timothy L. Vaughn, Daniel J. Zimmerle et. al., "Methane Emissions from Natural Gas Gathering and Processing," *Environmental Science and Technology,* August 2015.

[10] "Recover gas from pipeline pigging operations," PRO fact sheet number 505, USEPA. https://www.epa.gov/sites/production/files/2016-06/documents/pigging.pdf

[11] PADEP, framework for methane reductions from the oil and gas sector, General Permit 5A, http://www.dep.pa.gov/business/air/pages/methane-reduction-strategy.aspx

[12] Nadia Steinzor, *Permitted to Pollute: how oil & gas operators and regulators exploit clean air protections and put the public at risk.* Earthworks, 2017. http://earthworksaction.org/permittedtopollute

[13] 42 US Code, § 7479(1).

[14] 40 US Code of Federal Regulations § 52.21, Prevention of significant deterioration of air quality.

[15] 75 Fed. Reg. 31514 (2010), https://www.gpo.gov/fdsys/pkg/FR-2010-06-03/pdf/2010-11974.pdf.

[16] *Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014).

[17] Carlton, A. G.; Little, E.; Moeller, M.; Odoyo, S.; Shepson, P. B. "The data gap: Can a lack of monitors obscure loss of Clean Air Act benefits in fracking areas?" *Environmental Science and Technology,* 2014.

[18] TransCanada. "Blowdown notification." http://www.transcanada.com/docs/Our_Responsibility/Blowdown_Notification_Factsheet.pdf

[19] David Brown, Beth Weinberger, Celia Lewis, and Heather Bonaparte. "Understanding exposure from natural gas drilling puts current air standards to the test." *Reviews on Environmental Health,* 2014.

[20] Ibid.

[21] See "Community Health Survey of Current and Former Residents of DISH, Texas,", 2009. http://earthworksaction.org/publications.cfm?publID=438; "Community Health Survey Results of Pavillion, Wyoming," 2010, http://earthworksaction.org/PR_PavillionHealthSurvey.cfm; *Gas Patch Roulette: How Shale Gas Development Risks Public Health in Pennsylvania,* 2012, http://health.earthworksaction.org; and *Californians at Risk: An Analysis of Health Threats from Oil and Gas Pollution in Two Communities,* 2015, https://www.earthworksaction.org/files/publications/CaliforniansAtRiskFINAL.pdf.

[22] Physicians, Scientists, and Engineers for Healthy Energy, *Toward and understanding of the environmental and health impacts of shale gas development: an analysis of peer reviewed scientific literature, 2009-2015.* Science summary, April 2016. For a complete overview of the scientific literature, see PSE's citation database at https://www.zotero.org/groups/pse_study_citation_database/items

[23] Ibid.

[24] Steinzor, N.; Subra, W.; Sumi, L. "Investigating links between shale gas development and health impacts through a commu-nity survey project in Pennsylvania." *New Solutions*, 2013.

[25] Colborn, T.; Schultz, K.; Herrick, L.; Kwiatkowski, C. "An exploratory study of air quality near natural gas operations." Human Ecol. Risk Assess. 2014; McKenzie, L.M.; Witter, R.Z.; Newman, L.S.; Adgate, J.L. "Human health risk assessment of air emissions from development of unconventional natural gas resources." Science of the Total Environment 2012; L. Blair Paulik, Carey E. Donald, Brian W. Smith, Lane G. Tidwell, Kevin A. Hobbie, Laurel Kincl, Erin N. Haynes, Kim A. Anderson. "Impact of Natural Gas Extraction on PAH Levels in Ambient Air." *Environmental Science & Technology*, 2015.

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[29] Southwest Pennsylvania Environmental Health Project, "Summary of Minisink Monitoring Results," 2015.

[30] Agency for Toxic Substances and Disease Registry, Health consultation/Exposure Investigation, Brigich Compressor Station, Washington County PA, 2016.

[31] 81 Federal Register §51866.

[32] GUIDANCE MANUAL FOR ENVIRONMENTAL REPORT PREPARATION For Applications Filed Under the Natural Gas Act (February 2017). The FERC manual (available at https://www.ferc.gov/industries/gas/enviro/guidelines/guidance-manual-volume-1.pdf) states:

P. 4-123: *You should provide estimated direct emissions of criteria pollutants, VOCs, total hazardous air pollutants (HAP), and GHGs in tons per year resulting from the construction of the proposed project. This includes pipelines greater than 5 miles in length (or any length in designated nonattainment/maintenance areas), compressor stations, LNG facilities, and other aboveground facilities.*

Footnote 41: *GHG emissions should include the emission categories and/or methodologies described in the* ***most current version of the CEQ's guidance*** *on GHG emissions and climate change, as applicable.* (Emphasis added.)

[33] CEQ Guidance, page 11.

[34] CEQ Guidance, page 34.

[35] CEQ Guidance, page 12 and 13.

[36] CEQ Guidance, page 13.

[37] CEQ Guidance, page 4.

[38] A. R. Brandt, G.A. Heath, E.A. Kort, et al. "Methane Leakage from North American Natural Gas Systems." *Science,* February 14, 2014.

[39] R.W. Howarth, R. Santoro, and A. Ingraffea. "Methane and the Greenhouse Gas Footprint of Natural Gas from Shale Formations." *Climatic Change Letters,* June 2011.

[40] Christine Shearer, John Bistline, Mason Inman, and Steven J. Davis. "The effect of natural gas supply on US renewable energy and CO2 emissions." *Environmental Research Letters,* September 2014.

[41] Oil Change International, "The Atlantic Coast Pipeline: Greenhouse Gas Emissions Briefing." 2017. http://priceofoil.org/content/uploads/2017/02/atlantic_coast_pipeline_web_final_v3.pdf

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[43] Laura Olson and Steve Esack, "More pipelines the next phase of Marcellus Shale drilling." The Morning Call, August 8, 2014. www.mcall.com/news/nationworld/pennsylvania/mc-pa-shale-pipelines-corbett-wolf-20140808-story.html.

The attachments to this letter have been reviewed by FERC staff and can be found on the FERC eLibrary site under FERC Accession No. 20170407-5096.

COMPANIES/ORGANIZATIONS COMMENTS

CO99 – Institute for 21st Century Energy

INSTITUTE FOR 21ST CENTURY ENERGY
U.S. CHAMBER OF COMMERCE

Karen Alderman Harbert
President and CEO

1615 H Street, NW | Washington, DC 20062
(202) 463-5558 | (202) 887-3457 Fax
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March 22, 2017

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

Re: Atlantic Coast Pipeline, LLC
Atlantic Coast Pipeline
Docket Nos. CP15-554-000 and CP15-554-001

Dear Ms. Bose:

CO99-1

The Institute for 21st Century Energy (Energy Institute) is an affiliate of the United States Chamber of Commerce, the world's largest business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations, and dedicated to promoting, protecting, and defending America's free enterprise system. The Energy Institute believes that construction of Atlantic Coast Pipeline LLC's (Atlantic) project, the Atlantic Coast Pipeline (ACP), is in our nation's best interest, and is pleased to submit these comments supporting the project.

The December 30, 2016 Federal Energy Reliability Commission Draft Environmental Impact Statement (DEIS) for ACP and the Supply Header Project (a separate proposed gas transmission project) states "ACP would serve the growing energy needs of multiple public utilities and local distribution companies in Virginia and North Carolina." The Energy Institute agrees. By connecting one of the nation's largest natural gas supply resource areas to areas that need additional energy supply, ACP will provide critical services to communities in Virginia and North Carolina, the Mid-Atlantic region, and provide great benefit to our entire nation's energy security.

CO99-1 Comment noted.

CO99-1 (cont'd)

Further, the combined construction and operation of ACP will power local economies with jobs and new tax revenues, and its new supply of affordable natural gas transported by the pipeline will stimulate economic growth across the region. The DEIS states, "[d]uring construction, ACP and SHP would benefit the state and local economies by creating a short-term stimulus to the affected areas through payroll expenditures, local purchases of consumables and project-specific materials, and sales tax. Operation of the projects would result in long-term tax benefits for the counties crossed." The Energy Institute believes that the short- and long-term job and economic advantages from the project are vital to the region and to the nation as a whole.

In fact, according to Atlantic, ACP is expected to support over 8,000 jobs during construction and contribute more than $10.4 million annually in future local property tax revenue to communities in Virginia. In North Carolina, the pipeline will support over 4,000 jobs during construction and contribute more than $7.7 million annually in future local property tax revenue; and support 3,000 jobs during construction and contribute more than $10.7 million annually in future local property tax revenue to communities in West Virginia. Altogether, the job benefits and ongoing economic contributions from the ACP will have lasting positive impacts on communities along the pipeline's carefully considered route.

ACP is also expected to produce significant energy cost savings to consumers in Virginia and North Carolina. An independent assessment prepared by ICF International for Dominion Transmission Inc. titled "The Economic Impacts of the Atlantic Coast Pipeline" (February 9, 2015) estimates the savings benefits, "[b]etween 2019 and 2038, a net annual average energy savings of over $377 million dollars - $243 million in Virginia, and $134 million in North Carolina."

In addition and importantly, FERC's DEIS determined, "[b]ased on our evaluations, we conclude that the major pipeline route alternatives and variations do not offer a significant environmental advantage when compared to the proposed route or would not be economically practical; and therefore, are not preferable to the proposed action." The Energy Institute agrees that the benefits of the ACP, both along the ACP's proposed route and regionally, significantly outweigh the short-term impacts associated with its construction.

CO99-1 (cont'd)

American businesses, homes, communities and livelihoods depend on access to reliable, affordable energy. The Energy Institute supports ACP and the jobs and economic and energy security it will bring to Virginia, North Carolina, West Virginia, and our nation. Conversely, we oppose any additional unrequired reviews that would delay approval of the Atlantic Coast Pipeline, and asks FERC to approve the project as soon as possible.

Sincerely,

Karen A. Harbert

COMPANIES/ORGANIZATIONS COMMENTS

CO100 – National Association of Manufacturers

NATIONAL ASSOCIATION OF Manufacturers

Ross E. Eisenberg
Vice President
Energy & Resources Policy

April 6, 2017

Nathaniel J. Davis, Sr.
Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: Docket Nos. CP15-554-000 and CP15-554-001(Atlantic Coast Pipeline) and CP15-555-000 (Supply Header Project)

Dear Mr. Davis:

CO100-1

The National Association of Manufacturers (NAM), the largest manufacturing association in the United States representing manufacturers in every industrial sector and in all 50 states, welcomes the opportunity to comment on the Atlantic Coast Pipeline in Docket No. CP15-554-000 and the Supply Header Project in Docket No. CP15-555-000. We request the timely approval of these applications.

Manufacturers use one-third of the energy consumed in this country and depend on a secure, affordable, reliable mix of energy resources to remain competitive. Access to natural gas resources is therefore vitally important. Transformative growth in domestic natural gas production is reshaping the US economy and redefining America's competitive advantages. For energy intensive manufacturing sectors such as paper, chemicals, metals, food, and refining, access to robust energy infrastructure plays a key role in keeping American manufacturing competitive in a global economy.

Further, the improved competitive positioning of manufacturing sectors served by natural gas pipelines provides economic development opportunities to communities across the United States. Proximity to natural gas resources begets new pipeline development which, often through direct access connections to a pipeline, is a fundamental consideration in manufacturing plant site selection. New natural gas pipeline capacity is also needed for the increased utilization of natural gas power generation capacity.

The enclosed comprehensive study from IHS Economics and the NAM reveals how natural gas has strengthened manufacturing, encouraged U.S. manufacturing growth and employment and highlights the positive impact to communities around the United States. Manufacturers use natural gas for fuel, such as drying, melting, machine drive and space heating as well as a feedstock in refining, chemicals and primary metals sectors. Domestic natural gas has transformed the U.S. economy, made our

CO100-1 Comment noted.

CO100-1 (cont'd)

companies more competitive, created jobs and put money back in the pockets of working Americans.

Over the next decade, demand for natural gas will increase dramatically, driven by manufacturing growth and electric power generation. The United States has more than enough supply to meet this growing demand. However, we need major investments in new infrastructure, particularly natural gas pipelines, to ensure manufacturers have a steady, reliable stream.

Our energy renaissance has put millions of Americans to work and created countless new opportunities for manufacturers. The NAM supports policies that promote access to natural gas resources in an environmentally sound manner. We appreciate your issuance of the draft Environmental Impact Statement for the Atlantic Coast Pipeline and Supply Header Project in a timely manner and request that the Commission continue to allocate the resources necessary to complete and issue the final authorization decisions for the projects.

Thank you for your consideration.

Sincerely,

Ross Eisenberg
Vice President
Energy and Resources Policy

Enclosures:
"Energizing Manufacturing: Natural Gas and Economic Growth," *Center for Manufacturing Research and IHS Economics*, Executive Summary, May 2016.
"The Economic Benefits of Natural Gas Pipeline Development on the Manufacturing Sector," *IHS Economics*, May 2016.

The attachments to this letter have been reviewed by FERC staff and can be found on the FERC eLibrary site under FERC Accession No. 20170406-5792.

COMPANIES/ORGANIZATIONS COMMENTS

CO101 – Wintergreen Property Owners Association

Wintergreen

88 Wintergreen Drive
Wintergreen Resort, VA 22967-2162

Wintergreen Property Owners Association

Jay W. Roberts, *Executive Director*
Tel. 434 325 8531 jayroberts@wpoainc.org

March 3, 2017

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

Re: Comments on the DEIS issued on December 30, 2016. Atlantic Coast Pipeline, LLC - Docket Nos. CP15-554-000 and Dominion Transmission, Inc. CP15-554-001

Dear Ms. Bose,

On December 30, 2016, FERC issued the DEIS relating to the proposed Atlantic Coast Pipeline ("ACP") and Dominion. The Wintergreen Property Owners Association ("WPOA") believes the draft EIS is materially deficient and does not satisfy the requirements set forth in NEPA. Reasonable alternative routes exist and FERC has failed in its duty to "study, develop and describe appropriate alternatives" as mandated by NEPA.

Dominion's current route for the ACP is unacceptable given that it causes significant adverse environmental, safety and economics impacts to the Wintergreen Community. Dominion needs to study alternatives brought forward by WPOA, Friends of Wintergreen ("FOW") and others and FERC has a duty to protect the public by ensuring that Dominion consider these alternatives. Given what is at stake, FERC must thoroughly understand the implications of the proposed route and respond in the public's interest, not the interest of a for profit corporation.

WPOA, FOW and others have brought forth credible evidence that suggests the current route for the ACP will cause significant adverse environmental, safety and economic impacts. The extent of these impacts can be found in the FOW response to the DEIS submitted on March 24, 2017. A summary of these concerns along with additional comments is included below.

ECONOMIC:

CO101-1 The proposed route will likely prevent two economic development projects planned at Wintergreen Resort and the Spruce Creek Spa. These projects are scheduled to provide hundreds of local jobs and bring millions in annual revenue to Nelson County. The importance of these projects have been documented in many FERC responses to date.

www.wtgpoa.org

CO101-1 Our analysis of impacts on Wintergreen and the development of Spruce Creek Resort are provided in section 4.9.8. In summary, we believe that construction of ACP and development of the hotel at Wintergreen Resort and the development of Spring Creek Resort and Market could be accomplished such that impacts associated with ACP are reduced or mitigated for, while maintaining the appeal of the area, as demonstrated by other residential and commercial developments in the area and similar projects throughout the country. See also the response to CO10-6.

COMPANIES/ORGANIZATIONS COMMENTS

CO101 – Wintergreen Property Owners Association (cont'd)

CO101-1 (cont'd) The decline in Real Estate values as a result of the pipeline and the long-term effect on values given the safety implications related to cutting off emergency access have been shared with FERC by WPOA, FOW and others. With over a Billion dollars worth of real estate in our community, a decline of 10% in property values has a $100 million dollar NEGATIVE impact. These negative impacts continue forever, they are well documented and can be avoided if FERC and ACP take a closer look at the alternative routes brought forward by WPOA, FOW and others.

ENVIRONMENTAL:

CO101-2 The proposed route will create a host of environmental issues including impacting conservation lands, wetlands, source water and other natural resources. These impacts and the concerns related are addressed in detail in the FOW response to the DEIS. FERC and ACP need to study the FOW response and act on the points raised.

CO101-3 In addition, the proposed Horizontal Directional Drill ("HDD") path and the alternative trenching path, should the HDD fail, are both unwise given the bedrock geology present (See WPOA geology report submitted to FERC on March 6, 2017. WPOA has presented FERC and ACP with evidence that shows the likelihood of slope failure if ACP decides to trench up the southeastern face directly across from the Wintergreen entrance. WPOA has also presented FERC and ACP with the risks associated with the current HDD plan. This area, known locally as "Reeds Gap" and "Pond Hollow", includes 4 fault zones, a shear zone, steep slopes, unstable colluvial material and large amounts of ground water. All of these site conditions are present in the proposed route and this further points to the need to accept alternatives. The original DEIS makes no mention of the bedrock geology present at the entrance to Wintergreen and the resulting problems that this geology presents. At the time the DEIS was issued, no carefully scientific study of the geology of this area was done or requested be done by FERC. WPOA has conducted this research and provided this information to FERC.

SAFETY:

CO101-4 The Proposed Route would pass directly across the sole entrance/exit to Wintergreen Resort and the Wintergreen community. During periods of high occupancy, Wintergreen Resort routinely has more than 10,000 homeowners, guests and employees on site. During quiet periods the community easily includes more than 1,000 individuals. Because there is only one entry and exit road for Wintergreen Resort and the Wintergreen mountain community, the current pipeline route creates an unnecessary and potentially catastrophic safety risk given the likelihood of steep slope landslides and the possibility of an explosion or gas leak. Any of these possibilities would cut off all access to the community making it impossible to bring in emergency resources and impossible to evacuate citizens. The FOW response to the DEIS goes into great detail about the potential loss of life and destruction of personal property that could occur as a result of the proposed pipeline route. These points need to be carefully studied by ACP and FERC. Given the consequences, FERC has a duty and a moral responsibility to look out for the public. ACP

CO101-2 Comment noted.

CO101-3 Comment noted.

CO101-4 Comment noted.

COMPANIES/ORGANIZATIONS COMMENTS

CO101 – Wintergreen Property Owners Association (cont'd)

CO101-4 (cont'd)

and FERC cannot argue that no reasonable alternatives exist, reasonable alternatives exist and these have been shared with FERC in multiple filings by WPOA, FOW and others.

WPOA recognizes FERC has a difficult job with many points and counter points to consider. We ask that FERC take the points raised in our filing seriously and that the alternatives proposed be given careful consideration. In some cases the negative impacts of a project like this reduce over time, construction ends and life goes on. For the Wintergreen Community, the negative impacts remain forever, putting our community at risk and passing unfair financial burdens on our owners.

Sincerely,

Jay Roberts
Executive Director
Wintergreen Property Owners Association
Encl.

Z-2234

COMPANIES/ORGANIZATIONS COMMENTS

CO102 – Rockfish Valley Investments, LLC

March 27, 2017

Rockfish Valley Investments, LLC
88 Grace Glen, Nellysford VA 22958

Nathaniel J. Davis, Sr.,
Deputy Secretary Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

RE: Comment of Rockfish Valley Investments, LLC on the Draft Environmental Impact Statement for the Atlantic Coast Pipeline and Supply Header Project (Docket Nos. CP15-554-000, CP15-554-001, and CP15-555-000 FERC/EIS-0274D)

Dear Mr. Davis and Members of the Commission,

This letter is respectfully submitted to demonstrate that the determinations by FERC, as represented in the DEIS for the ACP and related to the Spruce Creek Resort and Market and its compatibility with the ACP, are inaccurate, inconsistent, disingenuous and suggest gross negligence and an extraordinary failure of FERC to fulfill its mission and responsibilities to the citizens of Virginia and the United States.

It took FERC just three paragraphs – a scant 318 words – to summarily dismiss one of the single most promising development projects in Nelson County -- a project that, all by itself, would provide more long-term jobs than the entire ACP and more annual revenue to Nelson County than the ACP. A project that the rightful owners of the land have spent four years and more than $1 million to acquire, design and begin to develop. A project that would celebrate the beauty and ecology of our valley and not destroy and abuse it like the ACP. The project in question is the planned Spruce Creek Resort and Market.

If the ACP is approved in its current form and route, the Spruce Creek Resort and Market would physically lose more than 30% of planned accommodations as well as the entire spa complex (approx 44% of the resort side planned revenues), and make building the remaining project futile.The ACP would render the resort no longer be economically viable, and will result in the termination of this project. This means a powerful force for long-term economic development in Nelson County will be destroyed for the benefit of Dominion and Duke Energy at the expense of the citizens of Nelson County and Virginia.

Background:

***Prelude** - Rockfish Valley Investments and Nelson Hilltop, LLC are two local LLC's owned by Richard G. Averitt III, Richard G. Averitt IV, and Jill Averitt. All three Members of the LLC's have homes in Nelson County and two have lived here full-time

since 2005. In 2015, Nelson Hilltop, LLC contributed its assets to Rockfish Valley Investments LLC to create efficiencies for operations and financing. This is the very definition of a local small business. There are real people behind this pleading and we will use the term WE to remind FERC of this fact.

In September of 2013, we contracted to purchase approximately 100 acres fronting the Thomas Nelson Scenic Highway (151) and Spruce Creek in Nelson county across from Bold Rock Cidery and adjacent to Horizons Village.

In October of 2013, we began sketching out the concept plans for Spruce Creek Resort and Market and secured all of the related URL Domains, including SpruceCreekResort.com, SpruceCreekMarket.com, SpruceCreekSpirits.com, etc.

In February of 2014, we hired renown landscape architecture firm Nelson, Byrd and Woltz (http://www.nbwla.com/) to do site plan analysis and begin working on a concept plan.

In April of 2014, we completed the first phase of the concept and analysis.

In May of 2014, we met with Maureen Kelly, the head of economic development in Nelson County, and gave her a tour of the site to discuss our project as it might relate to the county's economic development initiatives.

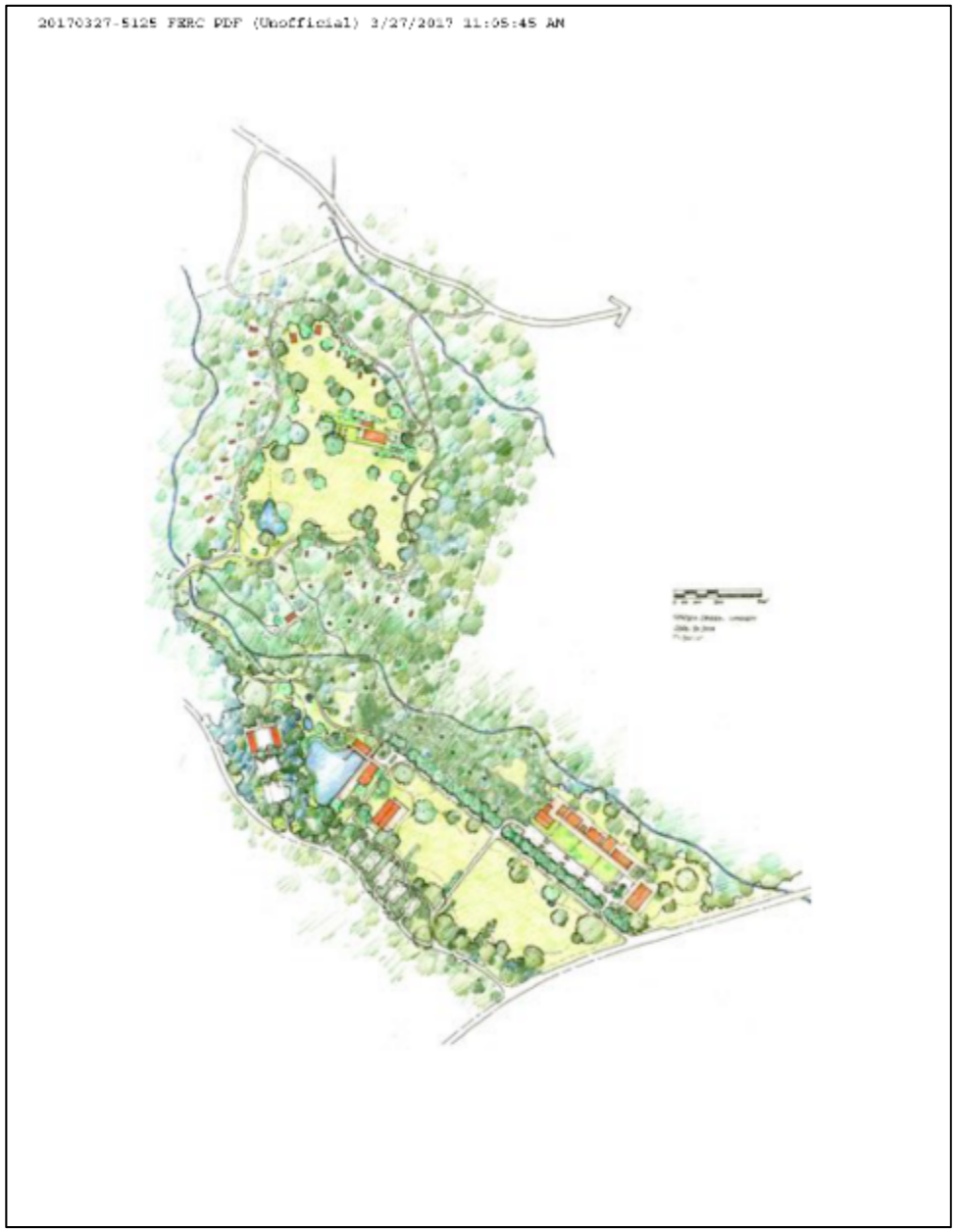
In early summer 2014 we completed the first pass at the construction estimates to scope the total cost of the development. (This is included as the "Order of Magnitude-Cost Opinion Summary provided to FERC as part of (Submittal #20150922-5021) on September 22, 2015.)

In September of 2014, we coordinated early talks with Rick Youngblood and Jeffrey Kessler at VDOT to better understand the requirements for ingress and egress of the property on the existing roads.

In Early Fall 2014 - we completed a revised site plan drawing in order to begin discussions with investors and stakeholders to back the project. See the design rendering on the following page (Figure 1).

COMPANIES/ORGANIZATIONS COMMENTS

CO102 – Rockfish Valley Investments, LLC (cont'd)



Z-2237

In Fall 2014, we organized a meeting with adjacent property owners and all of those in Horizon's Village to discuss the development concept and listen to their thoughts and concerns. We agreed to work in connection with all property owners nearby to build a resort project that would add real value to the community and to their lives personally and not degrade their current and normal use and enjoyment of their properties. (Imagine if ACP had taken this approach.)

In winter of 2015, we first learned of the new alternate route of the ACP that would impact our property. Since then, we have been working to better understand the ACP routes and have been communicating directly with all stakeholders about this project. I spoke at the FERC hearings, have submitted documents to the Economic Impact Study done by Key Log Economics, and have written numerous letters to our Senators, Governor, and to FERC. We have denied Dominion access to survey our land for the ACP since we obviously have a much higher and better use for the property in active development and we will not sell at any price and Dominion sued us for access.

September 22, 2015 - The comprehensive report and design documents were filed with FERC as confidential documents (Submittal #20150922-5021) Response to Data Request from a FERC visit by Richard G Averitt, IV (Spruce Creek Resort Project) under PF15-6.

Fall 2015 – We applied for Supplemental Use Permits for the Spruce Creek Resort and Market.

January 2016 - We received Special Use Permits from Nelson County and the unanimous support of the Board Of Supervisors and the Economic Development Authority. Nelson County is earnestly awaiting the emergence of Spruce Creek Resort and Market.

Since January of 2016, we have spent tens of thousands of dollars in legal bills asserting our rights to reject the ACP and build our resort. This time delay has cost tens of thousands in accrued interest and millions in lost opportunity cost.

Here is the entire consideration given to the Spruce Creek Resort and Market in the DEIS.

4.8.4.3 Spruce Creek Resort and Market

We received comments that ACP would preclude the development of the Spruce Creek Resort and Market, a proposed five-star destination resort, hotel, restaurant, and public market on 100 acres of mature woodland along Virginia State Route 151 and bisected by Spruce Creek (Friends of Wintergreen, 2016). More specifically, the developer is concerned that the project would cross the middle of the property, eliminate the attractiveness of the resort area and, thus, development of the resort would be stopped. Based on information provided by

the developer, the AP-1 mainline would cross the resort between approximate MPs 162.4 and 162.7 in Nelson County, Virginia.

The northern half of the planned resort property would consist primarily of cottages and dining areas; the southern half would consist of additional cottages, a banquet hall, parking, reception and maintenance buildings, and a market and shops (Nelson County Department of Planning and Zoning, 2016). As of May 2016, the developer had submitted a SUP application to Nelson County and, following a January 5, 2016 Nelson County Board of Supervisors meeting, the project was approved (Horizons Village, 2016).

We requested that Atlantic analyze a route variation that would, among other things, avoid the Spruce Creek Resort and Market. The three route variations (Spruce Creek Route Variation, Horizons Village 1 Route Adjustment, and Horizons Village 2 Route Adjustment) are described in section 3.4.1. For the reasons discussed in section 3.4.1, we do not recommend that Atlantic adopt the Spruce Creek Route Variation, which would avoid the proposed Spruce Creek Resort and Market development. Similar to the Wintergreen Resort, we believe that construction of ACP and development of the Spruce Creek Resort and Market could be accomplished such that impacts associated with ACP are reduced or mitigated for, while maintaining the appeal of the area, as demonstrated by other residential and commercial developments in the area and similar projects throughout the country.

DEIS Analysis and Rebuttal:

CO102-1

"4.8.4.3 Spruce Creek Resort and Market

We received comments that ACP would preclude the development of the Spruce Creek Resort and Market, a proposed five-star destination resort, hotel, restaurant, and public market on 100 acres of mature woodland along Virginia State Route 151 and bisected by Spruce Creek (Friends of Wintergreen, 2016).

The DEIS comments related to Spruce Creek Resort and Market begin by citing a filing made by Friends of Wintergreen and completely ignore previous statements made and filed by Richard G. Averitt IV at the FERC hearing in March 2015 and filed in April 2015:

Submittal 20150420-0096	04/09/2015 04/20/2015	PF15-6-000	Comments of Richard G. Averitt re the Atlantic Coast Pipeline Project under PF15-6. Availability: Public Highlighted Version

It also ignores the comprehensive detailed site analysis and filing we made in response to a request of FERC on September 22, 2015.

CO102-1 FERC reviews all comment letters received and does not always include references to each individual comment letter received. We note that some information was provided to FERC as "confidential" or "privileged" and, as such, we are unable to include that information in a public document. However, to address the commentor's concerns, section 4.8.4.3 has been updated to include the issues identified in the previously filed comment letters referenced in the commentor's letter and to include newly public information.

CO102-1 (cont'd)

Submittal 20150922-5021 Document Components	09/22/2015 09/22/2015	PF15-6-000	Response to Data Request from a FERC visit by Richard G Averitt, IV (Spruce Creek Resort Project) under PF15-6. Availability: Public Highlighted Version
Submittal 20150922-5020 Document Components	09/22/2015 09/22/2015	PF15-6-000	Response to Data Request from a FERC visit by Richard G Averitt, IV (Spruce Creek Resort Project) under PF15-6. Availability: Privileged Highlighted Version

It appears from this opening statement alone that FERC has neglected its responsibility to assess and consider the facts and comments presented by the affected landowners in the process of determining the appropriateness of the route and weighing the overall cost/benefit analysis of the project. If FERC has not even reviewed the detailed plans we submitted at their request, and in answer to their questions, how can it adequately determine the impacts of the pipeline and the alternative value of a No Action decision?

FERC goes on to write:

"*More specifically, the developer is concerned that the project would cross the middle of the property, eliminate the attractiveness of the resort area and, thus, development of the resort would be stopped.*"

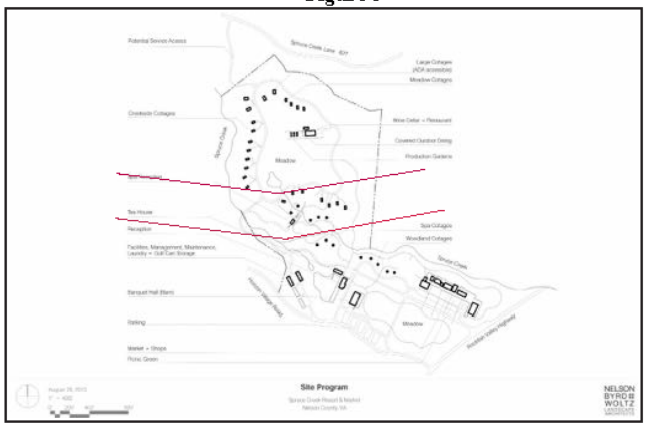
Here, by it's own admission, FERC notes we are concerned that the ACP would bisect our proposed resort and the development of the resort would be stopped. This is not an opinion that FERC can debate. This is a statement of fact by the developer of a project and which FERC acknowledges they have heard. Any further discussion that the ACP and the Spruce Creek Resort can coexist is therefore false and disingenuous. It hides the fact, which is not in dispute, that the Spruce Creek Resort will NOT be built if the ACP bisects our property regardless of FERC's opinion on the matter.

Why would we not build it? Please see the attached illustrations below that clearly overlays the ACP proposed route through the heart of Spruce Creek Resort and Market (Figure 2) and the area to be clear-cut for construction (Figure 3). Variations on this image have been presented on numerous occasions to FERC and Dominion since the announcement of the ACP.

CO102-1 (cont'd)

Figure 2

Figure 3



Z-2241

CO102-1 (cont'd)

Note that the ACP will clear cut all trees within the red lines and aggressively shape the land to make construction easier. This specific part for the property is along the edge of a small ridge that creates a beautiful steep drop down to the wetlands along Spruce Creek. Notice the black squares and rectangles within the red lines. Seven of these are "Treehouse" accommodations that are designed to be a featured part of the resort project. They are specifically designed for this geographic location due to the slope, the existing tree canopy and the opportunity to have them positioned to each be secluded and enjoy a private view down the hill onto the lush wetland area along Spruce Creek. (See the attached photographs that represent the conceptual design of these structures. (Image 1-2) and the attached photographs which illustrate the current landscape and conditions inside the area to be clear cut and graded (Images 3-5). Similar images of the tree house structures were included in the detailed site analysis and confidential filing we made in response to a request of FERC on September 22, 2015. (Submittal 20150922-5021 and Submittal 20150922-5020) and the photographs illustrating the natural topography, flora and fauna were also submitted June 2, 2016 (Submittal 20160603-5090).

Image 1

COMPANIES/ORGANIZATIONS COMMENTS

CO102 – Rockfish Valley Investments, LLC (cont'd)

CO102-1 (cont'd)

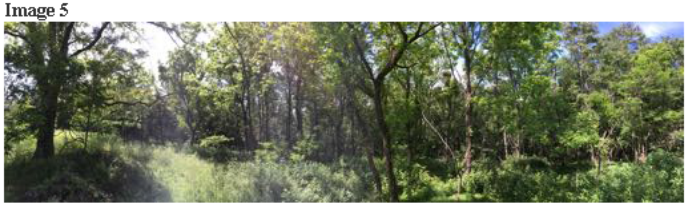
Image 2

Image 3

Image 4

CO102-1 (cont'd)

Image 5



The five additional black squares and the one larger rectangle in the lower side of the clear cut zone is the planned Spa complex consisting of five individual spa cabins and a main reception and boutique. This is designed to be nestled into the landscape and connected with slightly elevated wooden walkways to preserve and celebrate the existing wetland character and experience. The spa cabins are located close to the Spruce Creek to allow for the natural sound of the running water and the wildlife to enhance the experience of tranquility. Obviously, cutting down the trees, removing the fabulous rock features and grading the hillside would irreparably damage the entire planned experience here. The combined impact makes the project both tactically unviable from and experience and aesthetics perspective as well as financially unfeasible.

CO102-2 Finally, the risk of housing people inside the incineration zone of a 42 inch high pressure gas pipeline is a risk we are not prepared to take. We recognize that, statistically speaking, although the chance of this pipeline exploding at this specific spot is low, the impact of such an event makes the risk too great to bear. Such an explosion would kill many, if not all, of our guests and our employees and potentially trap others with the ensuing wildfires. For the very practical and the emotional reasons stated above, we will not build the Spruce Creek Resort and Market if the ACP is approved in its current form and route.

CO102-3 Each and every aspect of this project has been carefully considered and designed for its specific place as stated in our filing to FERC on June 2, 2016 and identified by FERC as:

Submittal 20160603-5090	06/02/2016 06/03/2016	CP15-554-000	Comments on Environmental Issues and Impact of Spruce Creek Resort and Market Related to Horizons Village 2 Route Adjustment, Nelson County, Virgini, under CP15-554..

In this filing, we clearly describe the detailed environmental features relied upon for the design and feasibility study of the resort project. An excerpt of which is copied here for illustration:

"It is important to note that the entire design of the Spruce Creek Resort and Market is built on the premise of celebrating the natural beauty of the Rockfish Valley and our stunning ecology. The resort will be a respite from busy lives led in urban areas and

CO102-2 Sections 4.12.2 and 4.12.3 of the EIS address the historic incident data for natural gas transmission pipelines, including injuries and fatalities. We acknowledge the very small potential risk associated with operation of ACP and SHP, as discussed in section 4.12.3. However, the data, as presented in the EIS, demonstrate that natural gas transmission pipelines continue to be a safe and reliable means of energy transportation.

CO102-3 See the response to comment CO102-1.

CO102-3 (cont'd)

depends on the bucolic and undisturbed enjoyment of the forest and fields that make up its landscape. Our design has taken into account these fragile environmental features. The resort plan demonstrates our commitment to building plans and a footprint based on ecologically sensitive minimalist structures, built by hand, to preserve and protect the natural landscape and the opportunity for our guests to commune with and experience the stunning beauty and tranquility of the historic Blue Ridge."

This specific filing with FERC goes on to identify 6 key features of the natural landscape that would be damaged or destroyed and illustrates each with descriptions and photographs. There is no evidence that FERC considered this filing at all in it's DEIS and therefore there is no basis for the determination of compatibility of the ACP and the Spruce Creek Resort except to assume that FERC has prioritized ACP's assertion that there are other resorts which have pipelines through them and therefore this one will be fine.

This argument is flawed in fundamental ways. Not all resorts are created equal and neither are all pipelines. In past filings, Dominion and ACP have asserted that the ACP is compatible with the Spruce Creek Resort because other resorts have pipelines through them as well. While this may be true in fact, it is irrelevant as a means for determining if THIS pipeline is compatible with THIS resort project. Dominion has failed to demonstrate that there is a single 5-Star resort anywhere in the world that is bisected (or even significantly interrupted) by a 42-inch natural gas pipeline.

As reference, Dominion and ACP have provided examples of resorts which have existing gas infrastructure near or partially transecting their properties. Not one of these examples is comparable to this pipeline and it's impact on this resort project. The idea that a natural gas service line in Napa Valley that provides residential and commercial low volume use of natural gas to the resort itself as a utility is comparable to a 42-inch high pressure pipeline that provides no local service and would bisect the resort putting every structure and every person within the blast zone is again both false and blatantly disingenuous. This is like saying a Prius and a Sherman tank are similar because they can both drive.

Paragraph 2 of FERC's comments on Spruce Creek Resort and Market reads:

"The northern half of the planned resort property would consist primarily of cottages and dining areas; the southern half would consist of additional cottages, a banquet hall, parking, reception and maintenance buildings, and a market and shops ***(Nelson County Department of Planning and Zoning, 2016).*** *As of* ***May 2016****, the developer had submitted a SUP application to Nelson County and, following a* ***January 5, 2016*** *Nelson County Board of Supervisors meeting, the project was approved* ***(Horizons Village, 2016).***

FERC's assertion is accurate in it's broad description of the zones of the development but it simply ignores the fact that design drawings, as submitted to ACP and FERC, provide evidence that the current route of the ACP would erase all of the accommodations designed as tree houses in the middle of the property and wipe out the spa complex entirely. Additionally, it is curious that FERC has once again neglected to acknowledge

CO102-3 (cont'd) or reference the multiple filings to FERC with detailed designs and site-analysis provided by us as the developers. Lastly, the sloppiness with which FERC has evaluated, constructed and written this DEIS is evidenced above when FERC claims that the SUP permits were submitted in May 2016 and later approved in January 2016 and, once again, reference Nelson County and Horizons Village rather than the filings with accurate dates and facts submitted buy us, the developers. Clearly the SUP permits cannot be submitted five months after they are approved. There is no evidence that a careful analysis and consideration has been given to our comments and filings or to the creation of this document.

Alternatives Routes up for debate:

FERC asserts in the DEIS:

"For the reasons discussed in section 3.4.1, we do not recommend that Atlantic adopt the Spruce Creek Route Variation, which would avoid the proposed Spruce Creek Resort and Market development. "

CO102-4 FERC requested that Dominion and ACP evaluate an alternative route to the current proposed route as an option to avoid the Spruce Creek Resort and Market. However, the Spruce Creek Route Variation, as it became known, was so obviously flawed and clearly designed to be easily dismissed that it is insulting to FERC and to the citizens of Nelson County.

Although Dominion and ACP may have followed the *letter* of the request from FERC, they clearly did not follow the *spirit* with which that request must have been made. The Spruce Creek Route Variation that Dominion and ACP proposed impacted a dozen more families, crossed valuable business properties, bisected a nearby conservation easement, crossed a local Stream Bank project, and finally ran smack down the center of the ONLY existing runway in Nelson county which lies in the heart of a fly-in community flanked by residences before reconnecting with the current pipeline route less than 2 miles away. This ludicrous "alternate" route added mileage, put more land and people at risk, and was in all aspects a red-herring so that ACP and Dominion could argue that the current route is the better alternative and allow Dominion and ACP to proceed.

Many more practical and less damaging alternative routes could be drawn by any high school student with a basic map. The point is, FERC should hold Dominion and the ACP to the *spirit* of its requests and not simply allow them to flaunt the process and check the boxes. This was not an honest and thorough analysis of how Dominion and ACP might be able to build their pipeline without robbing Nelson County of an **actual** job creation and economic opportunity in development at the Spruce Creek Resort (as opposed to ACP's temporary and spurious claims that it will bring economic prosperity).

In its conclusion, FERC writes in the DEIS:

CO102-4 As stated in section 4.12, there are over 315,000 miles of natural gas transmission pipelines throughout the United States. This does not account for other product pipelines, local distribution pipelines, etc. FERC has reviewed hundreds of EAs and EISs where a development was planned in the immediate area of where a natural gas pipeline was proposed and vice versa. While it is FERC's responsibility to disclose the potential impacts on the environment associated with a project, and, if necessary, to recommend mitigation to reduce the impacts, it does not engage in easement or monetary negotiations between the company and the landowner.

Also see the response to comment CO102-1.

CO102-4 (cont'd)

"Similar to the Wintergreen Resort, we believe that construction of ACP and development of the Spruce Creek Resort and Market could be accomplished such that impacts associated with ACP are reduced or mitigated for, while maintaining the appeal of the area, as demonstrated by other residential and commercial developments in the area and similar projects throughout the country."

Please allow us to address this conclusion in two parts:

"Similar to the Wintergreen Resort, we believe that construction of ACP and development of the Spruce Creek Resort and Market could be accomplished such that impacts associated with ACP are reduced or mitigated for, while maintaining the appeal of the area,…."

How is this similar to Wintergreen Resort?

By FERC's own writings in section **4.8.4.2 Wintergreen Resort :**

"Based on information provided by Wintergreen Property owners Association Inc. and Wintergreen Resort Inc., the proposed hotel within the Wintergreen Resort area would be over 1 mile east of the project near AP-1 MPs 159.0 to 160.0 where existing homes and businesses are most prevalent and near ski slopes."

And

"Most comments received expressed concern about crossing roads accessing the proposed and existing resort area. "

How is this even remotely similar to Spruce Creek Resort and Market? In the case of the Spruce Creek Resort, the ACP is not a mile or more away and impacting only the road crossings accessing the resort. In this case, the ACP will bisect the center of the resort project rendering several prime acres unbuildable in perpetuity, cut down hundreds, if not thousands, of trees, move and permanently alter the existing natural landscape and rock formations, and eliminate fully 44% of the revenue generating opportunities of the resort portion of the development.

"…, as demonstrated by other residential and commercial developments in the area and similar projects throughout the country."

What other residential and commercial developments in the area is FERC referring to? In fact, what other similar developments or projects in the entire USA are they referring to?

As previously stated, I submit for the record that neither FERC nor ACP can find and reference even a single similar project or development in the entire USA whose circumstances and timing are similar in any meaningful way. This is an absurd statement to make. It is both false and disingenuous. **This is the kind of statement that makes it abundantly clear that FERC is not reading the comments from the citizens it is supposed to protect and which we have spent thousands of dollars of our hard earned money to provide to FERC so it can make an informed decision. We have**

invested an untold number of hours responding to and respecting the FERC process while FERC itself makes a mockery of the citizens and of FERC itself.

Furthermore, even if you deem FERC's absurd analogies to be valid, on what basis would this determination be made? Did FERC do an economic model that justifies how this resort could be profitable without the more than 7 cottages (30%) and the entire Spa complex that would be eliminated? Did FERC consult with resort financiers to determine that this project is an investible project with no more than 66% of the revenue generating spaces as proposed? Did FERC do a site evaluation with qualified landscape architects that demonstrates that a guest's experience of the resort will not be diminished when hundreds of trees have been clear cut and the ground leveled for construction purposes?

There is no evidence whatsoever that FERC has read our comments or evaluated in any meaningful way the impact of the ACP on the Spruce Creek Resort, job creation in Nelson County, the impact on the local environment given the value and precarious nature of natural streams and habitats like Spruce Creek, or the economic damage that will be caused by the ACP to both the landowners/developers and the county at large.

We insist that FERC respect the letter of the law and hold Dominion and the ACP accountable to each and every issue represented herein and reject the ACP outright as a flagrant abuse of federal power for the sake of profits for a privately owned company. If FERC will not deny the ACP permit outright, it MUST, at a minimum, rescind the current DEIS and demand a thorough and comprehensive evaluation and report to which the citizens have the opportunity to comment before it issues any permit or certificate of need. The use of eminent domain in this particular instance favors one foreign corporation's interest and desires over the rights of a local corporation and citizenry that has invested in and owns private property. The bar for proof of public necessity must be very high and exhaustively evaluated and it must be balanced against the costs and damage to the people, the economy, and the environment locally. There is no doubt that the current DEIS has failed to reach even the minimum bar of responsibility to its charter and to the citizens of the United States and Virginia.

COMPANIES/ORGANIZATIONS COMMENTS

CO103 – Lewis Airstrip, LLC

LEWIS AIRSTRIP, LLC.

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Buckhannon, WV 26201
Cell: 304.439.0153
Fax: 304.472.3668

NEAL W. ROHR
MEMBER and MANAGER
rohrmw@yahoo.com

ORIGINAL

March 21, 2017

Mr. Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: CP15-554

Dear Mr. Davis:

CO103-1

Attached please see my March 6, 2017 letter to you. I requested you write a letter to my attorney expressing support for my petition to the WV Department of Environmental Protection.

In the meantime the Atlantic Coast Pipeline team and I have satisfactorily resolved the issue. Accordingly I have signed a lease for 40+ acres to be used as a contractor's yard. Thus I withdraw my request for your letter.

Thank you for your attention to my issue.

Sincerely

Neal W Rohr 3/21/17

CO103-1 Comments noted.

COMPANIES/ORGANIZATIONS COMMENTS

CO103 – Lewis Airstrip, LLC (cont'd)

LEWIS AIRSTRIP, LLC.

PO Box 2123
Buckhannon, WV 26201
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NEAL W. ROHR
MEMBER and MANAGER
rohmw@yahoo.com

March 6, 2017

Mr. Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington DC, 20426

Re: CP15-554

Dear Mr. Davis:

Attached are copies of my 1/20/17 and 2/27/17 letters to you. As shown in the draft EIS CD, Volume 2 (CD page 151), our field is being considered for a Contractor Yard. Please note that my two letters have been primarily concerned with adherence to landowner's desires when the project is completed. I have discussed this issue with your External Affairs Desk, and with FERC employees at a "Public Comment Session" concerning the draft EIS. Without exception these sources have expressed the position of FERC that the desires of private property owners should be the rule when the project is completed. I note in the draft EIS, section 2.3.2.9 titled "Cleanup and Restoration" (CD page 108), there are multiple remarks favoring adherence to landowner preferences.

The proposal of Atlantic Coast Pipeline is: (1) At the outset topsoil would be piled around the edges of the field and the bare soil would be covered with rock. (2) Then upon project completion the rock would be piled and the topsoil respread. When the project is completed I want the rock to remain spread and the topsoil to remain piled. I have explained in writing and in detail why I take this position. ACP has advised that its permit from the WV Department of Environmental Protection will require that Contractor Yards be restored to original condition. So I have retained an attorney to obtain a waiver from the WVDEP for our property.

Given FERC's advocacy of landowner preferences, I ask that you write a letter supporting my request for a waiver. Please address that letter to my att'y Mr. Joseph Jenkins; LewisGlasserCasey&Rollins, PLLC; BB&T Square Suite 700; 300 Summers Street; Charleston,WV 25301.

Thank you.

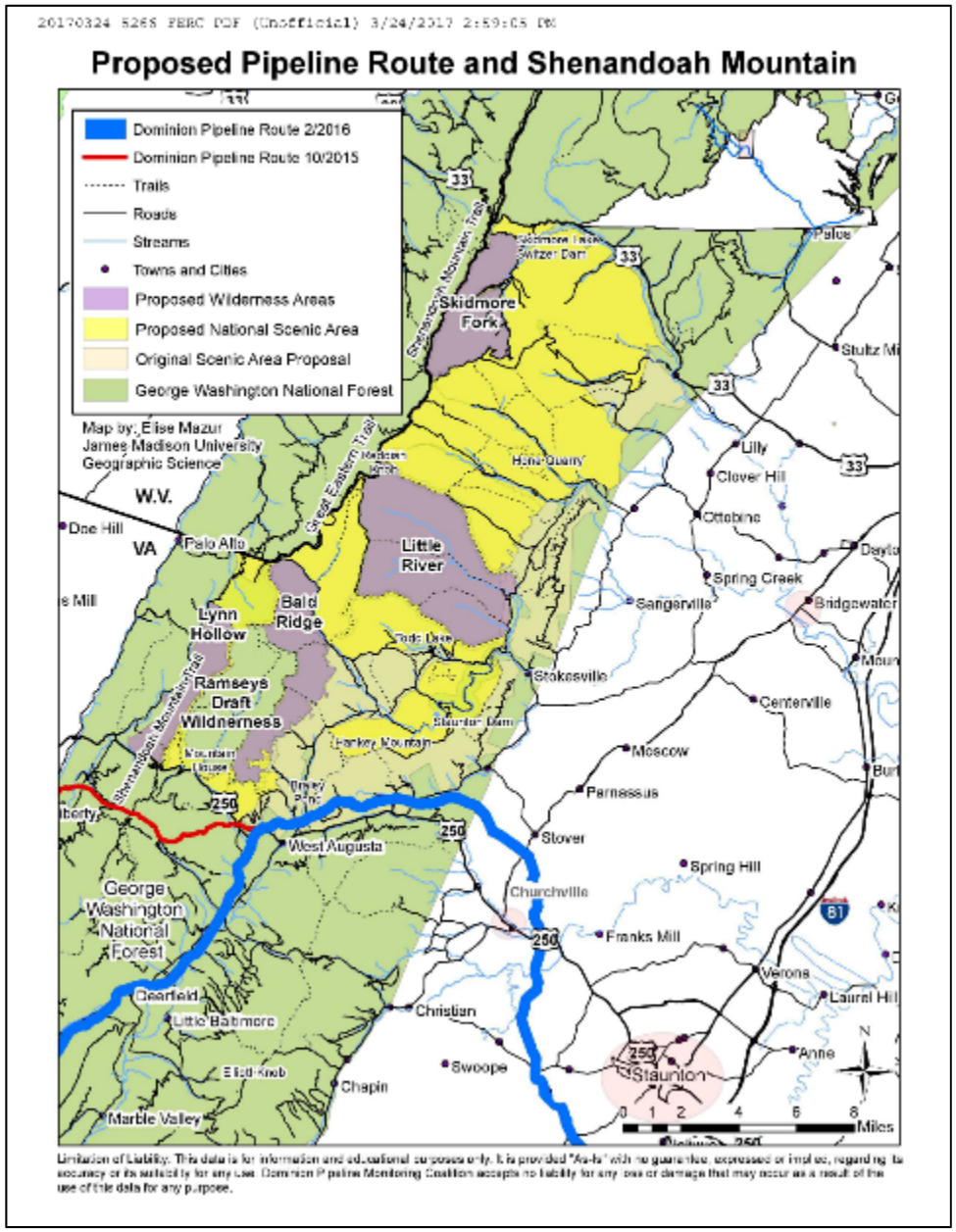
Sincerely

Neal W Rohr 3/6/17

Z-2250

COMPANIES/ORGANIZATIONS COMMENTS

CO104 – Friends of Shenandoah Mountain



COMPANIES/ORGANIZATIONS COMMENTS

CO104 – Friends of Shenandoah Mountain (cont'd)

March 24, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: FERC Docket #CP15-554

Dear Deputy Secretary Davis:

We are writing on behalf of Friends of Shenandoah Mountain to express concern about the inadequacy of the Draft Environmental Impact Statement for the Atlantic Coast Pipeline (ACP). Our comments are focused on the Braley Pond – Hankey Mountain portion of the ACP route in western Augusta County. Our main concerns are that the Draft EIS:

1. fails to analyze impacts to scenic areas and recreational trails as is required by the Natural Gas Act
2. violates George Washington National Forest Plan standards and guidelines
3. ignores written requests from the GWNF to re-evaluate sensitive stream crossings
4. minimizes the significance of fragmentation of core forested areas on Hankey Mountain

About the Proposed Shenandoah Mountain National Scenic Area
Friends of Shenandoah Mountain is a coalition of organizations, businesses, and faith groups working toward permanent protection of the central Shenandoah Mountain area in the George Washington National Forest (GWNF). Our goal is Congressional designation of a 90,000-acre tract of Shenandoah Mountain as a National Scenic Area with embedded Wilderness (see **www.friendsofshenandoahmountain.org**). Our proposal is the result of a 15-year collaborative effort involving diverse forest user groups that now has broad support by over 280 organizations and businesses. The Shenandoah Mountain area has been identified as a prime candidate for permanent protection because it is so special. Stretching 72 miles through the heart of the GWNF, Shenandoah Mountain has the largest concentration of roadless areas on national forest land east of the Mississippi. This mostly unfragmented forest, which is exceptionally rich in biodiversity, is a local, regional, and national treasure.

The proposed SMNSA is an important water resource both for municipal water and to support aquatic life. It provides municipal water for Staunton and Harrisonburg and many other towns and cities downstream. It has headwaters of the James, Shenandoah and Potomac Rivers. Its coldwater streams are productive habitat for wild brook trout.

Z-2252

Shenandoah Mountain is also a recreational hub for hiking, mountain biking, fishing, hunting, camping, horseback riding, nature study, and scenic driving. It serves the mid-Atlantic region's recreational needs. Outdoor recreation on Shenandoah Mountain draws visitors to the area and supports the local tourism economy, as shown in Table 1. These figures have been increasing annually.

Table 1. Visitor Spending in 2015	
Augusta County	$117 million
Staunton	$52 million
Rockingham County	$198 million
Harrisonburg	$114 million
Highland County	$17 million

Source: Virginia Tourism Corporation

Hankey Mountain: Part of Original SMNSA Proposal

Our comments on the Draft EIS are focused on the segment of the ACP that crosses the George Washington National Forest in the Braley Pond – Hankey Mountain area which was part of the original Shenandoah Mountain National Scenic Area proposal submitted to the GWNF in October 2008 during the public comment period for the forest plan revision. Since then, Friends of Shenandoah Mountain has modified our proposal boundaries to exclude the southern part of Hankey Mountain specifically to satisfy forest stakeholder concerns about the Grouse Habitat Management on Chestnut Oak Knob on the flank of Hankey Mountain. Specifically, game managers wanted to ensure that grouse management through timber sales would continue to be a priority on Chestnut Oak Knob where it has been a joint venture between Virginia Department of Game and Inland Fisheries and the Ruffed Grouse Society for several decades. While the pipeline corridor does not cross current SMNSA proposal boundaries, it does cross through the Grouse Management Habitat Area, and it would have significant negative effects on scenic qualities, recreation, forest fragmentation, and water resources of the SMNSA.

GWNF Plan Recommendation of SMNSA

The 2014 GWNF Land and Resources Management Plan recommends Congressional designation for the SMNSA: According to the Plan:

"the purposes of the Shenandoah Mountain Scenic Area are to:

- *Ensure appropriate protection and preservation of the area's scenic quality, water quality, natural characteristics, and water resources;*
- *Protect and manage vegetation to provide wildlife and fish habitat consistent with the previously described purpose;*
- *Protect habitat for the Cow Knob salamander;*
- *Provide areas that may develop characteristics of old-growth forests; and*
- *Provide a variety of recreation opportunities that are consistent with the preceding purposes.*

The Shenandoah Mountain National Scenic Area is well known for its scenic overlooks from the crest of Shenandoah Mountain, particularly Reddish Knob. Some of the best views on the North River Ranger District are possible from the crest of Shenandoah

Mountain. Shenandoah Mountain has exceptional beauty and outstanding opportunities for solitude... The area provides clean drinking water; clean air; and erosion and flood control for Shenandoah Valley residents. It is a large, substantially unfragmented forest teeming with wildlife and home to neo-tropical songbirds, black bear, native trout, and a number of rare species including the Cow Knob salamander. There are abundant recreational opportunities, including camping, hiking, mountain biking, horseback riding, fishing, hunting, rockclimbing, and birding."

Clearly, siting the ACP alongside the recommended Scenic Area is an inappropriate place for a new utility corridor. The GWNF Plan discourages new utility corridors: "When feasible, expansion of existing corridors and sites is preferable to designating new sites." If FERC issues a permit for the pipeline along this route, the forest plan would need to be amended. If the GWNF authorizes a new Utility Corridor (GWNF Management Area 5C) across Rt. 250, Braley Pond access road. and Hankey Mountain, then future utilities will be directed there, compounding the long term impact.

CO104-1

Impacts of the ACP on the Proposed SMNSA

Scenic impacts

The Draft EIS fails to address scenic integrity impacts to the SMNSA. The pipeline crossing near the intersection of Rt. 250 and Rt. 715 (Braley Pond Rd) is a concern primarily because Rt. 250 is a major gateway to scenic and recreational resources on Shenandoah Mountain. Visitors form a first impression of the proposed SMNSA based on the visual experience from Rt. 250. A 125- to 175-foot wide construction corridor and 55-foot permanently-cleared corridor will significantly degrade the scenic quality of the southern end of the SMNSA.

According to the GWNF Plan, Rt. 250 is a "Scenic Corridor" (turquoise on Map 1) and GWNF land along this corridor will be managed to protect scenic values: "High quality scenery is provided in sensitive recreational and travelway settings…. The area visible during leaf-off for up to one-half mile from either side of the road typically defines the corridor… These areas are unsuitable for designation of new utility corridors, utility rights-of-way, or communication sites… The emphasis is on providing high quality scenery in sensitive recreational and travelway settings." While the ACP route skirts the Rt. 250 Scenic Corridor management prescription, it is located squarely between the Scenic Corridor and the proposed SMNSA.

The Draft EIS dismisses any visual impact, stating incorrectly that, "views of the pipeline corridor would be unlikely due to existing topography and trees**."** This is simply not true. The ACP route would be clearly visible from several popular trails in the proposed Shenandoah Mountain National Scenic Area, including the Wild Oak National Recreation Trail on Hankey Mountain (green dot on right on Map 1) and Bald Ridge Trail in Ramseys Draft Wilderness (green dot on left on Map 1). It would also degrade the scenic quality of the Rt. 250 gateway to the following recreational resources:

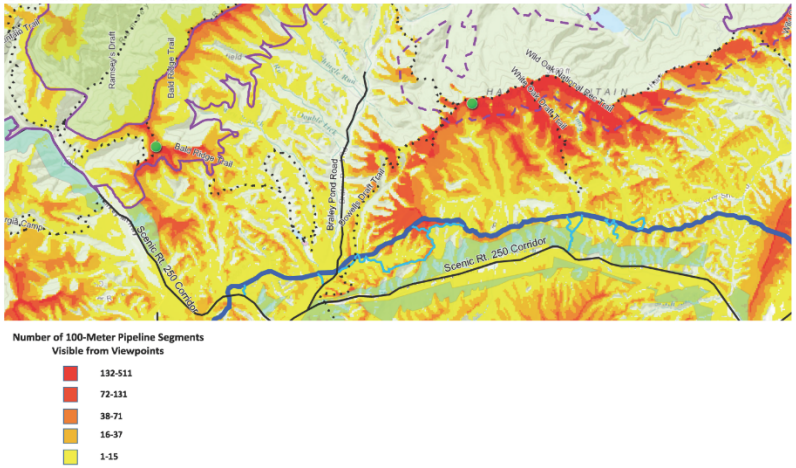
- **Braley Pond Recreation Area** (fishing, picnicking, camping, biking, hiking, hunting, horseback riding, and nature study are popular in this area)
- **Dowells Draft** (popular for grouse hunting, hiking, mountain biking, horseback riding)

CO104-1 FS response: Section 4.8.9.1 discusses potential impacts on these areas. The pipeline on the GWNF would not be visible from any of the developed recreation sites. The EIS discusses the potential impacts on travelers on the primary access route to these sites, U.S. 250. Due to a buffer of trees from 0.4 to 1.0 mile wide between U.S. 250 and the proposed pipeline on the national forest, there are no impacts expected on scenery viewed from this road. The COM Plan will include revegetation measures designed to help mitigate visual effects, such as reducing the operational right-of-way that is converted to herbaceous cover from 50 feet wide to 10 feet wide. Along the edge of this linear corridor a variety of FS approved shrubs, small trees, and shallow rooted trees should be planted and maintained along a slightly undulating line in order to break up the straight edge and offer a variety of plant heights to reduce a hard shadow line.

CO104-1 (cont'd)

- **Hankey Mountain** (hiking, hunting, mountain biking, horseback riding, nature study)
- **Staunton Dam** and **Elkhorn Lake** (fishing, photography, canoeing, birding, hiking, mountain biking, horseback riding)
- **Upper North River** (hiking, horseback riding, camping, fishing, hunting, mountain biking, nature study)
- **Todd Lake Campground** (camping, swimming, picnicking, hiking, mountain biking)
- **North River Campground** (camping, fishing, hiking, mountain biking, horseback riding, hunting)
- **Ramseys Draft Wilderness**, one of Virginia's most popular Wilderness areas (hiking, backpacking, fishing, hunting, camping, birding
- **Confederate Breastworks** (hiking, learning history, viewing outstanding scenery, birding, hunting, mountain biking

Map 1. Scenic Integrity Impacts of the ACP and Access Roads on the SMNSA and Wild Oak National Recreation Trail



CO104-2

Stream Impacts

The Draft EIS fails to disclose all brook trout streams crossed by the ACP and access roads and fails to discuss impacts on all sensitive streams. The Shenandoah Mountain area is a regional stronghold for wild brook trout. The ACP route crosses four brook trout streams in the Braley Pond-Hankey Mountain area (shown on Map 2):

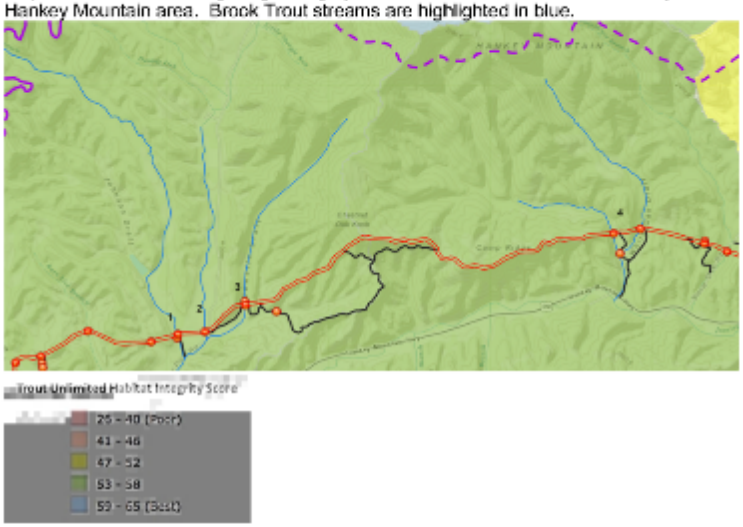
1. Braley Branch
2. Calfpasture River
3. Dowell's Draft
4. White Oak Draft

CO104-2 FS response: The brook trout streams and impacts on those streams and other sensitive streams have been updated in the final EIS. See Section 4.6-Aquatics, appendix K-Waterbodies Crossed and appendix R-Managed Species Tables. In section 4.6.5, discussing the GWNF, the final EIS instructs Atlantic to "request a final review and approval of the conservation measures to be incorporated for each waterbody by the appropriate federal and state agencies."

CO104-2 (cont'd)

Construction of the pipeline will harm these sensitive brook trout streams by causing siltation and turbidity.

Map 2. ACP Route through High Integrity Wild Brook Trout Habitat in the Braley Pond – Hankey Mountain area. Brook Trout streams are highlighted in blue.



In a Sept. 1, 2016 letter to FERC prior to the release of the DEIS, The Forest Service expressed concern about project impacts to White Oak Draft and a Dowell's Draft tributary to the Calfpasture River, both wild brook trout streams. The Forest Service specifically asked Dominion/ACP to "re-evaluate its proposed stream crossings and proposed locations of access roads, while considering Forest Plan standards and BMPs relating to soil and water." The Draft EIS ignores this official request and continues to show the ACP route and access roads crossing these sensitive streams.

CO104-3

High Hazard Area

The Forest Service has identified White Oak Draft as a "High Hazard Area" because of steep slopes (>70%) adjacent to the stream (see #4 on Map 2). Construction of the pipeline across this deep ravine would damage the stream and set the stage for landslides during heavy rains. Dominion has failed to respond to the Forest Service's request for detailed construction plans on how they could safely and responsibly construct the pipeline across White Oak Draft and what measures they would use to stabilize slopes and control soil erosion.

CO104-3 FS response: Atlantic has provided site-specific plans for two sites and will provide plans for the remaining eight sites, including this one, before construction could begin at those locations.

COMPANIES/ORGANIZATIONS COMMENTS

CO104 – Friends of Shenandoah Mountain (cont'd)

CO104-4

Recreation Impacts

The scenic Rt. 250 gateway is perhaps the most heavily used access to prime recreational resources located in or adjacent to the proposed Shenandoah Mountain National Scenic area (shown on Map 3):

- campgrounds
- lakes
- picnic areas
- 150 miles of trails
  - **Wild Oak National Recreation Trail**
  - **Shenandoah Mountain Trail** (a segment of the Great Eastern Trail)
- Ramseys Draft Wilderness
- Fort Edward Johnson (Confederate Breastworks)

The Draft EIS for the ACP project does not discuss or evaluate these potential impacts.

Map 3: Rt. 250 is a primary access to recreational sites and trails within or just outside of the SMNSA

CO104-5

Forest fragmentation impacts

A permanent ACP corridor across Hankey Mountain would fragment three miles of core forest causing loss of 535 acres of high quality interior forest habitat. This includes the width of the 125-foot construction corridor plus 100 meters on each side (shown on Map 4). Access roads would cause loss of an additional 124 acres of core forest. This route through core forest on Hankey Mountain is the longest continuous stretch of forest fragmentation on National Forest land for the entire ACP. The core forest on Hankey is of the highest quality category, >500 acres. The new cleared corridor and roads would create a pathway for nonnative invasives that outcompete native species and invite harmful predators to move into the forest "edge" and spread into the proposed National Scenic Area.

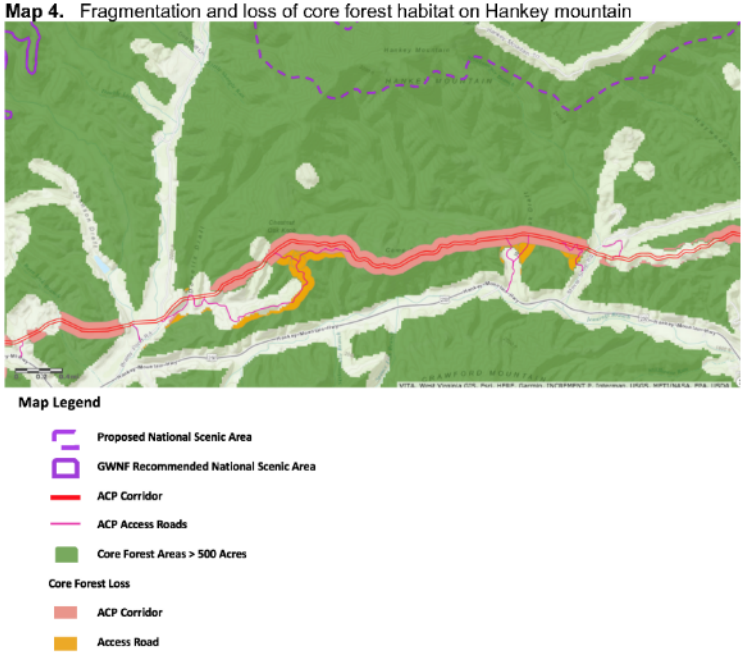
CO104-4 FS response: The impacts on these areas are discussed in Section 4.8-Land Uses, Special Interest Areas, and Visual Resources.

CO104-5 FS response: The COM Plan has mitigation measures and monitoring procedures for non-native invasive species (Attachment J). Noxious weeds and other invasive plants are discussed in Section 4.4.4. Fragmentation is described in Section 4.5.6-Habitat Fragmentation and Edge Effects. One action that will help reduce fragmentation effects is to create more of a transitional effect between the maintained 10-foot herbaceous cover over the pipeline toward the edge of the operational corridor with shrubs and shallow-rooted trees.

CO104-5 (cont'd)

The Draft EIS states that forest fragmentation is one effect that cannot be mitigated. The portion of the GWNF between Rt. 250 and Rt. 33 is the largest tract of mostly unfragmented forest on National Forest land east of the Mississippi; therefore, this fragmentation would be particularly significant.

Map 4. Fragmentation and loss of core forest habitat on Hankey mountain



CO104-6

Conclusion

We are concerned that the ACP would degrade visual qualities, recreational opportunities, wild brook trout streams, and interior forest habitat and could even jeopardize the viability of the proposed National Scenic Area for Congressional designation.

Given these concerns, Friends of Shenandoah Mountain does not consider the Draft EIS to provide a sufficient basis for the Forest Service to make a decision on whether to issue a Special Use Permit and waive Forest Service standards to protect water, old growth, and scenic integrity. This route passes through one of the finest and least fragmented natural areas remaining in the Eastern United States, an area that is broadly supported for

CO104-6 FS response: Since the draft EIS, Atlantic has provided additional information and analyses as requested by the FS to evaluate the effects of the proposed project. The FS has worked with Atlantic to develop project design features, mitigation measures, and monitoring procedures to ensure that NFS resources are protected. The determination that the EIS is sufficient to meet FS NEPA obligations will be made in the FS ROD for the plan amendments decision.

CO104-6 (cont'd)

protection by the public. We ask that FERC redo the Draft EIS and conduct a thorough analysis of impacts to the proposed SMNSA in order to satisfy NEPA requirements. We also ask that the public be given a full comment period to respond to any new analyses.

Thank you the opportunity to comment on the Draft EIS.

Sincerely,

Lynn Cameron
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Attachment:
- Map of Proposed Pipeline Route over SM

COMPANIES/ORGANIZATIONS COMMENTS

CO105 – Virginia Petroleum Council

Miles Morin
Executive Director
Virginia Petroleum Council
701 E Franklin St, Suite 1112
Richmond VA 23219

March 29, 2017

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

Subject: Atlantic Coast Pipeline Project (Docket No. CP15-554)

Dear Ms. Bose:

CO105-1 On behalf of the Virginia Petroleum Council, I am writing to respectfully request the Federal Energy Regulatory Commission's approval of the proposed Atlantic Coast Pipeline (ACP).

Natural gas is the cleanest burning fossil fuel, producing about half the carbon emissions of coal, and is very reliable and affordable. On a national level, carbon emissions from electricity generation are at 22-year lows, and overall energy-related carbon emissions dropped 12 percent below 2005 levels last year, according to the EIA. EIA credits this progress as primarily due to "increased use of natural gas for electricity generation." Virginia's natural gas use is increasing, having grown more than 50 percent from 2004 to 2014. This growth in use corresponds with lower gas prices, which are saving customers money and spurring economic growth. Increasingly natural gas is being used for power generation which is helping lower utility costs for residential and commercial users, like schools, hospitals, and businesses.

Eastern Virginia has struggled to match natural gas supply with demand. During the winter just a few years ago, local distribution companies had to cut supply to their industrial customers in order to ensure there was sufficient supply for residential gas heating. The ACP project would help prevent a repeat of this situation and provide fuel to growing markets most notably the Hampton Roads region.

Hampton Roads is home to major military installations, shipbuilding, defense contractors, and well over 100,000 active duty and retired military personnel. Reliable and inexpensive access to clean-burning natural gas will be of great benefit to these businesses, bases, and populations. Fortifying our energy supply in such a military-heavy region will enhance our national security.

Increased gas access will also be a boon for consumers. One in three Virginia households utilizes gas for home heating and residential consumption is on the rise

CO105-1 Comment noted.

CO105 – Virginia Petroleum Council (cont'd)

CO105-1 (cont'd)

as homes convert from electricity to gas. Low income communities spend a disproportionately large share of their pay on energy costs, and the ACP will provide a steady supply of inexpensive natural gas to Virginia, reducing both electricity and home heating and cooking costs.

With regard to FERC's Draft Environmental Impact Statement (DEIS), we are happy to see FERC conclude that ACP and its sister projects "would not result in a significant cumulative impact on the environment." ACP has sought the least possible impact on landowners and sensitive environmental areas, having made more than 300 route adjustments over 250 miles. These significant changes led to the DEIS's finding that none of the alternatives were preferable to the proposed revised route.

ACP has also committed to using many "best in class" standards, which far exceed the most stringent regulatory requirements. Examples include their approach to steep slope construction and emissions controls, leading to far fewer environmental impacts than even strict adherence to existing regulations would provide. ACP has minimized risks to wetlands, wildlife habitats, drinking water, and cultural and historic resources, leading the DEIS to conclude that "the majority of project effects would be reduced to less-than-significant levels."

Natural gas is going to be an important part of the nation's energy portfolio for generations. We need to build infrastructure to get cleaner, cheaper fuel to market in order to help spur the economy and help consumers save money on fuel costs. The proposed ACP would achieve these goals in a responsible manner.

Accordingly, the Virginia Petroleum Council supports the project and respectfully requests the commission act quickly to approve the ACP proposal as soon as it has a quorum of commissioners.

Sincerely,

Miles Morin
Executive Director
Virginia Petroleum Council

COMPANIES/ORGANIZATIONS COMMENTS

CO106 – American Petroleum Institute

energy API

Robin Rorick
Group Director
Midstream and Industry Operations

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Email rorickr@api.org
www.api.org

March 29, 2017

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

Subject: Docket No. CP15-554
Atlantic Coast Pipeline Project
Atlantic Coast Pipeline, LLC & Dominion Transmission, Inc.

Dear Secretary Bose:

CO106-1

The American Petroleum Institute (API) represents all aspects of America's oil and natural gas industry. Our more than 650 corporate members come from all segments of the industry and include producers, refiners, suppliers, marine transporters, as well as service and supply companies that support all segments of the industry. Our membership also includes a number of companies that develop, construct and operate natural gas pipelines as well as marketers and shippers that subscribe to these pipelines in order to move product to market. Therefore, API is greatly interested in the continued development of natural gas infrastructure to improve public access to this important resource.

As the Commission is well aware, America is in the midst of an energy revolution. The benefits derived from America's oil and natural gas industry are vast and undeniable. The U.S. is now the world's top producer of natural gas[1] – currently producing over 74 Bcf/d in 2015.[2] Our nation's supply of this resource is enormous and readily available for decades to come thanks to continuing technological advances in accessing and extracting these resources.[3] The abundance of this resource, as well as its affordability, reliability and flexibility has allowed the country's consumers to reap tremendous benefits:

[1] EIA, Today in Energy, "United States remains largest producer of petroleum and natural gas hydrocarbons," May 23, 2016.
[2] EIA Short-term Energy Outlook, May 10, 2016
[3] According to a recent study by IHS, utilizing today's technology, approximately 1,400 Tcf of natural gas is recoverable at a current break-even Henry Hub price of $4/MMBtu or less. IHS, "Shale Gas Reloaded: The Evolving View of North American Natural Gas Resources and Costs." February 2016, http://press.ihs.com/pressrelease/north-americas-unconventional-natural-gas-resource-base-continues-expand-volume-and-de.

CO106-1 Comment noted.

CO106-1 (cont'd)

- Power generators are increasingly turning to natural gas a low-cost fuel source – providing 33% of the power consumed in the U.S. in 2015, as much as coal and more than nuclear and renewable sources.[4] Gas demand growth in the sector is expected to increase by 44% from 2015 to 2040.[5] Greater utilization of natural gas for power generation has helped greatly reduce air pollution and greenhouse gas emissions.[6] Further, the flexibility of natural gas-fired generation – for instance, its ability to quickly respond to fluctuation in electricity demand – is helping enable increased use of intermittent energy sources like wind and solar.
- Industrial demand for natural gas is also growing – over 20% since 2009.[7] The manufacturing sector is making significant investments in the U.S. to expand operations in order to take advantage of the U.S.'s supply leading to increased job growth and tax revenue.[8]
- A number of pipeline projects are being developed to enable natural gas exports. Multiple studies have shown that increasing LNG exports will have significant benefits including creating more than 450,000 new American jobs and adding up to $73.6 billion in economic activity.[9] Besides, economic benefits, increased exports will also help reduce global air emissions[10] and enhance national security.

Pipeline projects themselves also provide significant economic benefits. The latest forecasts show that over the next 20-years approximately 23,000 miles of new transmission infrastructure will be required to meet demand in North America.[11] This development (including other oil and gas infrastructure projects) will create over 300,000 jobs per year. The resulting addition to GDP (including employment wages and benefits, state and local taxes, and federal taxes, etc.) derived from these investments is more than $758.1 billion. [12]

---

[4] EIA, Electric Power Monthly, March 2016.
[5] EIA, AEO 2016
[6] Researchers at the National Oceanic and Atmospheric Administration (NOAA) found that the increased use of natural gas in power generation has led to 40 percent fewer NOx emissions and 44 percent fewer SO2 emissions since 1997. J.A. de Gouw, et al. 2014. "Reduced emissions of CO2, NOx, SO2 from U.S. power plants owning to switch from coal to natural gas with combined cycle technology," Feb 21, 2014.
[7] EIA, https://www.eia.gov/dnav/ng/NG_CONS_SUM_DCU_NUS_A.htm
[8] According to the American Chemistry Council, "more than $130 billion dollars of new investment in chemical manufacturing capacity has been announced (since 2010) to be put in place over the next decade." American Chemistry Council, "The Rising Competitive Advantage of U.S. Plastics," May 2015.
[9] ICF, U.S. LNG Exports: Impacts on Energy Markets and the Economy, May 15, 2013
[10] DOE, Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States, May 29, 2014.
[11] ICF, North American Midstream Infrastructure Through 2035: Leaning into the Headwinds, April 12, 2016.
[12] *Id.*

CO106-1 (cont'd)

Regarding the Atlantic Coast Pipeline (ACP) Project, the pipeline is being developed to serve multiple public utilities and their growing natural gas demand in Virginia and North Carolina. Supplying the growing demand in these regions, particularly for residential and industrial use, will provide significant economic benefits to the communities the project serves. ACP estimates that the project will save consumers more than $377 million annually in energy costs, provide thousands of jobs during its construction and operation, and generate and average $25 million dollars in annual local tax revenue after its completion.[13]

Enhancing our nation's natural gas delivery system is the key to ensuring that the benefits of this tremendous resource are maximized and available to all.

It is for these reasons that API supports this and other projects before the Commission and encourages the timely consideration and approval of the ACP project's application.

Sincerely,

Robin Rorick
Group Director
Midstream and Industry Operations
American Petroleum Institute

[13] http://energysure.com/the-facts/Boosting-the-Local-Economy.aspx

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc

William T. Wilson, President
Jackson River Preservation Association, Inc.

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March 31, 2015

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

Re: Comments and Motion Regarding Flood Issue
ATLANTIC COAST PIPELINE, LLC Docket No. CP15-554-000
DOMINION TRANSMISSION, LLC. Docket No. CP15-555-000

Dear Secretary Bose:

Attached are the "Comments and Motions" of the JRPA and the CRPA to the DEIS filed by FERC. Copies have been sent to all parties.

Please acknowledge this filing and let us know if we need to do anything further.

Very truly yours,

William T. Wilson, President
Jackson River Preservation Association, Inc.
FERC ID #F308773

Nelson Hoy, President
Cowpasture River Preservation Association, Inc.
FERC ID#

WTW/klc
Attachments

Z-2265

UNITED STATES OF AMERICA
before the
FEDERAL ENERGY REGULATORY COMMISSION (FERC)

In the Matter of

ATLANTIC COAST PIPELINE, LLC — Docket No. CP15-554-000
and
DOMINION TRANSMISSION, LLC. — Docket No. CP15-555-000

COMMENTS AND MOTION

I. INTRODUCTION

1. The Jackson River Preservation Association, Inc. (JRPA) is a §501(c) (3) (non-profit) corporation composed of citizens of the Alleghany Highlands (the counties of Bath, Highland and Alleghany in Virginia) and was organized for the preservation and protection of the Jackson River which flows through those counties.

2. The Cowpasture River Pasture Association (CRPA) does hereby claim standing in any and all public deliberations that deal with the Atlantic Coast Pipeline, LLC and Dominion Transmission, LLC. via-a-vis the construction and operation of the "Atlantic Coast Pipeline." The CRPA is a 501(c) 3 not-for-profit organization established in 1972 to engage in research and education on issues of water quality and quantity in the Cowpasture River Valley. The Association's purpose for being as established by the essence of its charter is to preserve water quality and quantity, both surface and ground water.

3. The JRPA and the CRPA have filed as "Intervenors" in the above styled case before FERC and, therefore, have standing to file these comments and motion.

II. ARGUMENT

CO107-1

4. JRPA and CRPA have reviewed FERC's DEIS and find it totally inadequate in a number of areas, some of which have, or will be addressed in other filings. The purpose of these comments and motion is to address the complete failure of Dominion and FERC to assess the probable impacts of major floods on the pipeline right-of-way and access roads where they are to be constructed, if a permit is issued.

March 31, 2017 Page 1

Z-2266

CO107-1 Flooding hazards are discussed in sections 4.1.4.3 and 4.12.2 of the EIS.

CO107-1 (cont'd)

5. Within the last 50 years the Alleghany Highlands has been devastated by major hurricanes and floods, including the following major events:

   A. Flood of 1963;

   B. Hurricane Camille 1969;

   C. Hurricane Agnes 1972;

   D. Flood of 1985;

   E. Hurricane Hugo 1989 and

   F. Summer flood of 2016.

6. The above referenced floods and hurricanes caused immense damage to the lands and rivers in the above counties and elsewhere, including massive amounts of erosion that polluted the Jackson River, Cowpasture River and their tributaries. Much of this damage was irreparable and evidence of that damage can still be seen today.

7. Dominion proposes to cut a swath through the above counties 150 feet wide, with connecting access roads, and then bury a 42 inch natural gas pipeline in a 10-foot-deep ditch using the same soil and material taken out of the ditch to refill it. This pipeline itself will be under great pressure in order to move the natural gas across Virginia and will be at great risk if uncovered by storm activity

8. Nowhere in the DEIS is there a science-based projection, analysis or evaluation of how floods and hurricanes, similar to the ones listed above, will affect the Jackson or Cowpasture River during the proposed construction and the further operation, and maintenance of the pipeline. In other words, there is no projection of how such floods and hurricanes would affect the pipeline, and consequently the Jackson River or Cowpasture River, at any of the following:

   A. During construction;

   B. During year one;

   C. Between year one and year five;

   D. Between year five and year ten and

CO107-1 (cont'd)

E. Between year ten and the life of the project.

9. The Jackson River is a beautiful, pristine trout stream which flows through the above counties. It is reported to be one of the finest trout streams in the eastern United States. Each year, thousands of people float this river and fish it for trout and other species. The Homestead, an Omni Resort Hotel in Bath County, regularly takes its guests on floats along this river. Just a few miles below where the pipeline is proposed to cross the Jackson River is the USFS recreation area known as "Hidden Valley." This area is regularly stocked with trout and is visited by hundreds of tourists every year.

10. On the west side of the Jackson River, near the village of Bolar where the pipeline crosses, on the opposite side of a large mountain, lies Back Creek, also a beautiful and pristine, rural trout stream. This stream flows through pastures and forest until it merges with the Jackson River some ten miles downstream to form Lake Moomaw. Lake Moomaw is a 2540 acre lake set in the wilderness, with no development on its shores, and is stocked with bass, trout, pickerel, sun fish, and other species. The lake is managed by the USFS and the Virginia Department of Game and Inland Fisheries (VDGIF). The dam itself (the Gathright Dam) is operated by the Army Corps of Engineers (C of E). The purpose of Lake Moomaw was, and is, threefold:

    a. Flood control;

    b. Recreation and

    c. Water quality (all the way to Richmond, Virginia).

11. The Cowpasture River begins its journey in northeastern Highland County. It joins the Jackson 84.4 miles later to form the James River. During this passage, it sinks underground for nearly five miles and is joined by many tributaries becoming navigable for the last ten miles or so.

12. The Cowpasture River and two significant tributaries are crossed three times by the ACP and twice by access roads. Steep slopes characterize these crossings and are very susceptible to runoff and sedimentation during even modest rainfall activity.

13. The Cowpasture River is designated as "scenic, recreational and historical."

14. Water quality benefits were projected to reach all the way to Richmond, Virginia, which gets its drinking water from the James River. (The

CO107-1 (cont'd)

Jackson River and the Cowpasture River merge in the Town of Iron Gate, Virginia, to form the James River.) The City of Covington gets its drinking water from the Jackson River.

15. Below the Gathright Dam, between the dam and the City of Covington, Virginia, is a stretch of the Jackson River of about 20 miles. This stretch of river has many aquatic creatures, including Brown and Rainbow trout. It is a beautiful, wild river which flows through farm lands, woods and fields. Landowners have homes and cabins along the river and it is a wonderful recreation and scenic resource.

16. The Jackson River continues to flow through the City of Covington and on about ten miles to the Town of Clifton Forge. From Clifton Forge, it is only a few miles, as the Jackson River flows through the beautiful Iron Gate Gorge, down to its merger with the Cowpasture River to form the James River.

17. The Alleghany Highlands is a very beautiful rural area. There is one large industry in Covington called WestRock, a papermill. Like so many rural areas of Virginia, the population of the Alleghany Highlands is declining and much of its future is tied to the Jackson River and Lake Moomaw.

18. It is more than likely that floods and hurricanes imposed upon new pipeline construction, or even older construction, would cause major erosion to the mountains and in other places where the pipeline would cross streams. Serious and irreparable damage will occur to the Jackson River, Back Creek Lake Moomaw and the Cowpasture River. Karst formations, springs and wells will be damaged in such floods. Many of the slopes are 80 degrees, or more, and could never withstand that kind of water volume. As an example, during Hurricane Camille, whole sides of mountains gave way and eroded into the valleys and streams below. The potential and probable damage to the Jackson River, Cowpasture River and their tributaries from such floods would be devastating and irreparable. It is not humanly possible to construct a pipeline, like the one proposed by Dominion, that would not be wrecked by floods and hurricanes like the ones referred to above.

19. Also attached is an article from the March 12, 2017, edition of the *Roanoke Times* entitled "Pipeline's Path Stirs Concerns for Water" showing that the City of Roanoke, Virginia, has serious concerns about sediment in the Roanoke River from the Mountain Valley Pipeline (MVP).

20. Also attached are letters, dated March 9, 2017, and March 13, 2017, from the JRPA to the "governing bodies" in the Alleghany Highlands expressing concern about erosion damage to the pipeline right-of-way from flood

CO107-1 (cont'd)

waters thereby adversely affecting the Jackson River; Hidden Valley (USFS); Lake Moomaw by the (USFS) and the Corps of Engineers; and the Cowpasture River.

21. Attached to this comment are articles from the November 5, 2015, edition of the Highland County *Recorder*, showing some of the damages from the great flood of 1985, to Highland County alone. The remainder of the Alleghany Highlands suffered similar damages.

22. This pipeline jeopardizes the future of the Jackson River, the Cowpasture River, Lake Moomaw and the communities and businesses in the Alleghany Highlands. These comments and motion call upon FERC to make a thorough analysis of the environmental impact on Virginia's rivers, streams and lakes before a certificate is granted and the power of eminent domain is unleashed.

23. In the opinion of the undersigned, it is impossible to construct Dominion's proposed pipeline without causing serious and permanent damages that make building the project prohibitive.

24. For the reasons outlined above, it is clear that the DEIS does not include a scientifically based, detailed analysis of the impact of hurricanes and floods on the proposed right-of-way. The result of that omission is that the public and all contributing state and federal agencies cannot properly and meaningfully evaluate and comment on Dominion's proposed project. At the very least, FERC should gather that information and file a supplemental or amended DEIS (*Or. Envtl. Council v Kunzman*, 817 F.2d 484, 492).

WHEREFORE, for the reasons stated above, the JRPA and the CRPA move FERC to require Dominion to project how the above referenced floods and hurricanes would impact the project, if built, and how such floods and hurricanes would impact the Jackson River, the Cowpasture River and Lake Moomaw, and all tributaries in the watersheds of those rivers and streams. In addition, impacts of such floods on Karst formations, springs, wells and other environmental elements should be considered.

Once this information has been collected, FERC must file an amended or supplemental DEIS for public and agency comment.

Having considered all those factors, JRPA and CRPA respectfully prays that Dominion's requested certificate be denied.

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

Jackson River Preservation Association, Inc.

By: _____
William T. Wilson, President

Cowpasture River Preservation Association, Inc.

By: _____
C. Nelson Hoy, President

CERTIFICATE OF SERVICE

I hereby certify that I have on March 31, 2017, caused the forgoing document to be served upon each person designed on the official service list compiled by the Secretary in this proceeding.

_____
William T. Wilson, President
Jackson River Preservation Association, Inc.

CERTIFICATE OF SERVICE

I hereby certify that I have on March 31, 2017, caused the forgoing document to be served upon each person designed on the official service list compiled by the Secretary in this proceeding.

_____
C. Nelson Hoy, President
Cowpasture River Preservation Association, Inc.

March 31, 2017 Page 6

Attachments:
"Pipeline's Bath Stirs Concerns for Water" Article dated March 12, 2017
Letter to Governing Bodies dated March 9, 2 017
Letter to Governing Bodies dated March 13, 2017
"Swept Away" Article dated November 5, 2015

Carbon Copies:

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Virginian Review
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Pipeline's path stirs concerns for water

By Duncan Adams
duncan.adams@roanoke.com
981-3324 | Posted: Sunday, March 12, 2017 7:41 am

The Roanoke River needs love, understanding and attention and not a new source of sediment.

So says Bill Tanger, chairman of Friends of the Roanoke River.

"Sediment is now the biggest problem on the upper Roanoke River," said Tanger, who is also a member of the Upper Roanoke River Roundtable.

Dwayne D'Ardenne, stormwater utility manager for the city of Roanoke, agreed that sediment already is a worry for the upper river. Sediment that settles in streams can smother aquatic life and can transport bacteria and industrial pollutants like PCBs, he said.

Enter the proposed Mountain Valley Pipeline. Although the pipeline's current route does not pass through the city of Roanoke, city officials recently acknowledged concerns about how erosion and sediment linked to the infrastructure project could affect the Roanoke River as the waterway winds through the jurisdiction.

The 42-inch diameter, 303-mile buried pipeline would pass through the Roanoke River's watershed in Montgomery and Roanoke counties as it transports natural gas at high pressure from Wetzel County, West Virginia, to another pipeline in Pittsylvania County.

It would cross the river itself about 1.2 miles upstream from the intake for the Spring Hollow Reservoir, a regional source of drinking water whose withdrawals from the river are suspended when sediment levels are high.

The Western Virginia Water Authority operates the 3.2 billion-gallon reservoir, which stores water before it is treated for drinking. The authority has remained neutral about the pipeline, but it has voiced concerns about the project's potential to precipitate erosion and add sediment.

"Sediment in the river has a direct impact on the number of days we can pump out of the Roanoke River, and we do not want to reduce the number of days that we can pump," said Sarah Baumgardner, a spokeswoman for the authority.

"While the screens on the intake pumps minimize sediments coming into the reservoir, sediment can transport contaminants and bacteria and ultimately collect in the reservoir," she said.

No one disputes that the Mountain Valley project, if approved by the Federal Energy Regulatory Commission, will add sediment to the Roanoke River watershed.

That will be especially true during project construction.

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

First, a 125-foot wide construction right-of-way will be cleared of trees and other vegetation that serves to reduce run off into the creeks that feed the north and south forks of the Roanoke River at its headwaters.

"The relatively dense tree canopy in the head water areas intercepts rainfall so that it gently penetrates the ground as groundwater rather than flowing overland as runoff," wrote Pamela Dodds, a geologist whose report about the pipeline's potential impacts on watersheds in Roanoke County was submitted by the county to FERC in comments about the commission's draft environmental impact statement for the project.

As construction proceeds, there will be trenching to a depth of about 10 feet. There will be blasting. Heavy equipment will compact soils. The pipeline's route will take it up and down steep slopes where soil cover is already susceptible to erosion.

The pipeline itself, or new or altered roads designed to provide access to the pipeline, will cross Roanoke River tributaries, including high-quality streams like Bottom Creek on Bent Mountain.

According to a report by Environmental Solutions & Innovations, or ESI, a consultant hired by the pipeline company, increased sediment loads associated with project construction "are likely to continue downstream [in the Roanoke River] until the sediment is arrested behind the first dam (i.e. Niagara Dam) or is deposited into Smith Mountain Lake."

Mountain Valley plans to bury the pipeline five feet beneath the bottom of the Roanoke River after diverting water and cutting an open trench across the riverbed.

From the pipeline's crossing in the upper Roanoke River to the Niagara Dam is a distance of about 20miles, Tanger said.

The ESI report analyzed potential watershed sedimentation tied to the Mountain Valley Pipeline's crossing of a total of about 3.4 miles of the Jefferson National Forest.

The Forest Service criticized the report when it was first released in June 2016, suggesting it understated how long erosion from the pipeline project would contribute added sediment loads and overstated how much sediment would be diverted or captured by erosion control barriers or structures.

Mountain Valley recently submitted to FER Carevised report by ESI that acknowledges sediment loads will remain elevated for several years after pipeline construction ends. The report notes that "it is expected that sediment loads and yields will reach a new sediment equilibrium approximately four to five years from the start of the project."

Tanger is among a host of others who worry that erosion and other sources of sediment tied to the pipeline threaten the ongoing recovery of the Roanoke River from abuses past.

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

In December, Rupert Cutler and Diana Christopulos — two residents of the region long recognized as knowledgeable environmental watchdogs — advised members of the Roanoke City Council that the pipeline could be a significant source of sediment for the Roanoke River.

Cutler said sediment from the pipeline could be a setback for expensive efforts to control storm water runoff and reduce contamination of the river. He said the sediment also could diminish the Roanoke River's appeal for canoeists and kayakers as the region continues to promote itself as a mecca for outdoors recreation.

The Roanoke Valley Alleghany Regional Commission recently received a $5,000 grant from the Virginia Tourism Corp. to help promote the Roanoke River Blueway.

Cutler was a member of the city council when it helped create the regional water authority and was a member of the authority's original board of directors. He served as an assistant secretary of agriculture during the administration of President Jimmy Carter and provided policy direction for the U.S. Soil Conservation Service, now the Natural Resources Conservation Service.

Christopulos, president of both the Roanoke Valley Cool Cities Coalition and Roanoke Appalachian Trail Club, emphasized that the pipeline's ascent and descent of steep slopes could yield an enormous amount of erosion.

And she encouraged members of the city council to learn more about the project. In February, City Manager Chris Morrill provided the council a preliminary report.

Morrill noted that the pipeline's traverse of steep slopes in Roanoke County suggests "there is a significant risk for erosion" and described as legitimate the concern of increased sediment flowing downstream into the city.

He said increased sediment could impact the city's "ability to achieve progress in reducing sediment, bacteria and PCBs" in the river.

James Golden, director for operations for the Virginia Department of Environmental Quality, said the department is well aware that the Mountain Valley Pipeline project has the potential to be a significant source of erosion and sediment along its route in Virginia.

He said the department anticipates that Mountain Valley will soon submit detailed erosion and sediment plans for the project. Natalie Cox, a spokeswoman for the pipeline company, suggested the same.

"MVP has been working with the Virginia DEQ to develop erosion and sediment control plans that meet the requirements of their regulatory program," Cox said.

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

Golden said Mountain Valley has agreed to pay for additional staff or consultants that DEQ might need to review the erosion and sediment plans and to have inspectors in the field if and when construction launches in Virginia.

He said the erosion and sediment plans will be posted online for public review.

Cutler said government officials must be vigilant watchdogs.

"The protection of the quality of the water in the Roanoke River is a fundamental responsibility of government — protecting health, safety and welfare," he said.

FERC is working on a final environmental impact statement for the pipeline. Mountain Valley hopes to begin construction later this year.

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

William T. Wilson, President
Jackson River Preservation Association, Inc.

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March 9, 2017

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Covington, VA 24426

Chairman Richard Byrd
Bath County Board of Supervisors
P. O. Box 381
Hot Springs, VA 24445

Chairman Stephen A. Bennett
Alleghany County Board of Supervisors
6800 Rich Patch Rd.
Covington, VA 24426

Vice Mayor Robert W. Daniel
Town of Iron Gate
P. O. Box 182
Iron Gate, VA 24448

Mayor Carl Brinkley
Town of Clifton Forge
P. O. Box 621
Clifton Forge, VA 24422

Ms. Rebecca Johnson
Communications Manager
WestRock
104 E. Riverside
Covington, VA 24426

Mr. Brett Schoenfield
Managing Director
The Omni Homestead Resort
7696 Sam Snead Highway
Hot Springs, VA 24445

Mayor Rich Holman
Town of Monterey
P. O. Box 460
Monterey, VA 24465

Re: Dominion's Proposed Natural Gas Pipeline through Bath and Highland Counties

Dear Lady and Gentlemen:

The Jackson River Preservation Association, Inc. (JRPA) has become involved in the debate about whether or not to build a natural gas pipeline through Bath and Highland Counties. We have filed as "Intervenors" in the case before the Federal Energy Regulatory Commission (FERC) and have gone on record against the project.

Early on, I did not think our governing bodies south of Bath County had much of a stake in the debate but as the facts developed, it occurred to me that they did. My

Z-2278

reasoning goes like this: The Jackson River is a precious jewel for the Alleghany Highlands and much of our future, as far as tourism is concerned, is tied to that river. It is reported to be one of the finest trout streams in the United States and has become a recreational Mecca for thousands of local people and tourists. The river parallels the Jackson River Scenic Trail, as you know, and together they act as a huge attraction to tourists.

Anything that seriously degrades that river is a blow to the area and to our economy.

FERC has filed a Draft Environmental Impact Statement (DEIS) but has not seriously addressed the issue I believe to be of greatest importance - and that is the probable impact of floods and Hurricanes on the pipeline right-of-way and the pipeline itself. I am enclosing a draft of a filing the JRPA and the Cowpasture River Preservation Association (CRPA) plan to file with FERC regarding this issue. Dominion's plans call for the pipeline to go up and down steep mountains (some 70-80 percent) and under both Jackson River, at Bolar in Bath County, and under Back Creek, above Dominion's Pumped Storage lakes. Our argument, as you can see, is that floods like ones in 1985 and the summer of 2016 will ravage the pipeline and its right-of-way resulting in massive amounts of silt and pollution in the Jackson River, Back Creek, and their tributaries, and Lake Moomaw.

If the predictable occurs, the ripple effect will be downstream to Hidden Valley, Lake Moomaw and may even adversely affect WestRock's operation in Covington. I am sure the Homestead Hotel has a stake in keeping the Jackson River in good shape.

FERC has given notice that it will receive comments from the public until April 6, 2017. After that, it will issue a final EIS and may or may not grant Dominion a permit. As you can see, time is of the essence.

My hope is that each governing body, WestRock and the Homestead Hotel will examine the probable environmental impacts of this proposed pipeline and make comments directly to FERC. If you need contact information, please call 540-962-4986.

By the way, there are no proposed taps on this pipeline as it goes through Bath and Highland Counties.

May I suggest that we get a delegation together for a guided tour of the proposed crossings in Bath and Highland Counties? I think you will be amazed at the steepness of the mountains over which this pipeline proposes to cross. Please let me know if you will go.

Best to all.

2

Sincerely,

William T. Wilson, President
Jackson River Preservation Association, Inc.

WTW/klc
Enclosure
ccs: Senator Creigh Deeds
Senator Mark Warner
Senator Tim Kaine
Senator Emmett W. Hanger
Congressman Robert W. Goodlatte
Ms. Molly Ward, Secretary of Natural Resources
Mr. David Paylor, Director DEQ
Col. Jason Kelly, PMP, Corps of Engineers
Mr. Bob Duncan, Executive Director VDGIF
Mr. Mike Hayslett, Executive Director CRPA
Mr. Tony Tooke, Regional Forester, Southern Region, USDA Forest Service
Mr. David Sligh, Conservation Director, Wild Virginia
Mr. Nelson Hoy, CRPA President
Mr. Richard Brooks, CRPA
Mr. Rick Webb, Dominion Pipeline Coalition Group
Mr. Greg Buppert, SELC
Virginian Review
The Recorder
Roanoke Times

3

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

William T. Wilson, President
Jackson River Preservation Association, Inc.

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March 13, 2017

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Chairman Richard Byrd
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Hot Springs, VA 24445

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7696 Sam Snead Highway
Hot Springs, VA 24445

Mayor Rich Holman
Town of Monterey
P. O. Box 460
Monterey, VA 24465

Re: Jackson River Preservation Association, Inc. (JRPA) - ACP

Dear Lady and Gentlemen:

As a follow-up to my letter to you dated March 9, 2017, I am attaching an article, dated March 12, 2017, from the Roanoke Times entitled "Pipeline's path stirs concerns for water" which indicates that Roanoke City if waking up to the expectation of "sediment" coming from the Mountain Valley Pipeline (MVP).

We in the Alleghany Highlands have the same "expectation" regarding the ACP and we need to meet and act in concert on this problem.

Z-2281

I look forward to hearing from you.

Sincerely,

William T. Wilson, President
Jackson River Preservation Association, Inc.

WTW/klc
Attachment
ccs: Senator Creigh Deeds
Senator Mark Warner
Senator Tim Kaine
Senator Emmett W. Hanger
Congressman Robert W. Goodlatte
Ms. Molly Ward, Secretary of Natural Resources
Mr. David Paylor, Director DEQ
Col. Jason Kelly, PMP, Corps of Engineers
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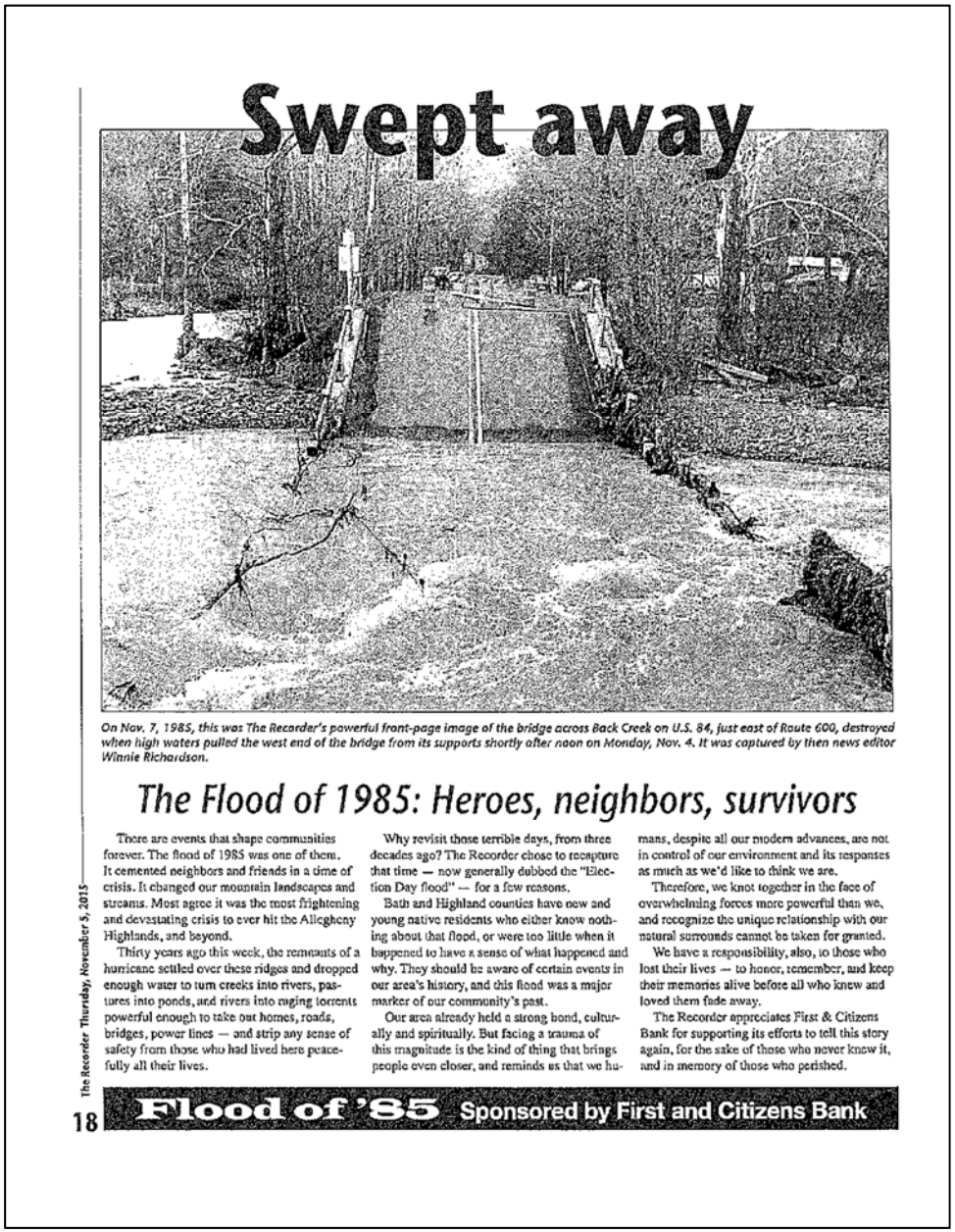
Mr. Mike Hayslett, Executive Director CRPA
Mr. Tony Tooke, Regional Forester, Southern Region, USDA Forest Service
Mr. David Sligh, Conservation Director, Wild Virginia
Mr. Nelson Hoy, CRPA President
Mr. Richard Brooks, CRPA
Mr. Rick Webb, Dominion Pipeline Coalition Group
Mr. Greg Buppert, SELC
Virginian Review
The Recorder
Roanoke Times

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)



Swept away

On Nov. 7, 1985, this was The Recorder's powerful front-page image of the bridge across Back Creek on U.S. 84, just east of Route 600, destroyed when high waters pulled the west end of the bridge from its supports shortly after noon on Monday, Nov. 4. It was captured by then news editor Winnie Richardson.

The Flood of 1985: Heroes, neighbors, survivors

There are events that shape communities forever. The flood of 1985 was one of them. It cemented neighbors and friends in a time of crisis. It changed our mountain landscapes and streams. Most agree it was the most frightening and devastating crisis to ever hit the Allegheny Highlands, and beyond.

Thirty years ago this week, the remnants of a hurricane settled over these ridges and dropped enough water to turn creeks into rivers, pastures into ponds, and rivers into raging torrents powerful enough to take out homes, roads, bridges, power lines — and strip any sense of safety from those who had lived here peacefully all their lives.

Why revisit those terrible days, from three decades ago? The Recorder chose to recapture that time — now generally dubbed the "Election Day flood" — for a few reasons.

Bath and Highland counties have new and young native residents who either know nothing about that flood, or were too little when it happened to have a sense of what happened and why. They should be aware of certain events in our area's history, and this flood was a major marker of our community's past.

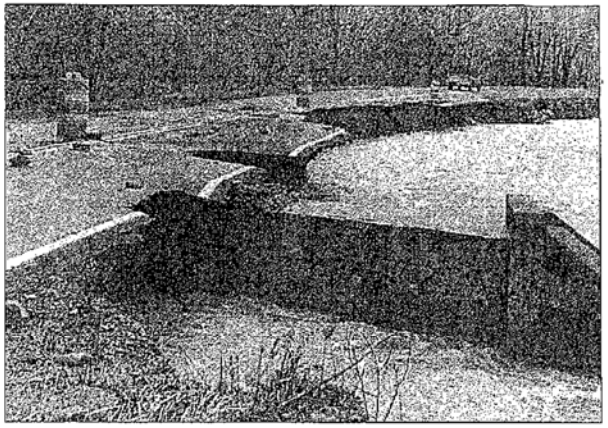
Our area already held a strong bond, culturally and spiritually. But facing a trauma of this magnitude is the kind of thing that brings people even closer, and reminds us that we humans, despite all our modern advances, are not in control of our environment and its responses as much as we'd like to think we are.

Therefore, we knot together in the face of overwhelming forces more powerful than we, and recognize the unique relationship with our natural surrounds cannot be taken for granted.

We have a responsibility, also, to those who lost their lives — to honor, remember, and keep their memories alive before all who knew and loved them fade away.

The Recorder appreciates First & Citizens Bank for supporting its efforts to tell this story again, for the sake of those who never knew it, and in memory of those who perished.

Waters without warning



A large section on U.S. 220 about 12 miles south of Monterey was washed away by the raging Jackson River Monday, Nov. 4, 1985. The cement culvert, which controls the water from a creek on the other side of the road, sustained severe damage. (Recorder file photo)

MONTEREY and WARM SPRINGS — Halloween in 1985 was a dreary, drizzly day, but children looked forward to the haunted house at The Highland Inn. There were fewer little ghosts and goblins about because of the rain, but no one thought much about the gloomy weather.

Bath and Highland residents were gearing up for the following Tuesday's elections. Gerald Baliles was running for governor and Emmett Hanger was seeking re-election to the district delegate seat. President Ronald Reagan was in office. Hunting season was kicking in, and it looked to be a good one for deer. The most exciting news was that after decades of construction, the world's largest pumped storage station was about to go online right here at Back Creek in Mountain Grove.

Little did anyone know then, but that facility would play a critical role by Monday, when the biggest flood to hit this area came without warning.

Over the next 48 hours, the rain picked up and continued — the confluence of a low-pressure system and the remnants of Hurricane Juan, which had twice swept ashore over Florida and Louisiana. What was left of the storm made its way north, running head long into another front. By Saturday, the ground was saturated; by Sunday, the whole mess stalled over the Allegheny Mountains and valleys.

Monday morning, Nov. 4, residents across the region awoke to rising waters. The creeks and rivers were swelling faster than anyone could imagine. "It was so unexpected," a Warm Springs resident said at the time. "It didn't really start raining hard until Sunday night."

By Tuesday — Election Day — homes were lost; dozens were dead; and Virginia and West Virginia counties were declared federal disaster areas.

With waters rising at an alarming rate that Monday, school officials took action quickly, closing Bath schools at 12:30 p.m. But road conditions had already deteriorated so badly the school board decided not to send out buses, and asked parents to pick up their children. Not all of them could be retrieved, leaving about 100 students spending the night at Valley Elementary School and 30 at Bath County High School (see "A night at school," page 20).

By the time Highland schools closed at 1 p.m., water was running across many roads.

According to the Nov. 7, 1985 Recorder, "Most of the students were safely delivered home, but Albert Shultz had to bring some of the children on his bus back to Monterey because the bridge on U.S. 84 near Route 600, had collapsed into Back Creek. The children were later picked up by parents and friends."

Hot Springs residents jumped in to unclog storm drains to lower the water level on Main Street. The creek behind the businesses on the right overflowed its banks, and washed down the street and into most of the establishments during 1985's flood. (Recorder file photo)

Highland superintendent Dr. Jack Gold made plans to reopen the schools at the end of the week, but asked parents to bring children to the main road to catch the bus. "Some places, such as the entrance to Possum Trot, according to Gold, are passible by car, but there is not enough room to safely take a bus through," the paper reported.

Word came that week of two deaths, and two people missing in the Highland area, but none in Bath.

A carload of people traveling to Highland County that Monday included Ruby Skeen, the wife of Bernard Skeen, a former McDowell minister. Mrs. Skeen was driving to Highland from Berkeley Springs, W.Va., with her sister and grandson when their car was swept away. Mrs. Skeen's body was located, but the others were still among the missing by Thursday.

Another family, the Spencers, suffered a similar fate, being swept away from their home along U.S. 220 despite the heroic efforts of a neighbor, Ivan Stone, who tried to save them. (See "A hero lost," page 30).

Rick Armstrong is retired from the Bath County Sheriff's Office and is now president of the Bath County Historical Society. He was a road deputy at the time of the flood. He recalled answering calls starting about 8 a.m. that Monday morning. One was to the Jackson River bridge on Route 39 in the Fassifern Farm area, to block traffic after the water rose over the bridge. "There were several trailers along the road in a low spot. That area was full of water. That is the most vivid memory I have of the flood," Armstrong said.

Rocky Phillips of Mitchelltown had just left a hunting camp on Back Creek in Mountain Grove when the water started rising. "I

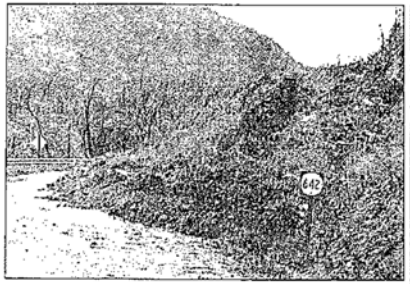
See WATERS, page 20

The Recorder Thursday, November 5, 2015

Flood of '85 Sponsored by First and Citizens Bank

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)



Route 642 between Forks of Water and Blue Grass was blocked by several mud and rock slides Tuesday after the flood. This one covered only half the road. The state highway department and local citizens had the road clear by mid-afternoon that day. (Recorder file photo)

From WATERS, page 19

was at Webb's Store, and the water started running across the parking lot into the store. Within 30 minutes, there was six inches of water in the parking lot," he recalled. "Charlie Lindsay and I put sandbags at the door to keep the water out of the store. We started grabbing everything we could put on top of each other to divert the water back to the parking lot."

Armstrong and Phillips agreed there was no hint that weekend of severe flooding. "I don't recall that it was forecast to be any big deal. I think it was one of those things that just unexpectedly escalated to a big deal," Armstrong said. "It just came on really quickly. It was a very rapid rise in a very short time."

After he left Webb's, Phillips headed toward Hot Springs. "Water was running down Bath Horse Hill. The ditches were full and the water was in the road and on the golf course. Water was in the street downtown. It was three-quarters up on the wheels of the cars that were parked there. The rescue squad had a boat going down the middle of the street. I thought, Lord have mercy, what are we into now?" he said.

At that time, there were only five or six deputies in the sheriff's department under Sheriff J.W. Bryan Jr. "Everyone was called out quickly once the flooding started," Armstrong said.

Armstrong was living on Mill Creek Road in Millboro at the time of the flood. He was building a home and was staying with his mother. Her basement had water in it, but escaped serious damage. Phillips was living in Mitchelltown and his home was not affected. "Some friends of mine had water in their basements," Phillips said.

Phillips remembered removing the debris from Warm Springs Run with the late Urban "Jake" Cleek. "We were just down from The Gristmill. We were trying to get the water to keep going down the creek," he said. "The foot bridge had washed away. We were worried about old terra cotta water pipes running across the creek and were scared the water and debris would break them. Thankfully, the lines didn't break. Stuff was just mashed up and piled up everywhere. It was unreal."

He was using a chain saw and Cleek was clearing debris with his hands. "We looked up and the wheel at The Gristmill was turning. Jake said it had been broken for eight or nine years, but that water was turning it. It had that much pressure," Phillips said.

Following a long day, Armstrong headed home. About one-half mile from his mother's house, a bridge on Mill Creek Road was washed away. "You could hear the boulders moving," he said. But Armstrong was determined. "I parked my car and started to walk home. There was a trail along the bank of the creek, and there was supposed to be a footbridge across the creek. The water was waist deep across the bridge, but there was a cable hand hold. I held onto the cable and walked across the bridge. I went across the road and up a logging road. I then went through the clearing where I was building my house and through the woods to my mother's house. Looking back on all that, I was lucky, very lucky. For whatever reason, I had made up my mind I was going home.

"When I got to my mother's house, I took my gun belt off and dumped the water out of the holster. I had to walk to my car for several days," he said.

Communication was difficult. Most Bath and Highland residents lost power for a short time, but some were without electricity for days following. Long distance service was out most of those two days, making it difficult to get information. Highland Telephone Cooperative scrambled to have long distance restored by Wednesday. Mountain Grove-Williamsville Telephone Co. made many repairs, but awaited the restoration of a line from Staunton. Local phone service was back in Bath County by Tuesday morning but no one knew how long it would take to get electricity or water and sewage restored.

The water system for Warm Springs was under five feet of water Tuesday, leaving residents without drinking water. Cleek was a supervisor at the time, and got the word out that a hydrant at what was the County

See WATERS, page 21

'If there were any heroes, it would be everybody.'

– The late Randy Stephenson, principal of Valley Elementary School in 1985

A night at school

ASHWOOD — While the surprise flooding made many fearful, there was a group who looked upon the whole event as an exciting adventure: Children at Valley Elementary School in Ashwood.

Jackie Stephenson, whose late husband Randy was principal of VES in 1985, recalled, "There were some school buses that could not take the children home because of the high waters in Hot Springs. Hot Springs is where the major flooding was." So, those bus drivers who could not finish their routes had no choice but to turn around, and bring the children back to the school.

"There were more than 100 or so children who were sheltered in the school overnight," Stephenson said. "Of course, they had to be fed dinner. Charlotte Jenkins was the cafeteria manager, and she stayed at the school. Charlotte was instrumental in getting dinner ready for those children. Her husband had a big old truck, so he made it through the water to get Charlotte and bring her home. My daughter Jessica was in kindergarten at the time, and I was working at the central office (Bath County School Board building). I asked Charlotte to bring Jessica to me at the office, since Charlotte lived nearby. When she got here, she was not happy. 'I wanted to stay at school with my friends, because that is where the action is!' she told me.

"There were a whole slew of kids there at the school, and a lot of teachers couldn't get home either. Others made arrangements to stay there to help supervise the kids. They made a plan and activated it: They showed movies and played games; the gym and the library were open. So, those kids were entertained royally until they could get them bedded down for the night," Stephenson said.

Somehow word of the situation at the school reached The Homestead, and someone there sent a truckload of blankets to the school. "I don't recall who the fellow was, or how he got there, or how many blankets – a truckload – and the kids slept on the floors, which were carpeted," she continued.

They needed breakfast the next morning, of course. So, even though school was closed, Charlotte Jenkins made her way back to the school and saw that the children were fed.

Stephenson also recalled, "There was one little boy who was diabetic, and he needed insulin. His parents couldn't get there to bring it, so Randy called the Hot Springs Pharmacy, which was also flooded. But, (pharmacist) Jack Williams was there. He told Randy he'd prepare the insulin, but that Randy would have to come pick it up."

The principal, always nattily attired, left the school in his car and managed to make it as far as the Watchbox, near the back entrance of the hotel.

"He said he took off his socks, folded them up, and put them in his pocket," his wife recalled. "Then, he put his good shoes back on, rolled up his pants above his knees and waded through water to get the medicine. He figured he'd at least have dry socks to wear when he got back to the school."

She said, "It's kind of funny, but some of those kids didn't want to go home the next day, they were having such a good time. Everybody pitched in; it was an emergency and Bath County is always good for that."

Randy Stephenson told the story himself, documented by the Bath County Historical Society five years after the flood. "The children took it all in stride. Some didn't want to go when their parents came for them — they wanted to stay for the festivities," he said. "The Homestead sent over blankets and pillows for everyone. We put the boys at one end of the school, in the library, and the girls at the other. We had no electricity or phones, only candles and flashlights.

"We even had some adults. Parents had come up to get their children and found they couldn't get back home. They spent the night, too."

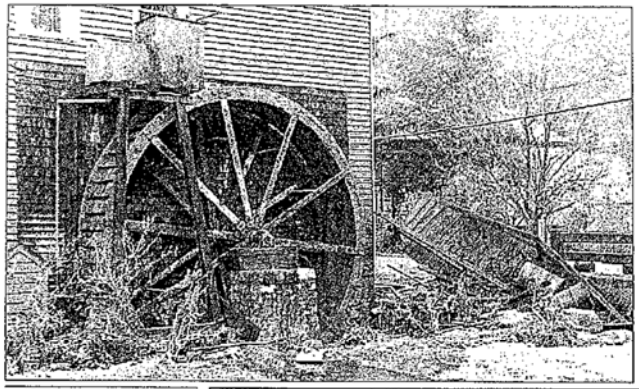
Stephenson said he didn't realize how bad things were until he left the school to pick up medicine for a child in Hot Springs. "It was a very interesting ordeal, to say the least. The night was one I suspect that all of us will remember."

He stayed at the school, and cafeteria workers stayed late to fix hot dogs for the stranded students and arrived early the next morning to prepare breakfast.

Stephenson said he didn't feel he did anything heroic. "If there were any heroes, it would be everybody," he said.

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)



'We looked up and the wheel at The Gristmill was turning. Jake said it had been broken for eight or nine years, but that water was turning it. It had that much pressure.'
– Rocky Phillips

The footbridge to the Gristmill Inn in Warm Springs was washed out. Managers of the inn said the damage to the square was not severe. The wine cellar was flooded but the wine was rescued. (Recorder file photo)

From WATERS, page 20

Seat Exxon Station was turned on for residents to get drinking and cooking water.

Roads were a mess, blocked with so much water and debris by Tuesday morning that many were impassable. Highway department crews got to work fast to open access, particularly to main arteries. By Thursday, U.S. 220 was opened from Highland to Covington, but only one lane in several places.

Travel to Franklin, W.Va., on U.S. 220 north, however, was nearly impossible. The Recorder interviewed one person who somehow made it from Franklin to Monterey Tuesday night. He said only four-wheel drive vehicles would make it. "At a few places, where streams are coming off the mountain, the water was up to the top of the radiator on his Jeep," the report stated. "He described the large chunks of missing highway as a jigsaw puzzle."

Route 600 and the Back Creek area was a big problem. The bridge crossing the creek on Route 84 was knocked from its supports, so highway workers made a few quick repairs to Route 600, from U.S. 250 to Route 84, to create an alternate route to West Virginia and Vepco's Back Creek Pumped Storage Station. "The 12-mile stretch of Route 600 is passable but very slow," the newspaper said. "Creeks were still running across the road in a few places and on Tuesday evening, other spots were wide enough for a pickup truck to pass. The highway department has no estimate on road repairs at this time, because the long distance phone lines have been down."

That bridge, and a section of U.S. 220 south, were going to take the longest time to repair. "Local crews are working long hours to make roads in the county passable," The Recorder reported, but there just wasn't enough manpower to do the major work.

Residents were relieved to learn the new pumped storage station wasn't damaged; its dams were holding and showing no signs of stress, although there had been one mudslide into an interior road at the project.

Doe Hill couple stranded

DOE HILL —A Highland County couple was isolated on their Doe Hill farm for about two weeks as a result of last month's flooding. The fast moving creek washed away Mr. and Mrs. Owen Hiner's driveway bridge early Nov. 4, and they waited out the storm in their home of 43 years.

'They worked all day long one day on the supports ... we are grateful to have such good neighbors.'
– Mrs. Owen Hiner

Mrs. Hiner said her husband slept that night but she didn't. The next morning their yard and fields were full of rocks and water. They said it looked as though three streams were coming toward the house rather than the one that normally flows by.

A plank was put across the creek as a footbridge a few days later when the water receded. The bridge and supports had been rebuilt two years ago, according to Hiner. The locust post bridge remained intact throughout the storm. Hiner said, but the rock and concrete supports were all washed away.

Neighbors made the ordeal much easier, Mrs. Hiner said. They helped their son retrieve the bridge and build new supports. "They worked all day long one day on the supports," she said, and added, "We are grateful to have such good neighbors."

Hiner said he had seen floods in 1939, 1942, and 1949 on his family's Doe Hill farm, but this was the worst and the only one to affect the whole county.

Rocks and debris are still blocking the stream in places, Hiner said. He and his wife have spent days picking the rocks. When people ask why he is doing all the hard work, Hiner said he responds, "Tim hunting for a pet rock."

He continued that he has cleaned rocks out of the stream in the past and will probably do it again.

– The Recorder, November 1985

Because water covered Lightner's Bridge on Route 600 at the north end of the station's lower reservoir, most workers were unable to leave the facility Monday afternoon. Little Back Creek ran through the town of Mountain Grove there, preventing exit in that direction. Once waters receded Tuesday afternoon, roads were opened and workers were allowed to go home.

The project had controlled flooding downriver by allowing only one-fourth of the water entering the station to be released downstream, according to Robin Sultenberger, a spokesman for Vepco at the time. (See "At the station," page 33).

The Dominion Power pumped storage project was preparing to go online at the time of the flood. In fact, the rain filled the reservoir and enabled the project to become operational sooner than expected.

"That project definitely saved parts of Mountain Grove," Phillips said. "Without that dam, the damage would have been much worse up there."

Armstrong said by the next day, the water was still out of its banks in most places, but had receded considerably.

Phillips also recalled water remaining high for some time after the initial flood. When he saw water start running at Webb's, "I figured at that point it would flood. I knew we were in for it. That was something nobody here had ever seen before," he said.

Herb Lightner was a 24-year-old Highland County deputy in 1985; he recalls how different law enforcement operations were 30 years ago. The office was "kind of scarce," he said. "We only had two road deputies back then, and three jailers for the prisoners. Only three dispatchers. There was no 24-hour coverage at all."

Lightner said the office, under Sheriff Milton at the time, knew heavy rains were expected, but there was no advance warning system for sudden flooding. "We didn't have radar or that kind of technology then." But Dennis O'Hearn of the office had designed a kind of makeshift reverse 911 system. "I remember when it started to get bad at New Hampden, we were able to call there and tell some of them to leave," Lightner said.

"We were working all the time and we kept patrolling; emergency services personnel and the fire departments were telling us when roads got impassable, and I remember we were hoping there wouldn't be any emergency because we couldn't transport to Augusta Medical Center and choppers couldn't fly in the rain. But we didn't have any major catastrophe like that. People helped each other."

The Highland County Volunteer fire Department was busy pumping basements. Several homes on the north side of U.S. 250 in Monterey had water and electrical problems when a creek gushed over its banks, filled basements, shorted out electricity and sparked a few small fires. The department

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removed power boxes to insure the safety of the homes until the water receded to safe levels.

One couple in Doe Hill was stranded for two weeks after their bridge washed out. [See "Doe Hill couple stranded," page 21]. "Things were already flooded everywhere so there wasn't a whole lot you could do," Lightner recalled.

At one point, Lightner said, local funeral director Bill Obaugh was beyond frustrated when the sheriff's office got a call from a woman who said her boyfriend had died. Lightner and Obaugh had to take a front-end loader to the place off Shaws Ridge because it was flooded from ridge to ridge in the area. "We got up there," Lightner recalled. "But he wasn't dead. He was drunk."

At the time, Sheriff Milton had what Lighter described as a "loose knit" emergency coordination system, but nothing formal.

"We called the National Guard but they couldn't get here until the roads cleared," Lightner said. "The whole county pretty much cleared their own roads. We had debris, mud slides, and rock slides for months. But it was just like when we have a big snowstorm, everybody helped out. Lots of people were stranded, you know, but they had groceries and canned goods, a wood supply," he said. "With the current being off they couldn't do much. At that time there were not many with generators."

Lightner said it was cold in the nights at the time, but then when it froze and temperatures really dropped, it became difficult to repair anything. "These connectors trying to do the work couldn't do it," he said. "And especially over Hardscrabble and toward Franklin, there was stuff hanging in the trees everywhere."

Following the flood, Phillips went to places he normally hunted in areas like Mountain Grove, Jack Mountain, and Ramsey's Draft in Augusta County. "If I hadn't been there before, I wouldn't have known they were the same places. Trees were crisscrossed and boulders and rocks had been moved 500 or 600 yards down the hollows," he said. "There is still debris in Ramsey's Draft. There are still rocks to this day where they were moved by the flood."

At Back Creek, Phillips said a truck driven by a Covington man was taken about a half-mile down the creek. Fortunately, the driver was not injured. "It just floated him on down the river. He was OK, but he had to get another truck," he said.

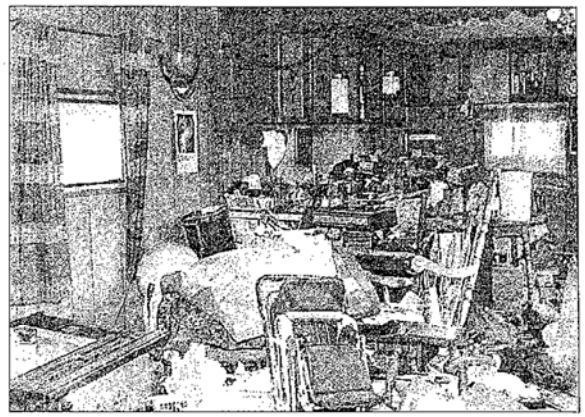
Lightner also remembers emergency officials being concerned about whether the pumped storage station dams would hold. His wife, Theresa, was working there when the flood hit. "We only had two deputies so we didn't have anyone to send down there if they'd needed us, and they had a pretty big staff there."

Lightner couldn't reach his wife, "but last I heard they were just going to stay down there." Turns out, Theresa and Sarah Shifflett tried to make their way home, but only made it as far as Lynn Townsend's place and had to spend the night there.

Meanwhile, most of the time, crews went around unclogging culverts of leaves and debris. "A lot of places flooded just because the culverts were stopped up," he said.

After the flood, Lightner said the sheriff's

See WATERS, page 23



The aftermath of floodwaters in a mobile home at the Fassifern Trailer Court in Bath County was devastating. Observers said water was within two feet of the top of this home late Monday night. (Recorder file photo)

Trailer court residents lose everything

WARM SPRINGS — Three mobile homes in the Fassifern Trailer Court on Route 39 south of Warm Springs were total losses after the flood.

One home was completely submerged while the water came within one to two feet of the tops of others during the height of the storm.

"All three trailers remained on their foundations, but their interiors looked as though they had been picked up, shaken and replaced on the foundations after being sprayed with mud," The Recorder reported then.

"Norma Giles said a neighbor who works for the highway department told her to leave because the water was rising dangerously fast. She turned off the electricity and left her home of 16 years. Upon return Tuesday, Giles discovered that she, her daughter and granddaughter had lost everything but some clothing that could be washed. Mrs. Giles also lost her dog in the flood, but a neighbor's cat found safety on top of a refrigerator."

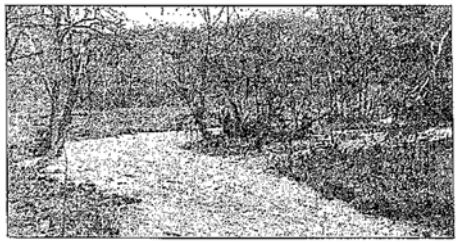
Giles' memory of the time was on record with the Bath County Historical Society. "I was home with my granddaughter, who was two years old," Giles said then. "We left about 1:30 or 2 because the water was rising. Nelson Liprap, a neighbor, offered to help us get out. I asked him to please cut the gas off. When we left, the water had covered the adjoining yards, but there was no water in our yard when we left.

"They told me later that by 4:30, the water was up to the underpinning of our trailer. By the next morning, the water had risen to within two feet of the top of our trailer. Nelson's trailer was covered."

"We went back in the afternoon. It was a mess. The couch, hookcase, chairs and TV were overturned. It looked like the water had lifted up everything and turned it over.

"The flood brings back lots of bad memories. We lost practically everything we owned.

"We got a government grant to help us set up housekeeping. They gave us a list of what we could buy with the money. On Thanksgiving Day, a man came out to assess the damage. We used the grant money to put a down payment on another house and to replace our belongings."



The Jackson River and other creeks in the area rose to the edges of their banks the Friday following the flood, when more than an inch of rain fell on Bath and Highland. No additional damage was reported but many residents waited nervously for the rains to stop. (Recorder file photo)

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CO107 – Jackson River Preservation Association, Inc (cont'd)

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office began working in earnest on an emergency plan, and some standard operating procedures for emergency events. "We tried to think of who had what equipment, and make a formal list of contacts, like who had skidders or big tractors," he said. "I can't remember the first time we started using ham radio operators but it was soon after."

Election Day

Region-wide, not surprisingly, most counties reported a decline at the polls that Election Day, Tuesday, Nov. 5.

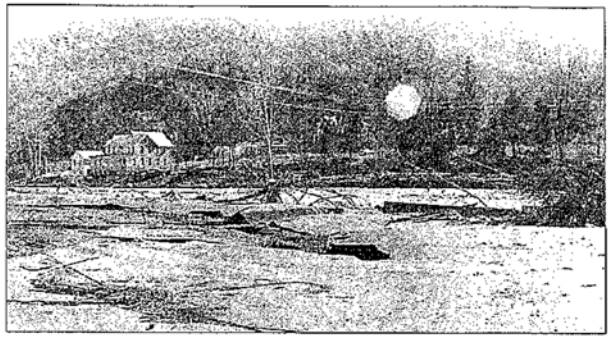
Mary Emma McLaughlin Hamilton, a woman who had voted in every election since 1920, when the 19th Amendment granting suffrage rights to American women was proclaimed, was unable to vote for the first time in 65 years. The road to the McLaughlin homestead washed out; Mrs. Hamilton was 91 that year.

However, her youngest daughter, a grandmother of five, upheld the family voting tradition when she set out from the family farm on Election Day, much the same as her mother did in 1920. Hiking the six miles over the mountain and washed out terrain, 59-year-old Norma Hunt reached the polls before they closed that Tuesday to cast her ballot.

Former Bath County registrar Louise "Lou" Plecker retired after more than 28 years in 2011. At the time, she recalled 1985 as being the most unusual Election Day in her career.

"The day before the election, the courthouse had to be closed because of the flood," she had recalled. "We had to change the Hot Springs polling place to the hardware store in Mitchelltown. I had to use lamps and candles in the office all day on Election Day. The current finally came back on about 7:30 p.m." That was just before results began coming to the office from the polling places. "Luckily, the lights came on in time for all that to be turned in," she said.

Courthouse records indicate, remarkably, that voter turnout here was still higher than the state average in both counties.



Most of the town of Franklin, W.Va. escaped damage from the rising flood waters. This road along the banks of the Potomac served Franklin Enterprises and Monongahela Power, two businesses that were the most heavily damaged. (Recorder file photo)

West Virginia in dire straits

While Highland and Bath residents reeled from property damage, reports began trickling in from neighboring Pocahontas and Pendleton counties in West Virginia — and the situation was much worse there — 22 counties were declared a federal disaster area. Communication was limited to ham and police radios because of the downed power and telephone lines. All roads to Marlinton, Parsons, and Petersburg were blocked by floodwaters. As many as 800 people in Marlinton were completely stranded.

The Recorder spoke to Pocahontas sheriff's deputy Craig Doss at the time. "Half of Marlinton is gone," he said, adding that "several people lost their homes, including me. Water took mine right down the river."

The Greenbrier River was expected to crest at 25 feet — eight feet above flood stage — setting a 100-year record. The highest levels would hit Marlinton and Alderson.

West Virginia would suffer some $700 million in damages; 38 people lost their lives.

Williamsville blocked

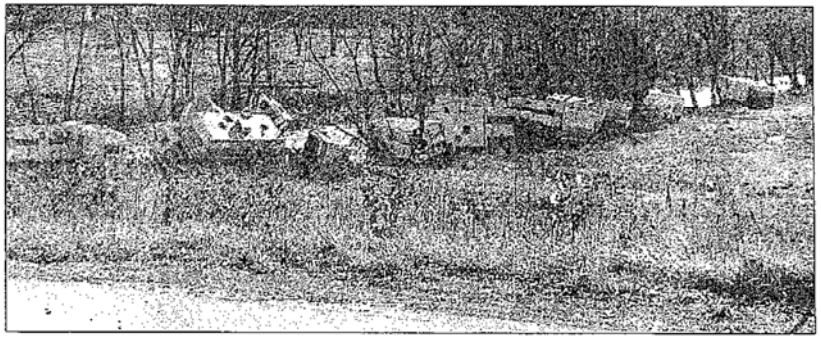
By Wednesday, the rain was gone and power returned to most of the area. Clean up began, even in Mill Gap, though power didn't return to that area for seven days. Bath and Highland had been certified to get disaster aid; damage was estimated in the millions.

Williamsville was particularly hard hit when the Cowpasture and Bullpasture rivers overflowed their banks and did substantial damage to the roads and farmland in that area.

The Cowpasture rose eight feet above Route 614 in many places and deposited tons of rock and debris in pastures and fields. The road was diverted through an alfalfa field until the highway department could clear rock and debris from the road.

Phillips recalled scenes from the area. "There were hay fields in Williamsville going towards McDowell that were full of river rocks. People got relief from the state

See WATERS, page 24



Recreational vehicles at the Cave Country Store camping grounds along U.S. 220 north near Franklin, W.Va., were battered about by the rushing waters of the South Branch of the Potomac River. Many of the RVs were swept down river and were total losses. (Recorder file photo)

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to get the rocks out of their fields," he said.

Route 678 in the Williamsville Gorge was closed until Saturday afternoon, leaving one camper trapped but safe.

The only others trapped were the Adams family — Jim and Betti Adams, their four small children, and Jim's brother, Byron, who lived a mile down the road from them. They were trapped for two weeks.

The Adams brothers had a hunting guide business and it was the first day of fall turkey season. "One guy even showed up, ready to hunt," Byron Adams recalled. "We couldn't figure out how he'd gotten in there."

They had no electricity or water, but they had plenty of food because they had just stocked up for a group of hunting clients. For water, they used an old hand pump. "I remember it stunk, like sulphur," Adams said, "but for some reason, it made the best coffee."

He recalls walking that Monday to his brother's house. "When I left, the water was over my ankles; when I walked back, it was up to my knees."

After two weeks, he picked a spot that "looked good," and forded the stream in a Jeep to get out.

Assessing the damage

By Tuesday a week later, the only road still closed in Highland was Route 642 over Middle Mountain; residents had another way out, however.

A temporary one-lane bridge was built over Back Creek on Route 84 to replace the destroyed bridge, and the washed out area on U.S. 220 south of Mustoe was filled with rock and dirt to make it safe for traffic. Highway department supervisor at the time, Robert Marshall Jr., couldn't say when repair projects would be finished.

In Bath County, David Mead of the highway department reported no one had been trapped by closed state roads, but in some cases, people had to go about a half-mile out of their way to reach a main road.

Three Bath bridges had extensive washout, exposing their pilings and making them unsafe for heavy vehicles — Route 39 over the Jackson River, Route 620 over the Cowpasture River, and Route 614 over the Bullpasture in Williamsville.

Mead told Bath supervisors that week that 90 pieces of road repair equipment and the manpower to operate it were being used in Bath County alone.

The Homestead resort suffered the most substantial damage of area businesses. Flood waters left three inches of mud in many of the first floor rooms and the convention center. Both the Upper and Lower Cascades golf courses had new creeks, gullies and hazards. Four fairways on the Lower Cascades would have to be completely redesigned and reconstructed.

None of greens were severely damaged. Hotel spokesman John Gazzola said at the time that the "hotel is fortunate because greens are expensive and would take a great deal of time to rebuild." (See "Homestead suffers losses," page 29).

Major repairs and clean up were delayed because the ground was so soft that heavy equipment needed to move debris off would cause more damage. The hotel waited for ground to freeze or become firm.

At the Upper Cascades course, seven holes were damaged; sand traps were washed out on the 13th hole and were filled with rocks and boulders. Eight holes on the Lower Cascades were damaged, with the second and 18th holes completely ruined.

Then Homestead president Thomas Lennon estimated it would cost $300,000 to repair both courses, but hoped they would be open by April the next year.

The Virginia Trout Company in Monterey could barely begin to assess the extent of its damages. Company president at the time, David Johnston, said the greatest damage occurred when the Jackson River flowed into the spring fed raceways south of Mustoe.

The main hatchery north of Monterey was a dumping ground for mud from the fast running spring that feeds the facility. Johnston said they had found no dead fish but believed fish were out of the raceways and the river and stream were pretty well stocked.

Damages to area homes ranged from flooded basements to washed out porches and foundations to total loss of mobile homes. Three mobile homes in the Fassifern Trailer Court on Route 39 south of Warm Springs were total losses. (See "Trailer court residents lose everything," page 22).

West Virginia devastated

Bath and Highland suffered a lot of damage, but neighboring West Virginia counties faced far worse. Most businesses and homes

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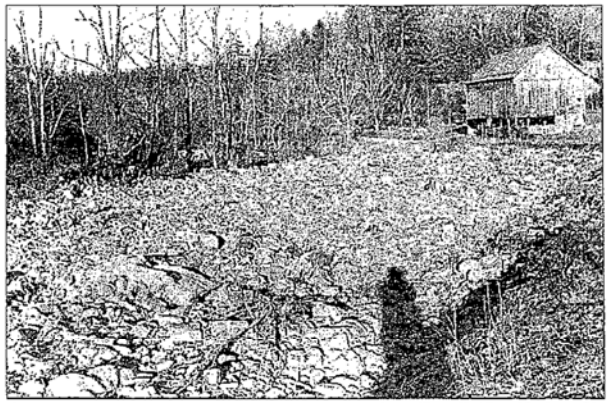
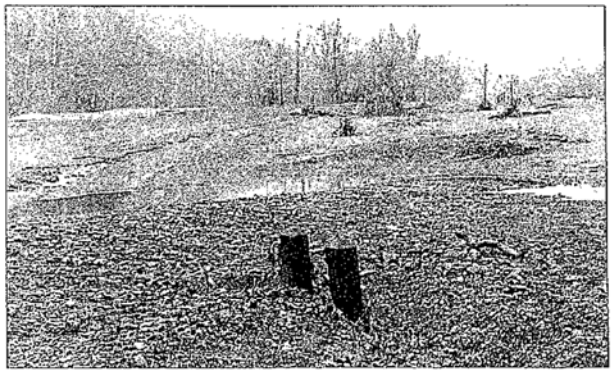


The Cowpasture River deposited tons of river rocks on Route 614 north of Williamsville. The sudden force of the often dry river moved the road from the tree line on its banks into an alfalfa field and took an untold amount of fence and pasture with it. (Recorder file photo)



The tee and fairway of the 14th hole on the Lower Cascades golf course was covered over with rocks and other debris in the Nov. 4 flood, turning the well-kept greens into a moonscape. (Recorder file photo)

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COMPANIES/ORGANIZATIONS COMMENTS

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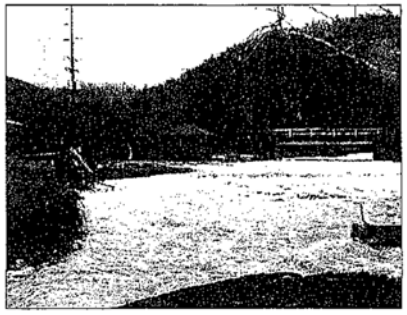
The road in front of The Homestead purchasing office was washed out. (Photo courtesy Bath County Historical Society)



The Lower Cascades golf course was ravaged. (Photo courtesy Bath County Historical Society)

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in Marlinton were ruined and a large portion of Pendleton County was without water, sewage and other utilities.

The National Guard was called into Franklin to help coordinate a relief effort. The town was not damaged as severely as the western and northern areas of the county. Riverton, Circleville and Cherry Grove were among the worst hit communities, but the flood control dams on the South Fork of the Potomac had helped lessen the damage in the Franklin area. Officials told The Recorder the loss of life there was remarkably low, all things considered. At the time, the latest official report said 10 people had died and six were still missing in Pendleton.

Utility service in the county was sporadic. Telephone and electric power service was available in scattered areas but there was no drinking water and sewage treatment facilities were not operational throughout the county. Pit privies were dug, but trucks could not travel to service them.

Many roads were closed; others were open for one lane travel only. All told, 708 bridges were completely gone and seven more on major thoroughfares needed repair and were unsafe for heavy vehicles in Pendleton alone.

State health officials began burying thousands of dead chickens and turkeys from poultry farms; livestock were posing a health hazard downstream if the carcasses were not disposed of properly.

The relief effort, however, was strong. Food, supplies, clothing and money were donated, including much from Highland. Blue Grass Puritans that month donated $1,000 to the Franklin Puritan Club, and one Blue Grass woman contacted South Carolina churches for assistance. (See "Carolina churches send aid," page 27).

In Pocahontas County to the west, the clean up effort was also in full swing. Marlinton had lost power, phones and water. Most utilities were operational a week later, but phone service was scattered. All businesses and most homes in Marlinton were damaged from the four to six feet of water that flowed through the town. But most buildings downtown appeared to be structurally sound, and business owners were cleaning their establishments preparing to reopen. Many homes, especially trailers, were severely damaged. Porches, family rooms and garages were torn from many houses. Others were totally destroyed when the buildings were washed off their foundations.

"There is light at the end of the tunnel," one official told The Recorder. "We are going to rebuild the county to be as beautiful as it was before the storm."

National forest struggles

The flood hit just before rifle season was

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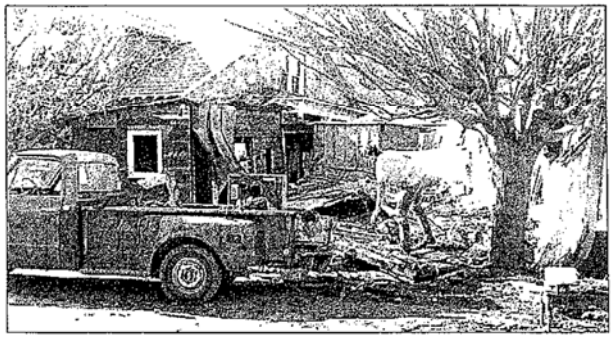
Golf carts at the Lower Cascades were moved around like toy cars during the flood. (Photo courtesy Bath County Historical Society)



A Marlinton, W.Va. resident was found clearing debris Saturday after the flood. The Greenbrier River had washed over its banks and inundated much of the town. (Photo courtesy Zona Landes)

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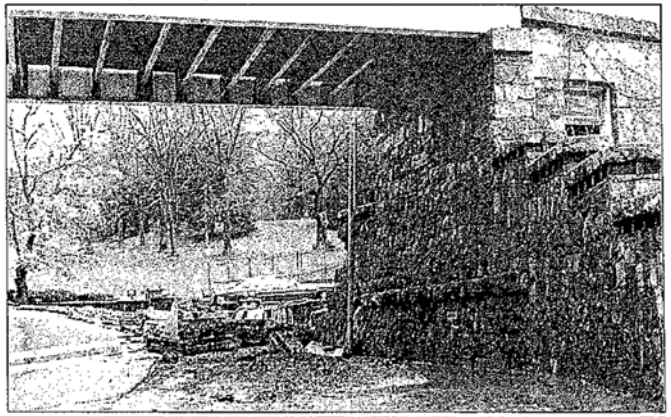
COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

Main Street in Hot Springs was covered in rushing water during the flood of 1985. (Photo courtesy Bath County Historical Society)



The retaining wall and parking lot to The Homestead golf course were severely damaged during Monday night's flooding. The hotel suffered other damage but no injuries were reported and guests were reportedly taking the adventure in stride.

(Recorder file photo)

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licking in, and the national forest lands were a mess. The Deerfield District, like others, set up visitors' stations to provide information to hunters and campers who might not have known about the flood. Most of the damage was to forest service roads with culverts washed out, bridges, and ditches. The extent in Deerfield alone was estimated at $450,000, but officials hoped to have main roads open by rifle season.

The Braley Pond area, Mountain House, Ramsey's Draft Road, Hodges Draft road, Jerkemtight, Stone Lick, and the south end of Walter Mountain were all closed.

Forest supervisor George Smith gave an overview of the situation. "Dozens of forest roads have been washed out, with bridges and culverts destroyed in all six districts of the forest. Crews from the George Washington have been out every day since the rain stopped and we have workers and equipment from the national forests in Kentucky and North Carolina but we still don't even know all the damage," he said. "Large areas of the forest will be inaccessible by vehicle, including many recreation areas and campgrounds ... This will certainly cause inconveniences for many outdoors people, and ruin the hunt for many others this year, but it is really a small piece of the catastrophe as compared to the loss of lives, homes and possessions many area residents have suffered."

In the Warm Springs District, all roads usually open for deer hunting were opened, but most were much shorter. Astonishingly, it was one of the best hunting seasons on record.

Experts come to help

In Monterey, nearly three weeks later, a federal flood office opened as a Disaster Application Center for those who incurred damage to apply for help. Representatives from Farmers Home Administration, Small Business Administration, and Veterans Administration took applications for relief funds and grants for families.

Virginia Cooperative Extension agents issued warnings about the dangers of food contaminated by floodwaters with high concentrations of disease causing bacteria.

Residents were instructed to drain water heaters to remove sediment and silt.

When the Federal Emergency Management Agency set up Disaster Assistance Centers in Bath and Highland to assist residents in finding temporary housing and financial aid for repairs, that's not what they discovered residents needed most. The majority of them wanted assistance for cleaning and re-channeling creeks in Highland. The manager did not know where to send the people, and made several calls to Richmond and the county courthouse until he found that county clerk at the time, Sue Dudley, was the right source. Dudley was compiling a list of people, locations and damage to streams for the Army Corps of Engineers.

The Corps was set to assess damage and determine if creeks need to be dredged to help prevent future flooding. Requests from area farmers had prompted the county to ask the Corps to come to their aid.

The Soil Conservation service was in charge of rechanneling streams if their new

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Women from Highland County volunteered their time to sort hundreds of bags of clothing donated toward the relief effort in West Virginia. (Recorder file photo)

Carolina churches send aid to victims

BLUE GRASS — Floods have a way of stripping families of homes, land, livestock, loved ones and collections of worldly belongings. In the aftermath of such tragedy, human kindness and generosity help to rebuild and replace what was lost.

Members of several Methodist and Baptist churches in South Carolina recently showed such kindness to flood victims of nearby Pendleton County, W.Va. by delivering a rental truck full of clothing, diapers and 100 cases of baby food.

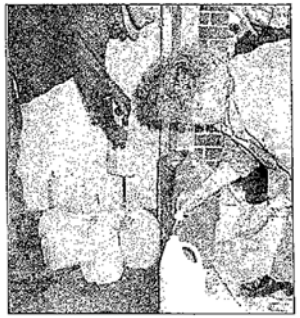
The long distance relief began with a phone call from Blue Grass resident Mary Schooler to her parents, Mr. and Mrs. Charles D. Davis of West Columbia, S.C., on the Saturday following the recent flood. She told them of the need for clothing and food for flood stricken residents in nearby West Virginia. The Davises contacted several local ministers and asked them to announce the call for help during their church services the following day. The congregations of (more than a dozen) responded without hesitation.

By the following Thursday, Nov. 14, the Davis garage was full of donated items to be sent northward. The Davises and the Rev. Franklin Bole, pastor of a (South Carolina church) rented a 14-foot truck and drove the goods to Blue Grass the next day. Members of the Blue Grass Volunteer Fire Department unloaded the vehicle on Friday evening and transported the goods to Franklin the following day.

The call for help was particular important to the Rev. Charlie Yoho of Oakwood Baptist Church in West Columbia — he was the former pastor of Wayside Baptist Church in Franklin.

"We could have done more if we had more time, but Mary said it was urgent," Davis said.

— From The Recorder, November 1985



Left, Jim Tennant and the Rev. Rob Sherrard of Windy Cove Presbyterian Church pumped 340 gallons of water out of the church's fuel oil tank. Three feet of water stood in the Millboro Springs church that Monday night. At right, Homer Helmick and Lucy Varner of Monterey filled jugs with water at the Highland rescue squad building. Area citizens and Shenandoah's Pride and other dairies donated the jugs to transport safe drinking water to West Virginia flood victims. (Recorder file photos)

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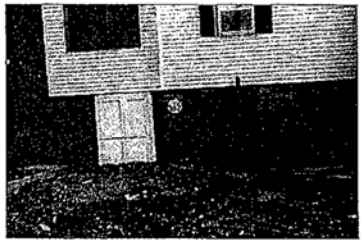
Floodwaters rushed past Mary McElwee's house in Crowdertown. (Photo courtesy Bath County Historical Society)



Water was very close to Don Ryder's house in Crowdertown, above, and piled debris right next to the home, below. (Photos courtesy Bath County Historical Society)

The flood was a terrible tragedy, a fierce reminder of the power of nature to overtake us no matter how prepared we think we are.
~ Congressman Jim Olin

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paths posed a threat to life or property. The ASCS was in charge of removing debris from fields and replacing washed away fences.

The Bath County center averaged 35 people a day and more than 60 applications for temporary housing were taken in the first three days.

A FEMA representative told The Recorder, "In this rural flood situation it is very hard to cover everyone," and noted the difference between this event and a tornado disaster. "You know exactly where the twister touched down. Here, you don't know about the people back in the mountain hollows."

Life returns to 'normal'

Clean up and repairs following the flood lasted weeks, months, even years. To this day, in Pendleton, Pocahontas, Bath and Highland, there are residents who can point to the water lines forever nicked into the walls of their businesses and homes.

But as Thanksgiving approached, the usual special events, dinners, and church services were held, and residents bonded with family and friends over the tragedies and frightening experiences of the storm's wrath.

Congressman Jim Olin, in his Thanksgiving message Nov. 28, summed it up: "For some people, it might be hard at first to think of the many things we have to be thankful for this year," he said. "Much of the 6th District has just suffered its worst flood in recorded history. Many people have lost everything they've worked for all their lives ... The flood was a terrible tragedy, a fierce reminder of the power of nature to overtake us no matter how prepared we think; we are. We will not fully recover for a long, long time.

"But I think the flood reminded us of something else. It showed how strong and good our people are when faced with an emergency, how willing they are to help each other."

Many creeks and streams now are routed differently than they were before the flood, Rocky Phillips noted. "Nothing like that had ever hit Bath County before. Water is probably the most powerful thing there is. The flood and the derecho are the two worst things ever to hit here." He recalled hearing people say a large flood would never happen in this area because the mountains would help hold the water back.

"It just goes to show, things can happen no matter where you are," Phillips said.

Herb Lightner, who after the flood went on to serve more than 30 years as Highland sheriff, gives credit to residents of the area for helping one another through the worst storm in the area's history.

"It was a community effort," he said. "It was then, and it always will be, a community effort back here."

Mrs. Ralph Shaver of Bacova described the location of her property damage to map reader Sam Guerrant at the Disaster Assistance Center in Hot Springs following the flood. (Recorder file photo)

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

Cottage Row at The Homestead was under water during the flood of 1985. (Photo courtesy Bath County Historical Society)

Homestead suffers damages to buildings, greens

HOT SPRINGS — John Gazzola was director of public relations at The Homestead during the flood. The resort suffered the greatest amount of property damage, but also made some of the greatest contributions to the community at the time. Damage to the interior of the hotel was estimated at nearly $1 million.

Gazzola's recollections were preserved by the Bath County Historical Society as follows:

"Thanks to the foresight of Mr. Tom Lennon, the interior damage was covered by flood insurance," Gazzola said. "Of course, we couldn't get insurance on the golf courses, and damage to our three courses and other parts of the grounds added another $750,000 to $1 million on top of that.

"The furniture on the first floor was severely damaged and had to be replaced."

Also damaged, Gazzola recalled, was oil carpeting in the 1,500-seat conference center below the first floor of the south wing. He estimated there was three feet of water on the conference center floor.

Water brought huge boulders tumbling down onto the Old Course. The Upper Cascades course had "very extensive damage" to the 12th, 13th, and 16th holes. The first hole of the Lower Cascades "looked like the North Sea or something," Gazzola remembered.

The retaining wall at the foot of Bath House Hill gave way under pressure and spilled out onto U.S. 220 in Hot Springs. Gazzola's car was in the golf course parking lot near the retaining wall. When he finally made it to his car that evening, the vehicle had two or three feet of water inside.

"I decided to get the damage repaired and keep the car. That was very foolish. It never ran well after that. My advice to anyone whose car suffers flood damage is let the insurance company declare it a loss and be done with it.

"It was tragic for a lot of people; there were many unspoken heroes who chipped in."

About the storm

- *Hurricane Juan was an erratic tropical cyclone that looped twice near the Louisiana coast. On Oct. 27, 1985, the storm became a hurricane, reaching sustained winds of 85 mph offshore southern Louisiana. Juan continued to the north and was absorbed by a cold front, its moisture contributing to deadly flooding in the Mid-Atlantic. Overall, Juan caused about $1.5 billion in damage, making it among the costliest United States hurricanes.*
- *The 1985 Election Day floods produced the costliest floods in both West Virginia and Virginia in November 1985.*
- *In Virginia, rainfall peaked at 19.77 inches. The rains increased levels along rivers to record heights, including the James River, which crested at 42.15 feet. The Roanoke River rose 18.57 feet in 10 hours to a peak of 23.35 feet, considered a one in 200 year event. Considered the worst flood on record in the city, Roanoke sustained $225 million in damage, with 3,100 damaged homes and businesses. Throughout Virginia, damage was estimated at $753 million, making it the state's costliest flood at the time, and there were 22 deaths.*
- *In West Virginia, 27 river gauging stations were at one in 100 year events, mostly along the Potomac and Monongahela basins. High waters washed away topsoil and thousands of trees, and over 13,000 homes and businesses were damaged or destroyed. Damage was estimated at nearly $700 million, making it West Virginia's costliest flood, and there were 38 deaths.*
- *The flooding spurred changes to warning practices by the National Weather Service and the Government of Virginia.*
- *In Highland County, the floods damaged 350 homes or barns, and deteriorated $2 million worth of roads.*

— Wikipedia and other sources

The Lower Cascades golf course was inundated with water during the 1985 flood. (Photo courtesy Bath County Historical Society)

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COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

A hero lost

FRANKLIN, W.Va. — Undoubtedly one of the first stories to surface when people recollect the events of the 1985 flood is the one about Ivan Luther Stone.

Stone, they'll tell you, was a hero. A man who would always go out of his way to help others. He lost his life that Nov. 4 doing just that — trying to help neighbors.

Just the week before the flood, Willard Randolph Spencer, his wife Mary, their son Willard Randolph Spencer II, and Mrs. Spencer's mother, had moved from Monterey to what was the old section house, Haynes Mountain Treasures. It was located along U.S. 220, just north of the border between Highland and Pendleton counties.

As the waters of the Potomac began to rise, the family took refuge atop their home early Monday afternoon, but declined offers to be evacuated.

Ivan Stone, who was their neighbor, arrived on his tractor. "He went down there twice," recalled Herb Lightner, a Highland deputy at the time. "He had an International, a really big tractor, and he was trying to get them on the cab." They didn't go.

"Someone had a skidder," Lightner said, "but the holes were so big (under the water) he couldn't get there."

Apparently deciding they'd better leave, the Spencers called Stone once more.

It was getting dark, according to reports, and Stone couldn't tell the high waters were too much for even his large tractor.

Glen Rexrode of Forks of the Water shook his head recently, remembering the awful day. "I guess he just couldn't tell how high the water was and it just flooded the tractor up and off," he said. "They found him later a good bit downstream."

Lightner agreed. "He couldn't see it. It was dark, and it was a really big hole. The road had gone to stream," he said.

By Nov. 7, Stone, Mr. Spencer, and the Spencers' son had been found, but Mrs. Spencer and her mother were still missing at the time.

"He was the kind of man who if somebody needed something, he'd be there," Lightner said. "So, I wasn't surprised he tried to help that family."

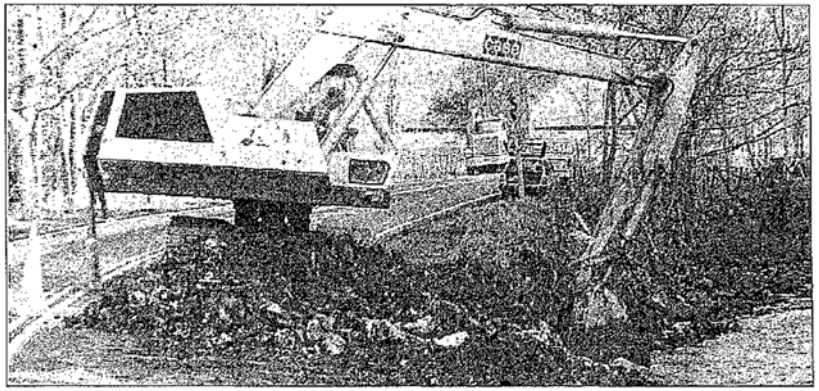
No one could get to Franklin, W.Va., nor Obaugh Funeral Home in McDowell, so Mr. Stone's body was kept at the sheriff's office until roads became passable, Lightner said.

The heroic Mr. Stone was only 58 at the time of his death. He had been a self-employed farmer, a U.S. Marine who fought in Korea, and a member of Harper Chapel United Methodist Church.

He left behind his wife, Dorotha "Dot" Stone, a brother, and two sisters.

Mrs. Stone still lives in Franklin; she called on The Recorder recently, her pain still visible, saying she could not bear to talk about that awful day, but instead provided a lovely memorial about her husband, which is published on page 14 in this week's issue.

The fast-moving current of the South Branch of the Potomac carried this home down river about a half mile before it came to rest on the riverbank at U.S. 220 south of Franklin, W.Va. (Recorder file photo)



Pictured is the bank of the Jackson River being rebuilt after the flood. Plecker and Sons Excavating of Millboro dumped tons of fill rock in the area along U.S. 220 south of Mustoe that was washed out by the flooding. (Recorder file photo)

Walls of water pound Hot Springs

HOT SPRINGS — Clifford Williams was working at his garage that Monday, which at the time was down at Bacova Junction, south of Hot Springs.

"I went to work like a normal day. Along about 9 a.m., I got a phone call. I had the motors out of three cars, at once. The motors were on the floor, and the phone rang. It was a guy who had broken down near the intersection at Eden Church. He had run through a puddle and flooded out. I went down and got him going, and went back to the shop. That is when everything started breaking loose."

When Williams walked into his shop, "I'd no more than gotten in the door when I heard a big roar. I looked out the door and there was a wall of water coming – I mean a wall; so much, I couldn't get the big garage door shut. The water came in through the front and out the back, and over the 27 cars I had there. The cars were banging around against each other – there was no place for them to go. The water finally knocked the wall down; it is still down to this day."

Williams decided he'd best try to head for home. "But I couldn't get home because the bridge at the Lower Cascades was washed out. The bridge at the falls was washed out, and one up at the Upper Cascades was washed out – couldn't nobody get in or out. So I came back up Route 615 to the (Hot Springs) firehouse."

The fire and rescue people who had made it to the station began picking up people at their homes and bringing them to the firehouse for shelter, Williams said. "I know at least one woman had to be gotten out by boat. We were busy, out rescuing people, all night long."

One of those people was his own sister, Darlene Carpenter. She was a deputy clerk of the circuit court at the time, and working at the courthouse. Most of the staff in the courthouse offices had already tried to make their way toward home. There was no electricity, no telephone service, and cell phones hadn't even made their way into Bath County yet. Carpenter's only contact with the outside world was the sheriff's office next door. They told her Hot Springs was complete flooded; she had no way to get home. Finally, Carpenter was the only person left in the courthouse. And then – her brother Clifford Williams shows up in a fire engine, and whisks her away toward home.

When Williams finally made it back to his garage days later, he was devastated.

"Those three engines I had on the floor? When the water rushed through, parts of them probably ended up in Virginia Beach. And, I had to make all those cars – 27 of them – run again. There's no telling how much that ended up costing me. No one had flood insurance back then, that I know of. I think it was almost a month before I got that place cleaned up down there; I had to borrow a front-end loader to do it."

Williams recalls several of the plights faced by residents whom the flood also adversely affected.

"The day after the flood, a wrecker was called from Covington to help out Lane Ryder. He had tried to drive up Falls Road. The bridge was washed out, and the water just dumped him right down there in the creek. It took two wreckers just to get him out of there, where he'd spent the night.

"Harold Fry went looking for his car and couldn't find it. It was in a big, deep hole behind the purchasing office" below the Hot Springs firehouse. Johnny Grazzola's car was washed away. When we heard that on the scanner, that is when we really knew it was very bad."

Three days after the flood, the Hot Springs fire and rescue personnel turned their attentions to neighboring locations facing even worse trouble.

"We got a crew together and went over to Marlinton. That place was really devastated," he said, shaking his head at the recollection of what he witnessed. "I actually saw a house floating down the river. It was unbelievable."

"It was very traumatic for everybody," said Clifford's wife Mary Ellen, who also had a flood tale to share. She was assistant manager of The Homestead, and on duty at the time.

"You could not get from the hotel to the other side of (Route) 220, there was just so much water running down; wherever you were, you were trapped by water. I was on duty in the lobby. It was raining, but that was it – raining. I looked down at some papers, and when I looked back up again moments later, the whole front of the hotel was just brown water, moving very fast. It happened in a split second. One minute it was just raining, and the next minute, there it was: a flood."

All hell broke loose shortly after 9 a.m., and by 11 a.m., Hot Springs was inundated.

"We had hundreds of Christian women at a conference," Mary Ellen said. "Thank God many of them had already departed, but those who had stayed until that next morning went right to work helping people. Nobody complained; everybody helped if and where they could. The employees where were there had to spend the night; they couldn't get home, and they were needed around the hotel. Even Mr. (Thomas Lennon, hotel president) was there. The power was out. I was up in the lobby for 24 hours."

When the firehouse downtown filled up with refugees from the flood, "the firetrucks would bring the overflow up to the hotel for the night. One little girl came in with her hound dog. This was when no dogs were allowed in the hotel. I just looked at that little girl and her big hound dog and told her, 'Don't make any noise!' It was just so hectic, but everybody was doing what had to be done. The next morning at 8 o'clock, standing in the lobby reminded me of a big cruise ship, just surrounded by the water," Ellen Williams said.

The Williamses both recall that the power was out for several days. But, the hotel had generators, and so was able to feed guests and refugees. What did they feed them? No one remembers. "I didn't get to eat at all," Mary Ellen said. "Us neither," said Clifford.

Two other couples – Brian and Sue Puhle and Paul and Maggie Marian – were also on the hotel staff Nov. 5, 1985, although both couples have since retired.

Maggie Marian worked at the front desk. "That was the day they were giving us our 'years of service' awards, so I went in to get my award," she said. "I was wearing high heeled shoes. When I went to leave the hotel to go home, I stepped outside and the water was terrible. You couldn't get across 220."

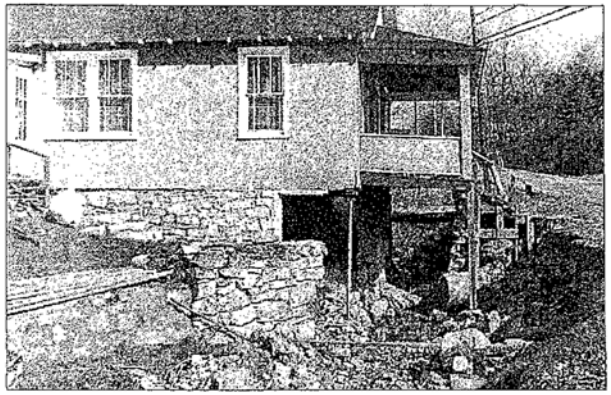
Maggie doesn't recall how she made it home to Natural Well through the gushing water. "There were big rocks in the road everywhere; it was just terrible."

"The water just broke loose," said Paul, who was home in Natural Well at the time, but scheduled to work in the hotel kitchen the next day. "I started to work and the bridge at the Lower Cascades was washed out, I couldn't get over there, so I decided well, I'll go down through the Falls and head up on 220. I got to the Falling Spring Road and that bridge was gone, too. So I came back on 687, planning to come in to Hot Springs that way. But there was a mudslide, and I couldn't get through. I finally made it back home and tried to call the hotel, but all the lines were down. So, I got a day off, but I spent it running all over the county trying to get to work!"

Sue Puhle was working in the hotel kitchen. She recalls, "My grandmother was in the hospital, so I had to leave work. My brother came by to pick me up. When I got outside, there was water everywhere. Walter Follies had to pick me up and carry me across the water to my brother's car." She was amazed at what she saw. "In back of the casino, cars that had been parked were just floating around!"

"It was just so devastating. Nobody knew it was coming," Clifford Williams said.

His wife added, "You just can't appreciate it unless you saw it. And I certainly hope it never happens again."



The foundation and basement of Grace Simmons' home were washed away as fast-moving waters flowed through a culvert under U.S. 220 in Healing Springs. (Recorder file photo)

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COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

Lucky to be alive

HOT SPRINGS — A Bath County man suffered a concussion when the truck he was driving plunged into the rushing Falling Springs Creek during the height of the storm Monday, Nov. 4

C.L. "Lane" Ryder of Ashwood, who was on his way to pick up his father in Covington, rounded a turn on Route 640 and saw a bridge and road were washed away. Ryder was unable to stop his vehicle and crashed into the water.

He says he cannot recall what happened next, except that the truck was beginning to fill with water and he had only a small pocket of air to breathe.

"I don't remember anything until I was hanging onto a tree," said Ryder, adding that he is unsure how he got out of the water.

Luke Meadows of Hot Springs apparently heard Ryder calling and rescued him. Meadows took his friend to Health Springs and the Bath County Rescue Squad transported him to Bath Community Hospital.

Ryder, who was suffering from hypothermia when he was admitted, remained in intensive care Monday night and part of Tuesday.

He was released from the hospital last week and has returned to work at Sam Snead's Tavern. Ryder said he was in a lot of pain after the accident but felt "lucky to get out of there alive."

Ryder recalled the events for the Bath County Historical Society five years later:

"I spent most of the day around Bath County helping people out," Ryder recalled. "I ran kids home from school, things like that. I got in touch with my father that afternoon. He worked at the post office in Covington and told me he wasn't able to get home. I decided to go get him.

"I knew the road through Cedar Creek was washed out, so I decided to take 220 south. But, just past the falls, that road was blocked by the bank, which had given way. I turned around, and headed down through the back road to Falling Springs. I know now, that was a mistake.

"I came around a corner near the bridge — I'd been down that road 100 times before. When I came around the turn, it looked like the road was there, but apparently it was completely gone.

"It's hard to remember just what happened next. I knew I'd made a pretty bad mistake. I recall realizing the truck was going down, and the cab was filling up with water. There was only a little air left in the top of the cab. I thought to myself, 'This is it.'

"I don't know what happened next. As near as I can figure, the force of the water broke the truck windows and washed me out. I remember going downstream with the rush of water. Then, I saw a tree lying in the water. I grabbed ahold of that tree and pulled myself out of the water.

"I started walking through the woods. I know I was in shock. I didn't know where I was, or where I was going. The next thing I saw some truck lights. I started yelling at the top of my lungs, and he heard me."

Ryder's rescuer, Jack Meadows of Mitchelltown, was someone he knew "vaguely."

"I'm sure he was leery of me at the time. I looked like a drowned rat. The next thing I remember, I was at Bath County Community Hospital. The worst injury I had was a cut eye, and hypothermia."

He said at the time his external injuries healed quickly, but the bad memories lingered on.

"I still think about the flood, especially on the anniversary and say time it rains. It was real hard to even go fishing the first year. I learned a great respect about the power of water. It was very scary. I'm glad it's over with, and I hope it never happens again to myself or anyone else."

Doug's Wrecker Service of Hot Springs made many attempts to pull Lane Ryder's 1977 Ford Ranger pick up out of Falling Springs Creek. One attempt resulted in broken towing cables. Ryder suffered a concussion as a result of the Nov. 4 accident. (Recorder file photo)

Couple faces scare on the Cowpasture

'It really gives you a helpless feeling to have no contact with the outside world and to have a husband with chest pains.'

The late Tom Lobe and his wife, Dee, had an ordeal at their property along the Cowpasture River during the flood. They recalled their story for the Bath County Historical Society five years later:

"It was very bad. I saw the high point about 3 a.m., looking toward the Cowpasture. The fields were flooded with 25-30 feet of water," Tom Lobe said. "The bridge to our place was almost completely destroyed. I-beams 18 inches thick were snapped in two. The concrete top of the bridge was taken off. All that was left were four concrete stanchions.

"It's a long story. On Nov. 5, I started having chest pains. That went on for about two or three days. When I realized I needed to go to the doctor, there was no bridge. The only way out, we figured, was through the old Wallawhoola Farm, which abuts Briarcroft. They've got an old swinging bridge, high over the water. It was still there, but leaning at a 45-degree angle.

"We were able to walk a mile, and cross the bridge very gingerly. Just at the moment we got across, the fellow who owns the farm drove in to check on his property. Talk about luck! He took us to our car, which Dee had thoughtfully parked on the other side of the bridge, when the bridge was still there."

Mr. Lobe was taken to the Bath hospital, and from there by ambulance to U.Va., where he underwent heart surgery. Once he was released, the Lobes had to bring their supplies across the river from November to March, when the new bridge was finished.

"The river at that point was 200 feet wide. Thank God someone gave us a little putt-putt motor to put on the canoe. Still, it was tough. It was devastating."

"I have great respect for that little river," Dee Lobe said. "The ironic thing is, the entire time, the electricity was only out for about eight hours. The phones were dead the whole time. It really gives you a helpless feeling to have no contact with the outside world and to have a husband with chest pains.

"I knew I wanted to save my husband, my animals and my pictures, in that order. It makes you feel very vulnerable and gives you a great respect for Mother Nature. The river ran swift and high for a long time after the flood."

She had high praise for the Agricultural Stabilization and Conservation Service and for Bill Bratton. "God bless them. They said, 'Don't worry. We'll come, and we'll bring machinery.' They rebuilt the ford. Bill Bratton was absolutely terrific.

"My husband is a West Point graduate. He worked rebuilding the bridge with John Mitchell, a VMI man. You know the traditional rivalry between these two! Well, here it worked in our favor.

"The happiest day going was the completion of that bridge. It's higher now than it was back in 1985. We should be OK now, God willing and the creek don't rise."

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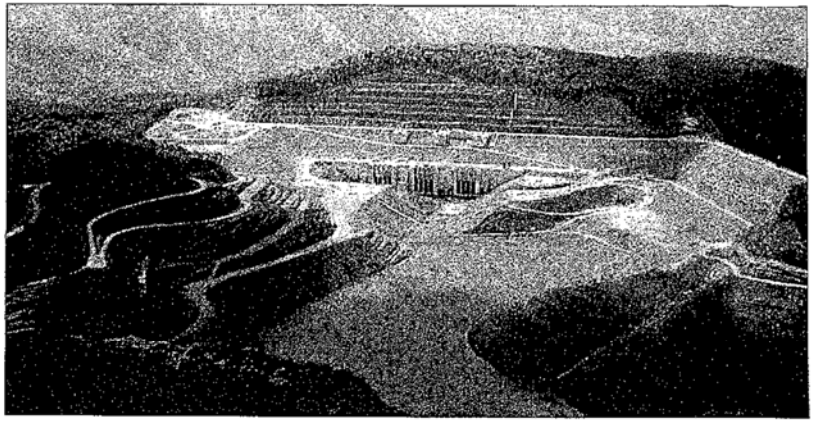
COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)



The Bath County Pumped Storage Station was very near completion in 1985, following years of construction and planning. Engineers tested the generators and pumps, and used them to fill the upper reservoir from below. Here, the water in the upper reservoir was still well below full height level prior to the flood of 1985. (Photo courtesy Robin Sullenberger)

At the station: Creeks did rise

Editor's note: The following story related to the 1985 flood was originally published in the Dec. 23, 2010 issue of The Recorder, in "The Project," a special section on the Bath County Pumped Storage Station.

MOUNTAIN GROVE — Experts called it a 500-year flood. For those in this region, it was an event they'll never forget.

In early November of 1985, Hurricane Juan hit these mountains and lingered, bringing more rain than the area had seen in centuries, and testing the stamina of thousands. People lost lives in raging water; power and phone lines were out for days; property damage was in the millions.

The flood put the nearly finished Bath County Pumped Storage Station to the test, too, though not the way its engineers intended.

The generators were in place; pumps were working, and the upper reservoir was nearly full. Back Creek Valley had been drier than usual that fall, and operators agreed the lower reservoir would take 10-12 months to fill completely. That was fine — they preferred to raise the level slowly so they could monitor the dam carefully along the way.

Everything had gone well, and Virginia Power didn't see any reason to wait. The company planned to put the station online Nov. 15.

But two weeks before they could flip the switch, Juan settled in.

That Monday happened to be Beth Armstrong's last day of work. It was the last day for many employees who were being laid off, since construction had ended.

Beth and her husband, Michael, of Mill Gap, both worked at the project. They arrived at 6 a.m., as usual.

By 7:30 a.m., phones started ringing.

Family members were calling to tell husbands or sons the water was getting high. "I mean, these were wives who were panicked, saying water's almost over bridges and he needs to come home now," Armstrong recalls. "Most all were from Pendleton and Pocahontas."

Pendleton and Pocahontas, in neighboring West Virginia, were two of the hardest places hit by the flooding, and nearly a third of the project workers lived in those counties.

Bath County schools closed at 12:30 p.m., but parents had to pick up their kids because the buses could not run. About 100 students spent that night at Valley Elementary, and another 30 at Bath County High School. Highland schools closed about 1 p.m., but most were delivered home safely by bus. Albert Shultz, one bus driver, had to bring a few back to Monterey after discovering the bridge out at Route 84.

U.S. 220 was open from Monterey to Covington, but only one lane in places due to rock and mud slides. U.S. 220 to Franklin, W.Va. was virtually impassible — large chunks of the road had washed away.

By 1:30 at the station, "the place was almost deserted," Armstrong said. "There had been a line of traffic going out all morning."

Finally, her husband was ready to go, too, and they collected rain gear and boots before they got in the truck with friend, Susan Murray. "As we topped the hill where the visitors center used to be, the water was like a river. You say you can't imagine it, and you really can't. It was indescribable, scary," Armstrong said.

They hoped to get to Arlie Propst's house just up the road; there was a line of cars on both sides of the bridge, and water lapping over it. Murray mentioned her sister, Lisa Kodger, was still at the station. "Michael decided we had to go back and get her. Then it got even worse after that," Armstrong said.

They eventually made it to the Propst home, and parked on the hill, with no other option but to set out on foot.

Arlie Propst recalls the day. "It's the most water I have ever seen," he said. "They had made hay above the bridge, and those bales came down, hit the bridge, and just hung there." He remembers the Armstrongs arriving at his house. "I don't know how they got across those streams but they made it home."

"We just hit the mountain," Armstrong said. Michael hunted the area for years, and was familiar with the woods and terrain. "We'd get to one creek, find we couldn't cross it, and he'd walk us up to the headwaters ... we just kept doing that. We walked and walked and walked, we were worn out, in the pouring rain."

All the hiking was hard enough, but Beth was four and a half months pregnant with their first child at the time.

"The biggest fear was that the dam might fail, and you had all these people below it," Armstrong said. She felt better once they were up on the mountain, away from the project area.

"I had to stay the night at the man camp," recalls Sarah Shifflett of Monterey. "There was a rock slide down where the lower dam is and it blocked off the road. So we parked near the man camp and they shuttled us back and forth. They arranged for us to stay in empty rooms over night, and the next morning, they took us out on a shuttle to see if they could find open roads. The bridge at Mill Gap was washed out, and we had to go through Upper Back Creek to U.S. 250. The Lightner bridge was even damaged."

The night the flood hit, "We were a little nervous, thinking about what would happen if the dam broke," she said. "I know that was going through a lot of people's minds."

Robin Sullenberger stayed over, too. "It was a three-day party," he said, "We had lots of provisions, including cases and cases of Jack Daniels, and we just had a bash waiting for the roads to open up."

About 4:30 that Monday afternoon, the Armstrongs made it to Mary Smith's house in Little Egypt, and she gave the cold, wet foursome homemade bread and jam. Her son, Ralph Smith, attempted to drive them home, but came to another bridge that could not be crossed, so they walked again. When they finally made it home, "We had no phone, no electricity, but we had a wood stove," Armstrong said.

Susan and Lisa had set out for the apartment they rented from George and Peggy

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COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

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Bird in Mill Gap. Michael and Beth gathered up some food and candles to bring them. "We got about a quarter mile, but couldn't go further." They knew the sisters had made it home, but the Armstrongs could not reach them, so they came back to their house.

"For four days, we never saw a soul," she said. "We just holed up. Then, on the fourth day, I heard something outside. I looked out and saw this big old truck coming. It was my dad in his big red wrecker, getting over debris that was everywhere ... We were rescued."

And after the worst was over, Armstrong put her last paycheck toward a good cause. "I used my severance pay to buy a generator," she said.

Phil Stewart, an engineer for Allegheny Power, said, "We were sort of worried because that spring and summer had been pretty dry. We were ready to start filling the lower reservoir but Big and Little Back Creek were virtually non-flowing."

But when the rains came, the lower reservoir filled — fast. "I remember Back Creek was flowing at over 20,000 cubic feet a second ... normally, you could walk across that creek, rock to rock. Usually it flows about 5 cfs," he said. "We held back a lot of water ... There was a lot of concern, especially with all those people staying over below the dam ... you had to go through Marlinton to get home to Clifton Forge or Covington. There was massive flooding, but we had no problems with any of the facilities."

Station operator Mike Wilke had been working the night shift, but he didn't make it to work that night.

"I was at home asleep, and I woke up at 4 p.m. and it sounded like there were trains running outside," he said. "I looked around and couldn't get out the driveway."

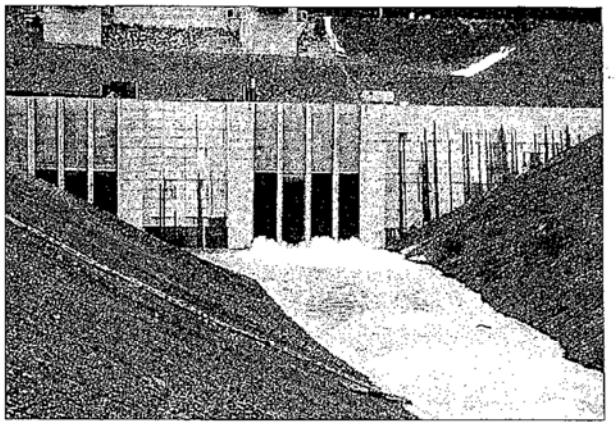
He made his way across a field to a bridge, but when he saw the water rising, "I knew then I couldn't drive to work," he said. "And I had no phone, no electricity." He walked to where he could see Route 600. Then he went to the bridge near Beulah Presbyterian Church, and it was gone. "I had no idea where my wife and kids were," he said. Eventually came across neighbor Charlie Burns, who had information about his family. "Charlie had heard them over the phone, which meant he was listing in; we had party lines back then ... he had heard they were up at Ronnie White's," where they stayed the night, unable to get home.

"That was a 500-year flood, according to USGS records, and we didn't even have to open the spillway," former station manager Mike Wood said. "At any other time, it would have been a different story, but there was no water in the lower reservoir. If it hadn't been there, I don't know where Mountain Grove would be today," he said.

"We only used the spillway once in the last 20 years and we've had the 500-year flood and at least two 100-year floods," he added. "That plant significantly mitigates water damage downstream; though it's not designed to be a flood control facility, it has reduced impacts."

Harza engineer Ralph Watt said, "That was a very nervous time ... With a dam, you like to bring the water up slowly so you can see exactly how the dam is responding. But we were very prepared. We had impounded-

See CREEKS, page 35



Water arrives at the upper reservoir during a test on the generations as pumps. Engineers on the project were caught by surprise when the remnants of Hurricane Juan filled the lower reservoir in only 24 hours, instead of 10 months, as planned. (Photo courtesy Robin Sullenberger)

Vepco worker recalls washout

MOUNTAIN GROVE — In 1985, Bill McGirr was working at the pumped storage project in Mountain Grove, which was preparing to open at the time of the flood.

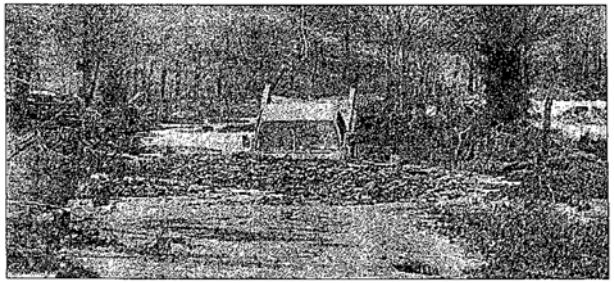
"We had reports the water was rising over Lightner's Bridge at the north end of the project. A lot of people left in mid-afternoon afraid the bridge would get washed out," he recalled later for the Bath County Historical Society.

The bridge didn't wash out, but was completely under water.

"A large chunk of highway got washed away and caved into the stream. Our workers were able to construct an emergency roadway around this and keep the north end from being completely cut off," he said.

Roads flooded over Little Back Creek and on Route 84. McGirr said the lower dam helped offset some of the flooding. "It would have been a lot more serious if the dam weren't there. It cushioned the heavy flows downstream," he said.

"The lower reserve was in the process of being filled. The water level was low, and we were hoping to get it filled and start producing revenue. As it turned out, Providence filled it up promptly. We had a big catchment of water. Because of that, the dam was in operation by the end of 1985."



This truck got stuck in Back Creek where Route 603 formerly crossed it. The driver was apparently trying to avoid the damage on Rt. 600. The accident occurred about 200 yards from Route 600.

Z-2299

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

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ment teams (dam experts) ... these were the best inspectors — trained how to manage the filling process — they were all over the project 24 hours a day during filling. We were prepared, but we did not expect that to happen."

Watt has built large dams all over the world for Hazza, now MHW, but said, "I've never had a hurricane strike over one of my reservoirs like that. The catchment area is not that big, but it's very unusual to have a hurricane just sit over that valley."

Added project surveyor Pat Lowry, "I remember I walked out on the powerhouse roof after it was over and saw all these dead sheep in the reservoir. It filled too fast. They had to bring in tugboats with nets and gather all that stuff up ... Mountain Grove raised hell with Vepco a lot, but Vepco saved their ass," he said.

With a couple of weeks after the floods, Highland and Bath were approved for disaster aid by President Ronald Reagan.

Mill Gap, where the Armstrongs lived, went without power for seven days.

The Cowpasture River had risen eight feet. Enormous Lake Moomaw had risen 25 feet above normal.

A temporary bridge was put over Back Creek, and three other Bath bridges needed work — Route 39 over the Jackson River; Route 620 over the Cowpasture, and Route 614 over the Bullpasture in Williamsville.

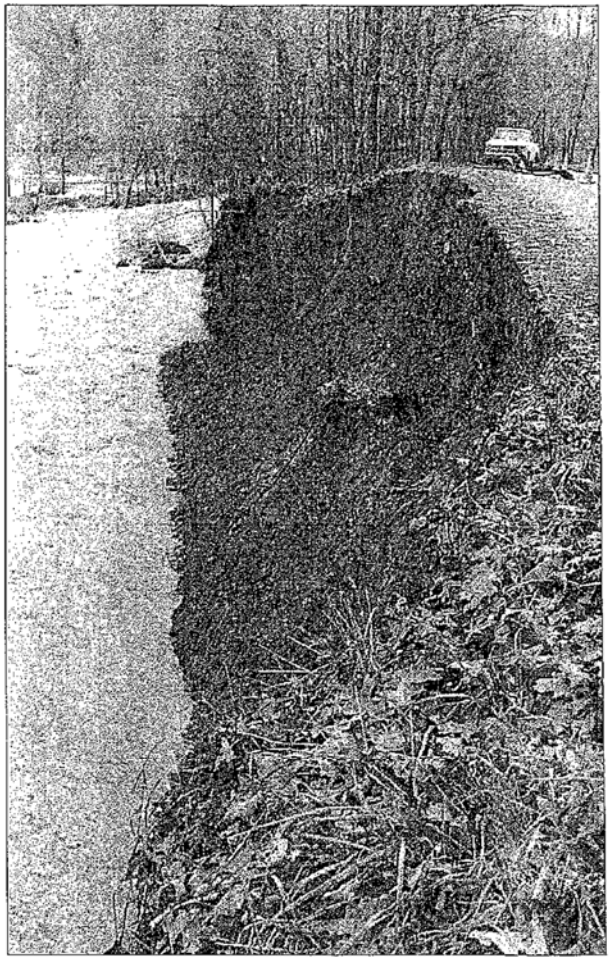
Highland had an estimated $5 million in damages; Bath had $6 million. The Homestead reson suffered some $300,000 in damage to its golf courses alone.

Flooding is still a concern for some Mountain Grove residents, particularly after the one time the spillway was opened. "I was in my first or second year on the board and we had several meetings with Dominion," said supervisor Jon Trees, who lives in the valley. "They had had to open the flood gates. The residents say they saw a wall of water 3-4 feet high coming down Back Creek. It devastated a lot of farms. My daughter and I walked the project area to Mountain Grove and took photos ... the pastures were littered with rocks and debris.

"All the dams are controlled by the Corps of Engineers, and they are supposed to release the same amount of water that comes in. Apparently the aqua ducts or something were not operating and I was told ... they had to open the flood gates. When I asked why, and begged them to release water earlier when it's like that, they told me, 'We're not flood control.' The drainage area to that valley is huge and it all comes right down into that valley. They say had the dam not been there (flood of 85), there would be no Mountain Grove."

But, Trees said, "There absolutely are concerns, if that happens again. There aren't really so many fears about the dams failing. If a concrete dam fails, it breaks apart and it all comes down. But with an earth and rock dam, if the water comes over the top it just eats it down, erodes it and eats its way down ... I'm personally not concerned about that and I've never heard any others express that fear. The upper reservoir, which is above me, on the one side, it's opposite side is lower than the top of the upper dam. Water could never reach the top of the upper dam, it would just all dump into Back Creek.

See CREEKS, page 36



This section of Route 600 caved into Back Creek just north of the Virginia Power project property. The debris from the mud and rock slide blocked Lightner Bridge a short distance downstream, preventing workers from leaving the dam Monday afternoon. (Recorder file photo)

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

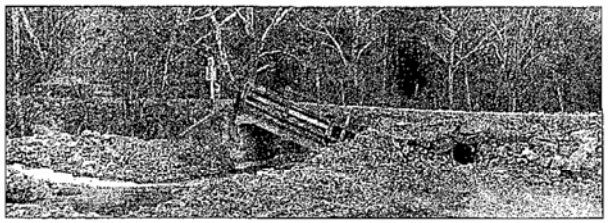
From CREEKS, page 35

I watched Clemetric build that upper dam and I'm not the least bit concerned about it ever breaking.

"But yes, the flood gates — we're concerned about that. We asked Dominion about it before and they said it's not their fault, but yes ... it was. We'd gotten a lot of rain and they didn't get rid of the water soon enough."

'Robin Sullenberger said the amount of water that entered the lower reservoir through the Back Creek drainage system was measured to be almost twice the estimated hundred-year flood level. This means, statistically speaking, that the area should not see this kind of flooding for another 150 to 200 years.'

~ The Recorder, Nov. 7, 1985



This small section of Route 84 near Route 600 and Back Creek caused questions and complaints from Monterey landowners for the state highway department at a Highland board of supervisors' meeting following the flood. Residents were concerned repairs would not be handled quickly enough. (Recorder file photo)

Man saves neighbor

MILL GAP — A Mill Gap man has received the Award of Valor from Virginia Power, the highest award that the company bestows on its employees, after risking his life to save a neighbor during the November flood in Highland County.

John W. Wanless, 46, also received a letter of congratulations from President Reagan, who observed, "You displayed fortitude and exceptional skill in saving your neighbor in a time of urgent need. I am proud to commend your outstanding deed."

Wanless was on his way home Nov. 4 when he plunged into a flooded Highland County stream to rescue his neighbor, Bickley Wade, whose car had been swept off a bridge and carried downstream.

By the time he was able to extricate Wade from the submerged auto, the latter had stopped breathing.

Wanless held Wade's head above the waters and administered mouth-to-mouth resuscitation until Mrs. Wanless could throw him a rope and help pull Wade to the shore.

"How do you thank someone for saving your life?" Wade asked. "I'm not sure you can, but I'm glad he was there. My gratitude is complete."

Virginia Power President Jack H. Ferguson, commenting on the award, said, "Mr. Wanless's courage and commitment to his fellow man stand as examples to us all. He acted selflessly, quickly and intelligently."

Wanless, who had been a senior quality control inspector at the Vepco Back Creek project, has accepted a similar position with the company's Surry power station.

— The Recorder, Dec. 19, 1985

The lower reservoir as seen from the deck of the power station. There is also an upper reservoir, and Vepco built two dams, one for each body of water. (Recorder file photo)

Baby girl born week of flood

BLUE GRASS — Melissa Dowd remembers the year of the flood vividly — she was just days away from giving birth to her daughter, Molly.

That Monday, she was scheduled for a doctor's appointment in Staunton. "It was a story I never told my mother," Dowd said.

The rain was heavy that morning as she crept across the mountains in an old Mitsubishi. As she came to West Augusta, 5-6 cars were stopped, having been held up by a VDOT worker. The place was covered with water. The worker approached her vehicle and asked whether she knew where the road was. "I told him I did," she recalled, "and he asked whether I'd lead the other cars through."

The water wasn't too high yet, but the markings for U.S. 250 were covered where water had pooled. She called attention to her large belly and told the worker, "If I get stuck, are you going to come rescue me?" He promised he would.

He also mentioned the road had just been closed behind her; no other traffic would be coming through.

Dowd proceeded to lead the way. "I was like a mother duck leading ducklings one by one in a line," she said.

After her appointment, she could not reach her husband, Curtis "Corky" Seltzer, who was back home in Blue Grass helping neighbors. "Alice and Bill Will lived next door to us — Alice still does; Bill is deceased — but their house is on a low plain, considerably lower in elevation than Wimer Mountain Road," Dowd explained. "Bill and Alice couldn't swim and neither could their children, William, Jimmie, Jackie, Joy and Joe. Only Bill and Alice were in the house the day of the flood. Key Run, which runs behind our house and in front of Bill and Alice's house, overflowed its banks that day. The floodwater was almost in their house when Corky waded through the moving water to help walk them to Jimmie's house on higher ground."

All telephone communication was down in Highland, so her husband didn't know whether the baby was coming without him. "I found a drug store, picked up a book to read, and checked in at the Econo Lodge for the night," Dowd said.

"And as I recall, the day after the flood, the one lane through Ramseys Draft was open for emergency vehicles only and during daylight hours only, but Corky managed to persuade them to let him through ... He knew exactly how to find me; he knew I'd be right where I was," Dowd said. "When Corky showed up Tuesday late afternoon at the Econo-Lodge, I was one relieved pregnant woman. We drove home on Wednesday when one lane of Route 250 was open again, and then went back to Staunton two days later to deliver Molly."

Mary Rebecca Wilkinson "Molly" Seltzer was born that Friday, Nov. 9, at seven pounds, 15 ounces. She celebrates her 30th birthday this year.

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

Was it the worst? A look back at historic storms

BATH and HIGHLAND — In 1985, longtime residents of the area compared that year's flood to one that occurred in the mid-1930s, or the one that hit the area in 1949.

The Recorder searched its archives for reports of floods throughout its publication going back to 1877, and there were a few references to high waters and bridges washed out.

The flood in 1949, comparatively, was nearly as widespread as the one in 1985. However, considering the population and level of development in the region in 1985, more people had more to lose 38 years ago, and did.

The earliest reference to a flood in The Recorder was the issue of Feb. 13, 1897, when W.H. Matheny was editor.

He wrote, "For a short while last Saturday evening it looked as though Monterey — yes, Monterey! away up here on the great divide between the James and Potomac — would have a flood. The little stream that runs down from the mountain west of town was swollen by the rains of Friday night and was added to all day Saturday by the melting snow.

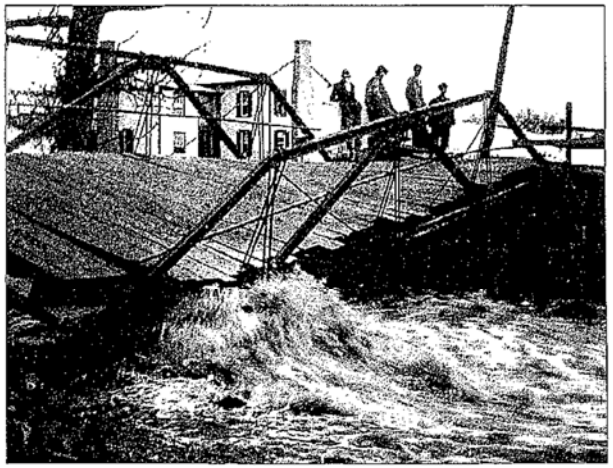
"Places of ice and snow collected under the bridge above town and turned the whole volume of water into the street, it came down with great force, here and there forming a dam with the loose snow it pushed before it, which changed its course from one side of the street to the other and caused it to spread out under houses and flood cellars. The people in the lower end of the town who were warned of the approaching flood prepared for it by making snow fortifications, thus confining it to the street.

"Mr. C.G. Cross, who left Staunton with the mail last Saturday morning, made very good time until he reached Shaw's Fork, where he met with an obstacle. The stream that flows through that valley was very much swollen and was bringing down huge blocks of ice, which rendered it impossible for horses and vehicles; so he spent the night there and on Sunday morning the waters had subsided sufficiently to permit him to cross. He reached Monterey without further hindrance, at noon."

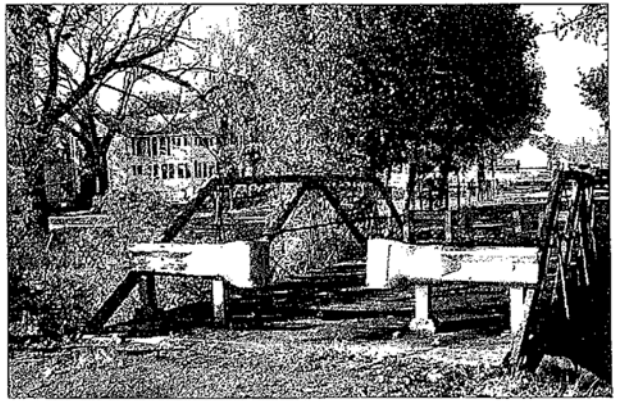
The next early reference to some short-lived flooding was found in The Recorder, Aug. 24, 1906. A report from Strait Creek in Highland noted, "A violent storm struck the head waters of our little valley Sunday, sweeping trees, fences and every obstacle before it, lasting about an hour, after which the sun showed his face and afforded people the privilege of attending public worship. The road from the crossing at Jones ran to H.H. Seybert is almost impassible. It is said by the oldest citizens to be in worst condition than they have known for years. The storm mentioned in your columns last week did lots of damage, but the latter far excelled the former. It is said to be the most water since the Johnstown flood. The footbridge at Mr. Ephriam Gum's was swept away ... Rev. Mr. Brumbaugh floated the Creek at Asbury Chapel and reached his appointment at Thorny Bottom Sunday evening."

A report from Crabbottom (now Blue Grass) noted about the same time, "Highland postmasters this week received their

See STORMS, page 38



Above, a bridge at McDowell bridge pictured in a post card circa 1910-20. The house in the background above is the Edwin and Cornelia McNulty home. Edwin operated the McNulty general store at McDowell, which is Sugar Tree Country Store today, until his death in 1938. The post card has 1920 written on the back but the 1920 issues of The Recorder are not yet archived, so the flooding event information is unknown at this time. Below is how the same bridge looks today, 95 years later, closed to vehicular traffic. (Post card and photo courtesy Kent Botkin)



Z-2302

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

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annual shakeup, inspector Chas. E. Kelley making rounds early in the work. In company with postmaster, H.M. Slaven, he had a new experience with mountain streams during our little flood on Tuesday. Going from Crabbottom to McDowell, they were held up by the little stream at Mr. Ephriam Gum's, had to employ a pilot and get to Monterey by a circuitous route through big hills east of Strait Creek."

The Recorder next referred to a severe storm — again now the worst in county history — in its Aug. 7, 1931 edition: "Possibly the heaviest storm that Highland has witnessed in years occurred late last Tuesday evening. It ranged over the southern section of the county, hitting Back Creek, Jacksons River, and Bull Pasture sections mostly. One man reported the damage done to his farm amounted to a thousand dollars or more. Great gullies washed out, deep enough to hide a cow. The crops in these sections were greatly damaged, water gaps and fences were also included in the roads left bare of dirt, only rocks were left by the big flood of water."

But then in March 1936, a report from Doe Hill claimed, "The flood last week did considerable damage around here by washing roads gardens and meadows and fences away. It was the most damaging flood that has visited this section for a long time."

The flood in August 1939, however, was now the worst area residents had seen to that point, and affected a broader area. "Beginning about six o'clock Friday evening and continuing through the night and Saturday, one the worst electrical storms for many years visited Highland County." The Aug. 4 Recorder reported that year. "It was accompanied by intermittent down-pouring of rain. The storm, apparently heaviest in the Strait Creek valley, moved in a northeasterly course. The Lower Strait Creek and Doe Hill sections seemed to be the hardest hit. In the first storm Friday evening, Mill Gap section received but little rain. Jackson River and Big Valley came in for a big share on Saturday. Hence, all of the streams were overflowing on Sunday."

The paper listed the damage. "Jackson River spread until it covered many adjacent low-lying meadow lands," the report continued. "The greatest loss was reported from the Strait Creek and Forks of Water communities. Among the reported losses were: A garage and automobile belonging to Fred Wagner washed down stream; W.R. Hicklin of McDowell lost a hay stack by lighting; portion of the Crab Run macadamized highway received serious damage; a large quantity of choicest dressed lumber from G. Jesse Hiner's saw mill near Seybert Hills, washed down stream, was damaged; bridge near Seybert chapel destroyed, another one on Laurel Run; large oat field of J.M. Colaw on the McClintic place submerged; scores of minor losses to gardens, poultry and crops generally.

"Joe Rexrode lost a fine cow by lightning. The water main near J.H. Armstrong's place, McDowell, was damaged. McDowell was without electricity for a brief period. A motorist was returning from Staunton Friday evening when the first part of the storm overtook him on Jack Mountain, the rain being so bad and vision of the road so

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Grant County Press

FLOOD SWEEPS VALLEY

VALLEY TOWNS ISOLATED BY RAGING WATERS WHICH EXCEEDED FAMED '89 FLOOD

THOUSANDS WORK TO HOLD POTOMAC FROM U.S. CAPITOL

REPORT IN HEAD ESTIMATE DAMAGE OVER 134 MILLIONS

The Grant County newspaper in West Virginia reported on terrible flooding in March 1936. In Highland, however, The Recorder's report was only from Doe Hill, the flooding there the most damaging that had visited the area in a long time. (Courtesy Kent Botkin)

GING Damaging Flood Hits Franklin And Vicinity

The inset report on the Grant paper's front page reads, "On Tuesday, March 17th, this section experienced the greatest flood known since the flood of 1889 and possibly it even exceeded that flood.

"After a rain commencing about 3 o'clock p.m. on Monday and continuing during the night, the flood reached its highest stage about 10 o'clock Tuesday morning, after which the rain ceased and the water dropped about two feet. Early in the afternoon, the rain commenced again and by nightfall the streams had again raised to about the highest mark during the day.

"Practically all communication with the county seat has been cut off by the flood. Both the local and long distance telephone lines are out of commission; the roads have been blocked in every direction and no mails arrived or were able to get away from Franklin in any direction on Tuesday except by Harrisonburg.

"On Wednesday the Harrisonburg mail was able to arrive by being carried around a bad washout on Trout Run and a slide at Clarence Stinnett's near Oak Flat and this gave us the only communication with the outside world.

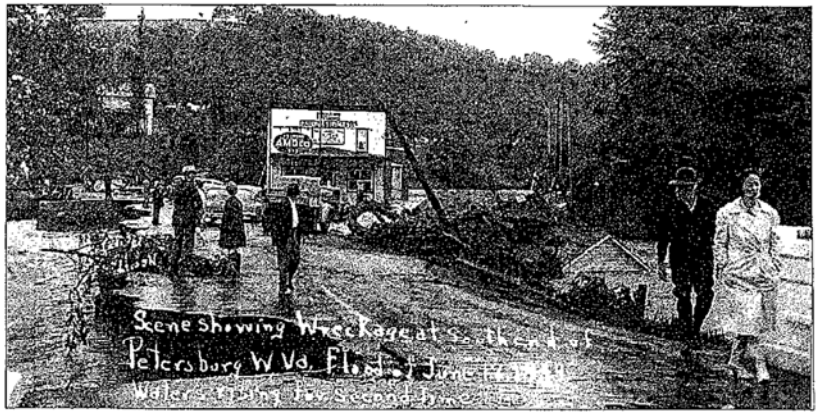
"The road to Petersburg is impassable at the Hog Trough on account of a bad washout of several hundred yards."

The Recorder Thursday, November 5, 2015

38 **Flood of '85** Sponsored by First and Citizens Bank

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)



The 1949 flood hit region-wide in Virginia and West Virginia, nearly mimicking the flooding that occurred in 1985. This photo, from the Kent Botkin collection, depicts the damage at the southern end of Petersburg, W.Va., following that storm.

From STORMS, page 38

poor that he was compelled to park by the roadside between showers. The Staunton mail arrived on time Saturday, but made a detour on return trip in the afternoon. No rain was reported in Augusta. Headwaters had a heavy one, the day before (Thursday).

"A party of young people, who motored to Franklin to the dance, were returning about one o'clock, when they ran into deep water stalling the motors, near Forks of Water. They found it necessary to remain there about two hours before their cars would turn a wheel. S.H. Moore, official reporter for the state, says that there was a rainfall of 4.03 inches during the twenty-four hours, while for the month there was an 8.94 rainfall recorded by him."

A heavy rain in the spring of 1942 caused high waters, but wasn't reported as the worst ever, this time. From the May 22 issue: "Water at flood stage — The flood of last Friday and Friday night did considerable damage in places in town and county. The little stream running through town overflowed its banks on Mr. Joe Gibson's garden, Moffett Hull's, and Mrs. E.B. Jones Sr.'s rock garden and other places in town and did much damage. It is reported that Brown Beard of Bartow lost ten cows and calves in the storm. Residents of the Extract section reported as much damage had resulted from the storm as the one we had two years ago along Jackson's River. Farmers suffered damages to such as fences, crops, etc. The Colaw land and Frank Stephenson land lost several miles of fencing. The farms along the Bull Pasture also lost some fence and crops. It is hard to estimate the loss sustained by this recent flood. At the same time, the rain was a real blessing to the meadows and farm crops."

Seven years, later, however, was clearly the worst flood to date, in June 1949. It was similar to the 1985 flood in that it affected a wide region, from the Shenandoah Valley to neighboring counties in West Virginia, and Highland did not suffer the worst of it.

Two bridges at Head Waters and along the Cowpasture had been destroyed that Friday night. It was also the flood that washed away the old Liberty school building near Head Waters.

The headline June 24 was, "High waters on rampage in nearby counties; heavy rains in Highland," and excerpts were quoted from the Daily News-Record in Harrisonburg. The little town of Bridgewater, in Rockingham County, suffered mightily.

"Bridgewater, with the aid of people, food and water from all parts of Rockingham, plus 25 State Police, Harrisonburg's Co. M, National Guard, Red Cross workers and State and local sanitation officials, is slowly recovering from the raging flood that swept the town between Friday midnight, June 17 and dawn Saturday morning," The Recorder reported. "There are two known dead, Mrs. Margaret Frances Bricker and Mrs. C.R. Bowman, and Frances Bricker, 9, daughter of Mrs. Bricker, is missing. Another daughter, Betty, 12, was saved after a thrilling rescue half a mile from where the home was washed away and dashed to pieces by the flood. The property loss is great.

"At least 100 homes were damaged, one Bricker home swept away, and nearly every business house from Dinkle Avenue to the North River was damaged, numerous garages destroyed, 25 to 30 cars wrecked or smashed and some not yet found, and portions of the town's paving was torn to pieces. So far no accurate census of the damage has been possible. Estimates vary from $100,000 to a million dollars. From Saturday morning until Monday, Bridgewater has been blocked off from ordinary traffic ... But Friday about midnight Dry River, its roaring water swelled to cataract proportions as it swept down from Rawley Spring and higher in the mountains, tore through its banks northwest of Bridgewater and descended upon the town in a wall of water more than 15 feet deep ... the dwelling of Mr. and Mrs. C.R. Bowman on Broad Street is two-story home comparatively new. When the water hit the house, Mr. and Mrs. Bowman, instead of going to the second floor, tried to get out soon after midnight. A neighbor saw them open the front door and walk onto the porch hand in hand just as the porch was torn away, and Mrs. Bowman was taken with it. Her drowned body was found three miles away near Mt. Crawford. Searchers are still searching for the body of Frances Bricker. Many occupants saved their lives by remaining in the house atop tables and furniture or else crawling upon the roof."

In West Virginia, more were found dead due to the same storm, and the results were eerily similar to those of 1985's flood. The Recorder reported, "The twin towns of Petersburg and Moorefield watched flood waters gradually subside Monday, and began a grim search through the gloo-like slit for their dead and missing. Two bodies have been recovered. Four others are presumed dead. Eight more are unaccounted for as late as Monday. Petersburg remained virtually isolated until noon Monday. This town of 2,000 was cut off from all outside contacts shortly after the first waves of the oncoming rampage Friday night.

"Moorefield was a little more fortunate. Although only 12 miles separate the towns, Moorefield managed to maintain one telephone line and keep a back road approach open. The two bodies recovered were those of Cpl. Hurst, of W.Va. state police, and his 12-year-old son, Ronald. A third person, Paul Meek of Logan County, Hurst's brother' in-law, was trapped in the Hurst home with them but struggled to high ground before the house crumbled. Hurst could swim but he would not leave because his son wasn't able to handle himself in the water. Three other persons believed to be dead but whose bodies haven't been recovered are: Leoto Redmond, 16; Nata Walker, 18; and Winston Beckwith, 2; all passengers in a car with Mr. and Mrs. John Gaither of Petersburg. Mrs Gaither who was under treatment for shock said she grabbed a tree branch as she floated by and held the baby out of water until just before dawn when she lost her grip. She was rescued hours later by a boat after being spotted from air by a small search plane."

And as in 1985, Pendleton fared slightly better in the wake of the flooding. "Damages running into many thousands of dollars were caused also in Pendleton County by Friday's flash flood that sent the South Branch of the Potomac River on the rampage, J. G. Asheafelter, editor of the Pendleton Times, reported to the News-Record.

"Although Franklin and Brandywine sections were both hard hit the worst damaged sections were Sugar Grove and the northern part of the county, where many homes, and poultry houses were washed away. Thousands and thousands of dollars worth of poultry and livestock were lost, and hundreds of acres of rich farming from which top soil was carried away and fields strewn with rocks. All highways were badly

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Z-2304

COMPANIES/ORGANIZATIONS COMMENTS

CO107 – Jackson River Preservation Association, Inc (cont'd)

damaged."

And as in 1985, Augusta County, particularly in the western portion, was inundated. "The rampaging waters of North River, tearing in a deluge out of the mountains of West Augusta, all but wiped out the little hamlet of Stokesville late Friday night and cut a path of indescribable destruction in its wild course to its juncture with Dry River above Bridgewater," The Recorder reported. "At least eleven homes in the small community, once the terminus of the C&W Railway, were washed away. And yet with it all, no loss of life was reported. At Camp May Flather, one mile above Stokesville, several cabins and bunkhouses were washed away. Eight counselors who had moved into camp a week ago, in preparation for its opening, were finally able to get out Sunday after being marooned since Friday. Eighty-four Augusta County 4-H members at the camp located on the site of the old North River CCC Camp at North River dam were forced to evacuate and spend the night on Lebanon Ridge ... Harrisonburg did a noble piece of work, through her telephone and radio facilities in calling for trucks, cars, motor boats, planes, relaying messages etc."

Meanwhile in Highland, everyone survived the heavy rains, but there was plenty of physical damage. "Although Highland lost no lives by the recent heavy rains, there were great losses to highways, crops and property in general," The Recorder reported. "The Liberty school house on the South Branch of the Cow Pasture River, near Blair Armstrong's place was completely washed away, and the 100-foot-span steel bridge just below the schoolhouse was washed away; also three more bridges were put out of commission along this rushing stream. Roadside slides did considerable damage on the west side of Shaws Ridge, and possibly other hillside washouts caused heavy erosions. The State Highway force is still at work clearing the debris and leveling the roadbeds. From about eight

THE PENDLETON TIMES

FLOOD!

The front page of the Pendleton Times in West Virginia, covering the heavy flood of June 1949. (Courtesy Kent Botkin)

to twelve o'clock Friday night Route 250, from Monterey as far east as Jennings Gap, was closed to traffic going east; only a one-lane thoroughfare being used for the time. The Reynolds bus lost no runs by this temporary blockade. The estimated loss to the highway has not been ascertained yet, but it is believed to be heavy. Excepting for the time when the county had its cloudburst several years ago, perhaps this rainfall was the greatest reported for so short a period of time as the following figures will indicate."

Finally, rainfall is reported in measurements, and given as follows: "The local weather observer reported to Washington, Lynchburg and Huntington, W.Va., last Thursday morning a precipitation of .30 of an inch on Friday morning, 8 a.m., 1.65 inch; and again on Friday at 6 pm, 2.00 inches; then on Saturday 8 a m .15 of an inch. Thus, for the 48-hour-period the precipitation totaled 4.10 inches. The maximum temperature recorded for the past week was on Monday when the mercury reached 86 degrees."

Following the deluge, observers in the area told about the damage. From July 8, 1949, a reporter wrote, "The H.L. Simmons family and Mrs. R.D. Folks drove down to Petersburg, W.Va., Sunday afternoon to see their cousins, the Vosslers, who were hard hit by the recent flood. They say that no one can even imagine the damage done in that section."

Only a few weeks later, the report again came from Doe Hill on July 29, "Doe Hill suffers worst flood in her entire history."

It claimed, "On Tuesday, July 19th the worst flood in the history of Doe Hill came. Both rivers left the beds and spread over the roads and adjoining fields, taking fences and making roads impassable. Mr. A.J. Wooddell's garden was completely destroyed and a sweet corn patch damaged, also a stable washed away. John Moyers' garden was destroyed, a chicken house washed away, and 80 laying hens and fryers lost. Two other buildings on his lot were moved and water ran in part of the lower floor of his house. CR Wheeler's potato patch and garden were damaged also, Mrs. Lena Snyder's and Henry Hull's gardens were damaged. Miss Lou Jones' water pipes were washed out and she lost some chickens. A.J. Blagg's water line was also washed out. All down the river, fences were washed away and meadows flooded destroying the hay. Rembert Moyers fell in the water and was in danger of being swept away, but managed to get hold of the fence and saved himself."

An Aug. 5, 1949 note included that "Mr. and Mrs. C.R. Wheeler were in the Stokesville neighborhood Sunday looking over the flood area," and "Miss Lou Jones' rooster washed down to Mr. Henry Hull's in the flood and stayed till the water dried up, then walked back home."

Aug. 26, 1949, from Headwaters, came this report about June's flood: "Mrs. Blair Armstrong was hostess last Tuesday to the Headwaters Home Demonstration Club. A new road into the Armstrong home led us right up to the front gate. The gate to the old lane-looked strangely alone without the schoolhouse which stood there for so many years. Flood waters, you remember, washed the building down the river in early July of this year."

Eleven years after the 1985 flood, significant flooding reached the Bath/Highland region again. A winter storm hit in early January 1996, dumping a record 72.9 inches of snow over the course of 46 straight hours, but what made it worse were the rains that followed toward the end of that month. Several areas were evacuated, including New Hampden, Mustoe, and Ashwood. Downtown Hot Springs was nothing but water for hours. Residents felt the flooding was similar to the flood of 1985, though the waters receded more quickly. The damage was extensive in both counties, and the waterlogged water table even caused a huge hole to open up at the Bath/Highland line, taking an enormous bite out of Route 600 that was 85 feet long and 25-34 inches deep. The flooding caused $6.7 million in damages to Bath County and Lake Moomaw facilities alone.

It's tough to compare these flooding events over time — the region had evolved, and grown, such that by 1985, there was far more to lose. But given these descriptions, it appears no other storm carried a bigger impact to life and property.

Recorder editor documents history in news, photos

Much of the historical written and photographical record about the flood of 1985 in The Recorder was created almost single-handedly by one woman — Winnie Richardson. Now a veteran special education teacher, 30 years ago she was Recorder news editor.

She only worked at The Recorder for about a year, but she was instrumental in reporting on those affected by the flood, and providing critical information throughout the days and weeks that followed. And she did it without phone service or electricity, initially. This was plain old gumshoe reporting.

"We just got out there," she recalled. "We drove everywhere." She borrowed then publisher Palmer Stacy's four-wheel-drive pickup and hit the roads, often with her husband, Randy. "Gosh, we went out to Franklin, down to Hot Springs. We went to Burnsville, Williamsville. We just drove," she said.

In Monterey, the electricity and phone lines were restored before other areas of the county, so by the time she was pushing deadline, Richardson could make a few calls, and the press crew could operate the press for Thursday's printing. "But there were a lot of weird things that happened," she said.

Richardson recalls an eerie vision in Marlinton. "There were lights on in places that were almost completely washed out. It was strange to see that."

She remembers the heroics of Ivan Stone, too. "He was the perennial tractor pull winner at the fair," she said. When he was washed away, "he was on his tractor-pulling tractor," she said.

Another strange thing was this: Everyone agreed they could tell precisely when the water started to go down. "Everyone was watching the water, of course," she said. "And they all said you could almost set your clock when it started flowing back down ... there was a visible rise and fall to it."

She remembers as she drove through the pastoral settings of both counties seeing cattle and sheep gathered tightly on dry knolls in pastures where they stepped up to avoid rising waters.

"And I remember everyone talking about the tanker truck that had turned over earlier, and how they felt all the water would wash away the spilled oil in the river ... and I remember the funny things like people talking about living up here with the water rising, rising, rising, then going back down ... people would say things about how their kids' toys would probably end up in Richmond," she said.

"The other funny thing is, still 30 years later, I'm driving around and I swear I'll see debris left over right where it was after the flood. Even 10-12 years later you could see that water line everywhere because the water never got high enough to wash it out again. Maybe it's a photographer's eye ... we drove all those miles, all those places, and years later I still see leaves and stuff hanging from trees that I know was put there from the flood."

Like many residents, Richardson rarely passes the chimney of the Spencer home that now stands alone along U.S. 220 without thinking of the family lost that day, and Ivan Stone, who tried to save them. In fact, Richardson took a photograph of that chimney she'll never forget — there was a picture still hanging there, over its mantle. For Richardson, it remains a powerful image in her memory of one of this area's most tragic times.

This issue could not have been created without Richardson's work, and the collected remembrances stored carefully by the Bath County Historical Society.

Research and interviews were compiled by Recorder writers Anne Adams, Mike Bollinger, and Margo Oxendine, with support from First & Citizens Bank, which made it possible to publish this commemorative section.

Z-2305

COMPANIES/ORGANIZATIONS COMMENTS

CO108 – Virginia Wilderness Committee

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

In the Matter of the Applications of:	
Atlantic Coast Pipeline, LLC **Dominion Transmission, Inc.**	**Docket Nos. CP15-554-000** **CP15-554-001** **CP15-555-000**

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED ATLANTIC COAST PIPELINE AND SUPPLY HEADER PROJECT

BY

VIRGINIA WILDERNESS COMMITTEE

Virginia Wilderness Committee files its comments, included here as **Attachment A**, in response to the Commission's Draft Environmental Impact Statement for the Atlantic Coast Pipeline and Supply Header Project, issued December 30, 2016. Virginia Wilderness Committee respectfully asks that the Commission include its comments in the administrative record for its proceedings under the Natural Gas Act, Commission policy, and the National Environmental Policy Act for the Atlantic Coast Pipeline.

Z-2306

Respectfully submitted,

/s/ Gregory Buppert

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Counsel for Virginia Wilderness Committee

March 31, 2017

CERTIFICATE OF SERVICE

I hereby certify that I have on March 31, 2017, caused the foregoing document to be served upon each person designated on the official service list compiled by the Secretary in this proceeding.

/s/ Gregory Buppert
Gregory Buppert

Counsel for Virginia Wilderness Committee

March 30, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: FERC Docket #CP15-554

Dear Deputy Secretary Davis:

I am writing on behalf of the Virginia Wilderness Committee (VWC) to express serious concerns about the Draft EIS for the Atlantic Coast Pipeline (ACP).

Formed in 1969, the Virginia Wilderness Committee works toward permanent protection of outstanding natural areas on federal lands through Congressional designation as Wilderness.

If approved, construction of the ACP across national forest lands will require the US Forest Service to issue a Special Use Permit and amend both national forest management plans to 1) create a permanent new utility corridor through core forested areas, headwater streams and recreational areas and 2) relax established standards that protect soil, water, old growth, and recreational resources.

The proposal to build the ACP is rather drastic: a new utility corridor through 21 miles of the George Washington (GWNF) and Monongahela National Forests (MNF). It is unprecedented for a pipeline of this size to be built over such rugged mountain terrain that supports such great biodiversity. Dominion's preferred route passes through some of the most intact, undisturbed forests on public land in the East. While the VWC is opposed to the Atlantic Coast Pipeline route in its entirety, our comments focus on impacts to public lands.

Our review of the Draft Environmental Impact Statement (DEIS) reveals many omissions, incorrect statements, and unsupported conclusions. Our areas of major concern where we see deficiencies in the DEIS are:

CO108-1

- **National Forest Land with Great Biodiversity**: The ACP route passes through 21 miles of national forest land in Virginia and West Virginia putting at risk sensitive habitat, such as the Red Spruce Restoration area in the MNF and five Special Biological Areas in the GWNF. The ACP route cuts a broad swath through a

CO108-1 FS response: The FS and FERC have received additional information and analyses since the draft EIS and have incorporated such into the final EIS. Additional mitigation measures and monitoring procedures have been identified that will be incorporated into the COM Plan and SUP.

COMPANIES/ORGANIZATIONS COMMENTS

CO108 – Virginia Wilderness Committee (cont'd)

CO108-1 (cont'd)

"Biodiversity Hotspot" identified by The Nature Conservancy. The 16-mile route in the GWNF passes through some of the wildest, least fragmented forests remaining in Virginia and, in fact, the eastern United States. Scientists have documented 240 rare species within West Virginia's red spruce ecosystem. The US Fish & Wildlife Service has identified 30 federally listed threatened or endangered species, 2 designated critical habitats, 1 proposed species, 5 proposed critical habitats, and 6 species that are currently under review for federal listing that are known to occur in ACP project area. The DEIS does not deal with the large landscape-level importance of our national forests in providing critical habitat that is not available elsewhere.

- **Access Roads**: The ACP requires 19 miles of access roads on national forest land, with their own set of negative effects that have not been adequately analyzed in the DEIS. Some of the access roads cut through or border on special resources the Forest Service is trying to protect. Four examples of special areas in the GWNF that are threatened by access roads can be found in Bath and Augusta Counties alone:

CO108-2

1. **Indiana Bat Cave Protection Area:** This area is managed to protect habitat for the federally endangered Indiana Bat. The GWNF plan calls for decommissioning roads adversely affecting Indiana Bat habitat security.

CO108-3

2. **White Oak Draft and Dowell's Draft Brook Trout Streams:** The DEIS does not recognize these as brook trout streams on Hankey Mountain, nor does it evaluate impacts. The Forest Service has noted both are indeed brook trout streams.

CO108-4

3. **Browns Pond Special Biological Area:** This SBA is a montane depression pond in karst topography with rare plants, multiple sinkholes, and a cave that is a potential hibernaculum for the Indiana bat and at the very least is home to special cave fauna. A major reconstruction of a small forest road to provide access for heavy industrial equipment may damage the karst and cause Browns Pond to drain, thereby endangering the communities of life in the pond and in the cave in the SBA.

CO108-5

4. **Eligible Recreation River Corridor:** A proposed access road could cut through a segment of the pristine and scenic Cowpasture River corridor that is eligible to be designated as a National Recreation River.

CO108-6

- **Temporary Work Spaces:** Eighty Additional Temporary Work Space clearings would be required on National Forest land, significantly adding to the total impact. The cumulative impact of 80 ATWS sites on National Forest land has not been analyzed.

CO108-7

- **Flooding Hazards:** FS has identified flooding hazards are present at about 36 stream crossings of the pipeline and access roads on GWNF lands. Some of these correspond to the "High Hazard" areas identified by the USFS. Dominion has not supplied adequate information for the public to analyze the viability of these stream crossings during construction and for long-term impacts of flooding on the integrity of the pipeline in these particularly risky areas.

CO108-2 FS response: The use of Forest Road 124 (Duncan Knob) by Atlantic as an access road is a road that is open to the public.

CO108-3 See the response to comment CO104-2.

CO108-4 FS response: The FS is working with Atlantic to resolve the concerns with the access road and potential effects to the Browns Pond Special Biological Area.

CO108-5 FS response: The proposed permanent access road is an existing road that would require reconstruction. The FS has determined that the road reconstruction would not impact the outstandingly remarkable values associated with the eligibility of the Cowpasture River as a recreational river.

CO108-6 FS response: The impacts of the ATWS have been analyzed with the impacts of the other activities, with the exception of additional ATWS that have not yet been identified for topsoil segregation. The size of the typical ATWS is about 0.06 acre.

CO108-7 FS response: Atlantic would follow FERC's Procedures as well as mitigation measures and monitoring procedures identified for stream crossings in the COM Plan.

COMPANIES/ORGANIZATIONS COMMENTS

CO108 – Virginia Wilderness Committee (cont'd)

CO108-8
- **Priority Watersheds:** The proposed route crosses three Priority watersheds as identified in the GWNF Forest Plan. The GWNF goal for these watersheds is restoration rather than development.

CO108-9
- **Forest Fragmentation:** While the DEIS recognizes forest fragmentation as a major issue that cannot be mitigated, it dismisses the significance of the impacts on interior forest habitat and special species caused by both the ACP and access roads. The ACP would cause loss of 14,786 acres of core forest. Of this 10,970 acres (74%) would be lost due to construction of the ACP, while 3,816 acres (26%) would be lost because of construction of access roads. Given the uniqueness of the interior forest habitat and the richness of biodiversity, this level of fragmentation should not considered acceptable by the DEIS.

CO108-10
- **Eagles:** Dominion's surveys did not document bald eagle nests or winter roosts or golden eagle roosts within the GWNF during its surveys in 2016. Yet, VWC members have observed bald eagles at the ACP crossing of the Cowpasture on numerous occasions. The DEIS therefore relies on misleading information regarding impacts of the pipeline on eagles and eagle habitat.

CO108-11
- **Nonnative Invasives:** Fragmentation will create a pathway for nonnative invasive species that will spread into areas that are currently interior forest habitat.

CO108-12
- **Wild Brook Trout Streams:** The ACP crosses 26 wild brook trout streams in the GWNF, some by open trench method that will involve in-stream blasting that could permanently damage these sensitive streams. The DEIS ignores FS concerns about White Oak Draft, Dowells Draft, Braley Branch, and Calfpasture River crossings and does not fully evaluate impacts to other wild brook trout streams.

CO108-13
- **Special Species:** The DEIS claims the ACP will impact five endangered species. The route will actually affect many additional sensitive species that are state listed, or that are on the Regional Foresters Special Species (RFSS) list, the GWNF Locally Rare Species list, or the Management Indicator Species list. There are 135 RFSS in the MNF and 141 RFSS in the GWNF. Of those species, 86 RFSS in the MNF, and 53 RFSS in the GWNF may be affected by ACP. The DEIS is inadequate insofar as it fails to adequately consider impacts on the vast majority of these species.

CO108-14
- **Incomplete Biological Surveys:** The biological surveys for many of these are not yet completed and will not be done until as late as September, 2017, depriving the public of ample opportunity to review as is required by NEPA. Please note that the Rusty Patched Bumble Bee has been listed under the Endangered Species Act as of March 21, 2017.

CO108-15
- **Old Growth:** The DEIS states that the GWNF plan would have to be amended to allow removal of old growth trees within the construction corridor of the Atlantic Coast Pipeline. The VWC objects to removal of old growth for the pipeline and

CO108-8 See response to comment CO5-1.

CO108-9 Comment noted. See the updated interior forest fragmentation analysis in section 4.5.6.

CO108-10 FS response: The final EIS states that a qualified avian biologist would accompany the clearing crews for work conducted in areas where golden and bald eagles are present or likely to be present in the GWNF or MNF; specifically, based on 2016 surveys and CCB data, this would be applicable for Randolph and Pocahontas Counties West Virginia and in Highland, Bath, Augusta, and Nelson Counties, Virginia. The qualified avian biologist would visit areas a sufficient distance and time ahead of the clearing crews and search for roosting golden and bald eagles and nesting bald eagles. Refer to the Migratory Bird Plan for additional information on bald and golden eagle monitoring. See Section 4.5.3.5-General Impacts and Mitigation for Migratory Birds.

CO108-11 FS response: Impacts of noxious weeds and other invasive plants are addressed in sections 4.4.4 and 4.4.9. The COM Plan (appendix J) will include mitigation measures and monitoring procedures for non-native invasive species.

CO108-12 See the response to comment CO104-2.

CO108-13 FS response: The FS and FERC have received additional species-related information and analyses since the draft EIS and have incorporated this into the final EIS. See Section 4.7.3-USFS Managed Species and appendix R-FS Managed Species.

CO108-14 FS response: The FS and FERC have received additional species-related information and analyses since the draft EIS and have incorporated this into the final EIS.

CO108-15 See the response to comment CO97-6.

CO108-15 (cont'd) access roads. Surveys of the old grown were not completed as of the publication of the DEIS, depriving the public of essential information on the extent of old growth removal being proposed.

CO108-16
- **Lack of Need:** A clear need by the public for the project has not been established. According to an independent study by Synapse Energy, **Are the Atlantic Coast Pipeline and the Mountain Valley Pipeline Necessary?** (Sept. 2016), both the ACP and MVP are unnecessary, because existing pipelines, with modifications, will meet future demand through 2030.

CO108-17
- **Lack of Careful Look at Co-Location of ACP and MVP:** The DEIS does not analyze alternatives of colocation with the Mountain Valley Pipeline or following existing utility corridors adequately and as required by NEPA.

CO108-18
- **Scenic Impacts:** The DEIS does not adequately analyze scenic impacts to:
  - **Proposed Shenandoah Mountain National Scenic Area:** The pipeline route is clearly visible from multiple overlooks on the Wild Oak National Recreation Trail on Hankey Mountain and Bald Ridge Trail on the ridge above Braley Pond though the DEIS states it is not.
  - **Sherando Lake Recreation Area:** From Torry Ridge Trail, the tunnel under the Blue Ridge would mar the best scenic viewshed in Sherando, the most popular recreation area in the GWNF.
  - **Appalachian Trail**: The GWNF plan requires consideration of scenic integrity for the AT. Though Dominion asserts that the HDD or DPI will minimize scenic impacts to the AT, the pipeline will be visible from many points along the Appalachian Trail, including Ravens Roost, Cedar Cliffs, Humpback Rocks, and the north end of Three Ridges Overlook as well as from numerous unnamed points on the AT between Three Ridges Overlook and Humpback Rocks.
  - **Southern Shenandoah Mountain**: The ACP corridor would be within view of Radcliff Hill SBA, South Sister SBA, Big Cedar SBA, Browns Pond, and Reubens Draft SBA. Also, the scenic view from South Sister SBA is one of the most outstanding in the GWNF.
  - **Great Eastern Trail:** The ACP would cross Shenandoah Mountain Trail, a segment of the Great Eastern Trail, near Scotchtown Draft. Scenic impacts to the GET, American's newest long distance trail, have not been analyzed.

The process for this environmental impact statement is flawed. Dominion has not produced the information needed for a thorough evaluation with adequate time for public review as is required by NEPA. When the DEIS was released on Dec. 30, 2016, many critical pieces of information were missing, such as:

CO108-19
- **HDD Crossing of Appalachian Trail:** Detailed construction plans for the HDD crossing under the Appalachian Trail are not included in the DEIS. The incomplete plans that were submitted describe a drilling process that has a high risk for failure, yet the DEIS finds these plans acceptable. The FS has set a condition that if the

CO108-16 See the response to comment CO46-1.

CO108-17 See the response to comment SA15-3.

CO108-18 FS response: Section 4.8.9.1 has been updated to include scenic impacts on these areas.

CO108-19 Atlantic's site-specific crossing plan for the BRP/ANST HDD was included in appendix H of the draft EIS, and is also included in the final EIS.

In response to our recommendation in the draft EIS, Atlantic consulted with the FS regarding the construction schedule for the portion of ACP on NFS lands and the proposed HDD under the BRP and ANST. In a letter dated April 4, 2017, the FS stated Atlantic had filed adequate documentation for the FS to determine the BRP/ANST HDD or contingency plan would be feasible. As such, the FS stated it would not prohibit construction activities on NFS lands before the proposed HDD crossing or contingency crossing of the BRP and ANST is successfully completed.

CO108-19 (cont'd) pipeline is authorized, the tunnel must be successfully completed prior to any other construction in the national forest. The DEIS suggests that this is not a realistic timetable; however, VWC sees this condition as a responsible course of action. We ask that you hold Dominion to this condition if the pipeline is approved.

CO108-20
- **Detailed Plans for "High Hazard" Areas.** These areas were identified by the USFS in October 2016. The ACP route through the GWNF crosses 9.3 miles (58 percent) of lands with high incidence of and high susceptibility to landslides and 6.6 miles (41 percent) of lands with a moderate incidence of and high susceptibility to landslides. Disturbance of these areas could set the stage for landslides and slope failures during heavy rain events, putting sensitive streams at risk.

CO108-21
- **Biological evaluations for many special species**: It is of critical importance that the ACP not jeopardize the continued existence of any species under the jurisdiction of the US Fish & Wildlife Service and not adversely modify or destroy designated critical habitat. USFWS has not submitted their evaluations. Therefore, the DEIS necessarily fails to adequately consider the impacts of the ACP on these important species.

CO108-22
- **Scenic Impact Evaluation:** An evaluation of scenic impact on the proposed Shenandoah Mountain National Scenic Area is not included in the DEIS.

CO108-23
- **Virginia Erosion and Sediment Control Standards:** We would like to see a strong commitment to adhere to state standards.

CO108-24
- **Construction, Operations, and Maintenance Plan:** A final COM plan was not included in the DEIS. This is particularly problematic given that the COM plan is an essential piece of information for evaluation by the public of the feasibility of constructing the ACP across extremely difficult terrain.

CO108-25
- **Justification of Need:** The DEIS does not make an adequate case for need for the pipeline beyond Dominion's assertions. Independent studies found that existing infrastructure, with some improvements, would be adequate future demands.

CO108-26 Dominion has continued to submit critical bits and pieces of information as the clock ticks, with a public comment deadline on April 6, 2017. When all of these critical information submittals are finally made, the public will need adequate time to review them and respond. This time does not seem to be built into the process. It is imperative that FERC or the Forest Service prepare a Supplemental DEIS that includes all submittals with at least a 90-day public comment period. This project is too large and too consequential for our national forests to fast track.

In summary, the DEIS lacks critical information that is essential to sound decision making, and it glosses over or dismisses significant impacts to the precious resources in our national forests. The process for ample public review with full information is badly flawed and does not comply with NEPA. We fail to see how FERC reached the conclusion that construction of the ACP would not result in a significant cumulative impact on the

CO108-20 FS response: The SAIPR provides design and construction practices for steep terrain. Atlantic would also follow the FERC Plan and West Virginia and Virginia state requirements and BMPs. The FS is still working with Atlantic on site-specific designs which would be used to minimize the potential risks for sliding and other slope instabilities and would require additional site designs.

CO108-21 Section 4.7.1 recommends that construction of the projects be conditioned upon the completion of all outstanding biological surveys, any necessary section 7 consultation with the FWS, and Atlantic and DETI's receipt of written notification from the Director of OEP that construction and/or use of mitigation (including implementation of conservation measures) may begin.

CO108-22 FS response: The FS reviewed the materials provided by the Friends of Shenandoah Mountain organization and ran additional viewshed analysis for the GWNF LRMP Recommended Shenandoah Mountain National Scenic Area. The effects to this area are described in the updated Visual Resources part of Section 4.8.9.1-Forest Service.

CO108-23 Section 4.6.4 has been updated to include Atlantic's commitment to adhere to the Virginia Erosion and Sediment Control Handbook (VDEQ, 1992).

CO108-24 FS response: The COM Plan continues to be revised with new information as data and analyses become available. Its final version would be incorporated in the SUP. Atlantic developed its Karst Mitigation Plan to identify construction monitoring protocols and mitigation and conservation procedures for karst geology. In addition, Atlantic would implement its BIC Team and SAIPR to plan for construction through geological hazards.

CO108-25 See the response to comment CO46-1.

CO108-26 See the response to comment CO6-1.

environment. We are not convinced that Dominion made a good faith effort to locate the project off national forest lands, as both forest plans require. According to the DEIS, none of the ACP corridor will be collocated with existing rights of way, even though both forest plans have directives that restrict utility crossings to existing corridors. The DEIS fails to make the case that it is essential to cross 21 miles of national forest land with a new utility corridor. We would like to see a more careful analysis of environmental impacts that does not assume project approval.

Thank you for the opportunity to comment.

Sincerely,

Mark Miller
Executive Director
Virginia Wilderness Committee
62 Big Hill Rd.
Lexington, VA 24450
www.vawilderness.org

COMPANIES/ORGANIZATIONS COMMENTS

CO109 – Fairway Woods Homeowners Condominium Association

UNITED STATES OF AMERICA

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

Atlantic Coast Pipeline, LLC) Docket No. CP15-554-001
And Associated Dockets

COMMENTS OF
THE FAIRWAY WOODS HOMEOWNERS CONDOMINIUM ASSOCIATION
IN RESPONSE TO DRAFT ENVIRONMENTAL IMPACT STATEMENT

The Fairway Woods Homeowners Condominium Association (the Association) hereby submits these comments in response to the Commission's Draft Environmental Impact Statement (DEIS) in the above proceeding. The proceeding concerns a 42-inch natural gas pipeline proposed by Atlantic Coast Pipeline, LLC (ACP). The Association is an Intervenor in the proceeding, and has previously filed comments in opposition, as described below. Here, once again, we call the Commission's attention to the unique and irremediable public safety issue presented by the pipeline's proposed location at the entrance to the Wintergreen mountain community. The DEIS unaccountably fails to address this issue. It offers only generally applicable bromides about pipeline safety. Those bromides, as we will explain here once again, are otiose in this unique situation.

CO109-1

1. *The Association's Prior Filings*

The Association has previously filed the following pleadings in this proceeding:

1. Comments in Opposition, filed October 13, 2015
2. Opposition to Motion for Leave to Answer, filed December 13, 2015

CO109-1 See the response to comment CO48-2.

Z-2315

CO109-1 (cont'd)

3. Comments, filed June 15, 2016

Each of those pleadings, especially the first, discusses the Wintergreen public safety issue in considerable detail. The Association urges the Commission to read each of the pleadings in whole. Here we shall not repeat the pleadings, but merely summarize their contents. Backup data and supporting information will be found in the pleadings themselves.

The Wintergreen mountain community is situated at and near the top of one of the 100 highest mountain peaks in Virginia. The community consists of about 3,600 homes, both single houses and homes in multiple dwelling units, plus the facilities of the Wintergreen Resort. At its least occupied times, the community holds about 2,000 people, permanent residents, contractors and resort employees. At busy times the community holds about 10,000 people, now also including part-time residents and their guests, resort guests, and larger numbers of resort employees. At peak periods, such as the Fourth of July celebration, the community hosts about 15,000 people.

The entire mountaintop community is accessed by a single road, Wintergreen Drive. The community is otherwise surrounded by dense forest. Wintergreen Drive begins where it intersects with County Road 664 at an elevation of about 2,100 feet. The intersection is often called the Gate, although there is no actual gate there. From that entrance, Wintergreen Drive ascends 700 vertical feet, over a distance of about 1.7 miles, along a winding path through a narrow, densely forested, canyon until it reaches the first settled area, at an elevation of about 2,800 feet. That winding path—Wintergreen Drive—is the only entrance to, and the only exit from, the Wintergreen mountain community.

CO109-1 (cont'd)

Wintergreen maintains a fire station located within the mountain community. Two or three full-time firefighting and rescue personnel are on duty at the station at all times. The station also maintains an array of firefighting equipment. The trucks altogether carry only a small amount of water, about 1600 gallons, because water is piped throughout the community itself from two large mountaintop tanks. No water is piped, however, along the entire 1.7 mile distance over which Wintergreen Drive ascends from the entrance to the community's settled area. Wintergreen also maintains a professional police force. Their headquarters are located at the Wintergreen Drive entrance. The headquarters building houses the Wintergreen public safety communications system, which includes the backup 911 communications system for Nelson County.

ACP's proposed pipeline would be located directly across County Road 664 from the entrance to Wintergreen and the police headquarters. Let's sketch the scenario if the pipeline explodes there. The explosion will immediately melt and destroy critical parts of Road 664 and Wintergreen Drive, and obliterate the Wintergreen police headquarters and emergency communications system. The explosion either immediately or soon after will ignite a forest fire with a perimeter on the Wintergreen side of Road 664 of about one mile. In dry conditions the fire rapidly ascends the narrow canyon through which Wintergreen Drive winds. It reaches the settled area in about 45 minutes.

As the Association showed in our Comments in Opposition, conditions have become progressively drier over the years in west-central Virginia, where Wintergreen is located. We will note here, in addition, that significant forest fires were once relatively rare on the east coast of the United States. In recent years they have become increasingly common. The Commission already knows about the "Chimney Tops 2" fire in eastern Tennessee last November, a fire

CO109-1 (cont'd)

which moved with great speed, destroyed more than 20,000 acres, and killed 14 people. Closer to Wintergreen a fire in Shenandoah National Park last April rapidly destroyed more than 8,000 acres of forest. And virtually next door to Wintergreen, a fire in the Blue Ridge Parkway forest destroyed two acres last November.

So, let's continue. As the massive fire rapidly ascends the Wintergreen Drive canyon, it cannot be reached by any local firefighting agencies outside the entrance. That is so because necessary parts of Road 664 and Wintergreen Drive have been melted and obliterated by the explosion. The fire is beyond the ability of the mountaintop fire unit to control. Their two or three full-time personnel and 1600 gallons of transportable water are utterly insufficient for such a task.

Panic on the mountaintop ensues. As Wintergreen Drive is the only exit, people soon realize that they are trapped. Those who are physically fit and fleet-of-foot, and who know the mountain's topography well, may be able to escape on foot over routes that involve both hiking through the forest and rapidly walking many miles. But even they have difficulty escaping if the fire occurs at night. The fire sweeps through the mountain community, where the homes and other buildings are constructed almost entirely of wood and surrounded by forest. The people on the mountain, somewhere between 2,000 and 10,000 of them, perhaps even as many as 15,000, perish.

ACP clearly has had the opportunity to explain to the Commission why these events will not happen. In a December 4, 2015, Information Request (Request No. 168), the Commission asked ACP:

CO109-1 (cont'd)

> Title 49 CFR Part 192 requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Detail the measures that Atlantic would include in its emergency plan to account for ingress and egress at the Wintergreen Resort in the case of a natural gas pipeline emergency.

The Commission asked this question of ACP almost one year and three months ago. ACP has yet to file an answer. The reason for its reticence is easy to understand. No plan can be devised that does not simply allow the people at Wintergreen to perish.

CO109-2

2. *The DEIS Fails to Address Wintergreen's Unique Safety Concerns*

Despite the extensive and specific showing made by the Association to the Commission, the DEIS essentially ignores the Wintergreen public safety issue. It offers only broad-brush, and irrelevant, bromides about pipeline safety and industry practices. Those bromides, we suggest, will be of no use to the Wintergreen community when they are trapped and engulfed in a massive forest fire.

a. *Drills*

The DEIS actually mentions Wintergreen, we believe, only once. We quote that paragraph in full:

> We received comments from Wintergreen Resort, Bath County, Virginia and several community members regarding single point access roads and the ability to evacuate in event of an emergency. In a letter sent to Bath County Supervisor Stuart Hall, Atlantic documented that these concerns would be addressed on a case-by-case basis. In the letter, Atlantic states that their intention is to work with local emergency responders to ensure they are comfortable with their ability to respond to a natural gas emergency, including evacuation. As discussed above, Atlantic plans to accomplish this by holding annual meetings and setting up table-top drills to work through the action items necessary to resolve a natural gas emergency scenario.

CO109-2 See the response to comment CO48-2.

CO109-2 (cont'd)

(DEIS 4-479.) Insofar as these remarks concern Wintergreen, their best use would be to serve as a sequel to the poem "Jabberwocky."

We return once again to basic principles. "Local emergency responders" cannot possibly deal with the consequences of an explosion of the pipeline across the road from the entrance to Wintergreen. No such responders outside the mountain community could reach the community after the blast has melted and obliterated the roads, and while the fire is marching up the mountain. The Wintergreen police department will have been wiped out in the blast. The public safety communications system will have been destroyed. The two or three man unit at the fire station will be utterly overwhelmed. Those poor people most certainly will not be "comfortable with their ability to respond."

And we are, we confess, completely mystified by the term, "including evacuation." What evacuation? The Commission asked ACP to supply its evacuation plan for Wintergreen back in December 2015. ACP has yet to supply that plan. The reason it hasn't, we surmise, is because there is no such plan. There can be no such plan. There is no practical way out of Wintergreen except Wintergreen Drive.

And then we come to the part about annual meetings and drills. The DEIS goes on about them for some length at 4-478 through 4-479. There we find that ACP will educate folks about the location of the pipeline, recognition of pipeline emergencies, and how to call ACP in the event of an emergency. Again, we can only observe that all this fine information will be of little use to the people of Wintergreen when they are engulfed in an all-consuming fire. A drill might be useful if there actually were some practical way out of Wintergreen in such a fire. But there

CO109-2 (cont'd) are no such means. The most useful drill ACP could provide to Wintergreen would be to bring in a choir director to teach folks the hymn, "Nearer My God to Thee."

They would have to do that more than once a year. Apart from its 1,000 permanent residents, the mountain community's population is constantly shifting. Part-time residents, resort employees, and contractors, come and go at different time at different times. Guests may return at future dates, but perhaps not. New and different guests will arrive. ACP would have to figure out a schedule to teach the hymn to them all.

CO109-3 b. *Danger of a Pipeline Explosion in General*

The DEIS goes on at quite some length about the safety of pipelines in general. The pipeline will be built to PHMSA standards, inspected, monitored, and so forth. And, the DEIS continues, natural gas pipeline incidents such as those involving death, have occurred, in the last 20 years, only about 66 times per year. The average number of deaths per years is relatively light. The Association doubts none of this. And we do not dispute that the general chance is slim that a pipeline might explode at any one particular location. Yet pipelines do explode. In serious incidents, about 66 times a year.

So the difficulty with the DEIS analysis, in our view, is not that it fails to take account of risk. The problem is that it fails to take account of consequence. Rational decision making, as we pointed out in our Comments in Opposition, must take into account both risk and consequence. Let's think of it this way. A revolver has six chambers. If you put a live bullet into one chamber, spin the barrel, aim at a shooting-range target, and pull the trigger, there is only a small chance that the bullet will fly toward the target. Only about a 16% chance. Now, instead, spin the barrel and aim the revolver at your own temple. There's still only a small

CO109-3 See the response to comment CO67-14.

CO109-3 (cont'd)

chance, only about 16%, that a bullet will be let loose. But you don't pull the trigger, do you? Because the consequence of that risk is too great.

So it is with Wintergreen and the ACP pipeline. Yes, there's only a small chance that the pipeline will explode across from the entrance to Wintergreen. But if it does explode there, somewhere between 2,000 and 10,000, and perhaps as many as 15,000, people will perish. Most of them, thankfully, will suffocate from lack of oxygen before their bodies are burned. But a fair number will die by burning, an excruciatingly painful death.

c. *The Greater Risk of an Explosion at Wintergreen*

The Association cannot in conscience end this pleading without pointing out, once again, that the risk of an explosion at the entrance to Wintergreen is far greater than average. Averages for the most part concern pipelines extending straight for hundreds of miles under dusty prairies. Straight pipelines under unchallenging and open terrain, if properly constructed, should indeed present relatively little risk of explosion. But the ACP pipeline's position across the entrance from Wintergreen is exactly none of that. The pipeline most certainly will not be straight. The terrain is exceptionally challenging. And it is no dusty prairie there. It is there a most attractive opportunity for even modestly talented terrorists and saboteurs.

The pipeline across from the entrance to Wintergreen, as we have pointed out in all our prior pleadings, will not be straight. It will have emerged from a one-mile HDD tunnel and will descend about 120 feet. Then it will bend sharply upward to begin a steep, 900-foot ascent up Fortune's Ridge. The internal pressure of the gas against the pipe at such bends is much greater,

CO109-3 (cont'd)

as gravity pushes the gas from both directions toward the bend.[1] Thus, a review of pipeline incident reports shows that leaks and explosions of pipelines under river beds, where the descents and ascents are comparatively shallow, are surprisingly frequent. A short distance from the bend, the pipeline will cross under County Road 664, over which heavy trucks often travel. So at approximately the same place, and across from the entrance to Wintergreen, the pipeline will be subjected to both unusual internal and external stresses.

The pipeline's emergence from the one-mile HDD tunnel at a location very near the entrance will also greatly increase the chances of an explosion. The Association has discussed those risks in our Comments in Opposition and in our June 15 Comments. The geologic structures under the Blue Ridge, through which the tunnel will be drilled, comprise two thrust faults, four foliations, and several likely fracture zones. Those pose a risk to the tunnel's, and thus the pipeline's, integrity at all times, but especially during earthquakes. The pipeline must be pulled through the rock tunnel, a scraping that threatens the integrity both of its anti-corrosion coatings and of the steel itself. Unless, improbably, the tunnel is perfectly straight, its bends will impose stress on both the pipeline's welded seams and on its segment welds. Over time those stresses could result in breaches of the welds. Lastly, the pipeline's location in a narrow tunnel through highly magnetic rock will interfere with many ordinary inspection routines, such as visual inspection after installation and magnetic flux leakage pig testing.

In addition to those mechanical threats to the pipeline's integrity across from the entrance to Wintergreen, there is also an altogether different threat. One which the Association discussed in its Comments in Opposition. The pipeline at this location will be an exceptionally attractive

[1] Thomas O. Miesner and William L. Leffler, *Oil and Gas Pipelines* (Tulsa, 2006), pp. 51-53.

CO109-3 (cont'd)

target for a variety of terrorists and saboteurs. The spectacular loss of life that could be caused by an explosion at this point would vastly exceed that which could be caused by an attack on any equally vulnerable target. And the Commission must not delude itself that any routines such as foot patrols and inspection will deter or prevent such terrorism. Terrorists will have accounted for them in advance.

Let's sketch out a scenario. A fine Fourth of July evening. A little balmy, but pleasant yet. Fifteen thousand people happily assembled on the mountaintop, most to see the fireworks. Meanwhile, a niggling little group of only two or three terrorists has been busy packing a small plane full of explosives. One them now flies the plane right into the pipeline location across the entrance to Wintergreen. A veritable Mona Lisa of small-bore terrorism.

And once again, the DEIS offers only useless bromides. Terrorist attacks are "unpredictable," and therefore can't be accounted for. (DEIS 4-484.) That just isn't true. Terrorist attacks may seem random to the victims, but they aren't random to the attackers. The attackers will invariably seek to inflict maximum damage through an attack upon a target which is vulnerable to their attack. It really doesn't take much imagination to see such an opportunity at the entrance to Wintergreen. But, the DEIS assures us, the Commission will be taking secret measures to "minimize the risk of terrorist sabotage of ACP." (Id.) That assurance isn't actually very reassuring. If the Commission were genuinely interested in minimizing the risk of a terrorist attack upon the ACP pipeline, it would not allow ACP to put the pipeline at the entrance to Wintergreen in the first place.

CO109-3 (cont'd)

Conclusion

The DEIS suggests at several points that pipeline safety isn't really any concern of the Commission's: PHMSA regulates pipeline safety, not the Commission. That suggestion is error. PHMSA has no authority over where pipelines are located. Only the Commission has such authority. Where a pipeline's proposed location raises a serious public safety issue, that concern is one which the Commission alone must address. A pipeline at such a location cannot reasonably be said to serve the public convenience. Therefore the Commission may not grant the proponent of that pipeline a Certificate of Public Convenience and Necessity.

Respectfully submitted,

THE FAIRWAY WOODS HOMEOWNERS CONDOMINIUM ASSOCIATION
By:

/s/

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April 1, 2017

Z-2326

Southern Shenandoah Valley Chapter

April 1, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: FERC Docket **#CP15-554**

Dear Deputy Secretary Davis:

I am submitting comments on behalf of the Potomac Appalachian Trail Club – Southern Shenandoah Valley Chapter (PATC-SSVC) on the Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline (ACP). PATC-SSVC is located in the Shenandoah Valley of Virginia in the Harrisonburg-Staunton-Waynesboro area. Our club leads hikes and maintains trails along the 16-mile route of the Atlantic Coast Pipeline through the George Washington National Forest (GWNF). In addition to hiking, PATC-SSVC typically does 1,000-2,000 hours of volunteer work on trails in the Shenandoah Mountain area of the GWNF each year.

When we hike, we enjoy scenic views, cascading mountain streams, wildflowers, birds, and geologic features, and we especially appreciate the large, unfragmented tracts of national forest on the Blue Ridge Mountains and Shenandoah Mountain. These tracts of wildlands offer supreme hiking experiences not just for our club, but for the 10 million people who live within a two-hour drive of the GWNF. The ACP route cuts through some of the premier areas of the national forest for scenic beauty, nature study, and outdoor recreation, including backpacking, birding, fishing, hunting, and mountain biking.

Our Conservation Committee has reviewed the Draft EIS for the ACP and have found it to be incomplete and very misleading. Some of the most essential information for a responsible decision is missing. Following is a list of our major concerns about the DEIS:

CO110-1

- **Scenic Integrity:** The DEIS fails to analyze impacts on scenic integrity in the GWNF, particularly around:
  - **Appalachian Trail and Blue Ridge Parkway** – The HDD western entrance, access road, and staging area will dominate the scenic view

CO110-1 FS response: Section 4.8.9.1 has been updated to include scenic impacts from the areas.

CO110-1 (cont'd)

from Torry Ridge Trail in the Sherando Lake Recreation Area. The pipeline route will be visible from many points along the Parkway and AT, including Three Ridges Overlook, Ravens Roost Overlook, Cedar Cliffs Overlook, Humpback Rocks, and Bee Mountain. The DEIS analysis does not include all of these.

- **Hankey and Shenandoah Mountains –** The DEIS incorrectly states that the pipeline will not be visible from the proposed Shenandoah Mountain National Scenic Area. The ACP corridor will be visible from many points on Bald Ridge Trail in Ramseys Draft Wilderness and from Wild Oak National Recreation Trail on Hankey Mountain.

The ACP Corridor would bisect the viewshed of Chestnut Oak Knob in the middle ground as seen from Wild Oak National Recreation Trail on Hankey Mountain. Photo by Malcolm Cameron

CO110-2

- **Trails South of Rt. 250** The ACP will mar scenic beauty seen from trails on Crawford Mountain, Elliott Knob, and southern Shenandoah Mountain, including Shenandoah Mountain Trail, a segment of the Great Eastern Trail, American's newest long distance trail. These scenic impacts are not addressed in the DEIS.

CO110-3

- **Proposed Shenandoah Mountain National Scenic Area (SMNSA)** PATC-SSVC is a strong advocate for Congressional designation of the the proposed SMNSA. We hike on Shenandoah Mountain and in Ramseys Draft Wilderness to enjoy the wild beauty and solitude the area offers. Our members maintain trails in Ramseys Draft Wilderness, including Bald Ridge Trail. The ACP would be clearly visible from all the best overlooks on Bald Ridge and Hankey Mountain. The ACP route would follow along and then cross Dowell's Draft Trail and White Oak Draft Trail. We concur with comments submitted by Friends of Shenandoah Mountain on March 24, 2017, regarding scenic impacts, forest and stream impacts, and recreation impacts on the proposed SMNSA. We also share their concern that the pipeline could mar the proposal and threaten its viability to be designated by Congress.

CO110-4

- **Recreation Resources:** The DEIS does not evaluate impacts on some of Virginia's prime recreation resources:
  - **Sherando Lake Recreation Area:** This is the most popular developed recreation site in the GWNF. The ACP would permanently degrade the scenic entrance to the recreation area, as the pipeline corridor follows Mt. Torry Rd. The DEIS omits any mention of Sherando Lake Recreation Area.

CO110-2 Section 4.8.8.2 has been updated to acknowledge that the visual areas identified by the commentor would be impacted the same as those described for pipeline facilities in non-forested and forested areas described earlier in the section.

CO110-3 See response to comment CO108-22.

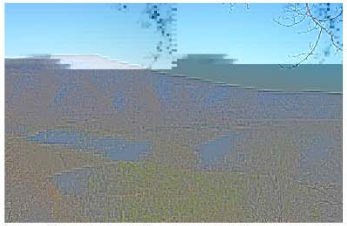
CO110-4 FS response: Section 4.8.9.1 has been updated to include scenic impacts from the areas.

CO110-4 (cont'd)

- **Braley Pond Day Use Area:** The ACP route crosses the Braley Pond access road, permanently degrading the scenic beauty that attracts so many fishermen, campers, hikers, mountain bikers, and naturalists. It would also fragment the forest around Braley Pond, providing a pathway for invasives. The DEIS does not mention impacts on Braley Pond Day Use Area.

CO110-5

- **Appalachian Trail Crossing:** We are very concerned about the AT crossing which would involve drilling 4,639 feet through the Blue Ridge 800 feet below the crest of the mountain using Horizontal Directional Drilling (HDD) technology. If this should fail, Dominion will use a combination of open trench and Direct Pipe Installation (DPI) 200 feet below the summit. Both the HDD and DPI methods involve substantial risk of failure and environmental damage, given workspace limitations and the topographic and geologic characteristics of the proposed drilling locations. The DEIS has not provided sufficient information to discern whether this operation could be successful. The Forest Service has placed a condition that if a Special Use Permit is issued, the HDD must be constructed successfully first before construction on other national forest land can occur. We think this is a reasonable stipulation that should be observed. This crossing is the only alternative offered. We request that other alternatives to the AT crossing at Reids Gap be considered in the DEIS. Finally, we agree with Appalachian Trail Conservancy's comments on the DEIS.



View of western HDD entry point from Torry Ridge Trail in the Sherando Area. Photo by Malcolm Cameron

View of Piney Mountain from Three Ridges Overlook on AT. Photo by Mike Waterman

SSVC hikers on AT near ACP crossing. Photo by Lynn Cameron

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COMPANIES/ORGANIZATIONS COMMENTS

CO110 – Potomac Appalachian Trail Club – Southern Shenandoah Valley Chapter (cont'd)

CO110-6
- **Biodiversity:** The Shenandoah Mountain area of the GWNF stands out as a "Biodiversity Hotspot" identified by The Nature Conservancy. The US Fish & Wildlife Service has identified 30 federally threatened or endangered species (TES), 2 designated critical habitats, 1 proposed species, 5 proposed critical habitats, and 6 species under review for federal listing that are known to occur along the ACP route. Many of the biological surveys for special species may not be completed until September 2017; therefore, survey results are not included in the DEIS and cannot inform the Forest Service decision on whether to issue a Special Use Permit. U.S. Fish & Wildlife Service would also need survey results to inform its recommendations for the project.

CO110-7
- **Forest Fragmentation:** According to the Virginia Department of Forestry, "Loss of forested acres and the fragmentation of the remaining acres reduces the potential of the forest to provide the economic, social and ecological benefits that we depend on." The core forested areas along the ACP route are a diminishing resource. The route cuts through 21 miles of our national forests chopping up 20 large core forest areas where biodiversity is the highest and harm to the interior forest from fragmentation and "edge effect" would be the greatest. An analysis of the ACP route through our national forests revealed that 2451.5 acres of high value core forest habitat would be lost to fragmentation from construction of the pipeline and access roads. For the entire route 14,786 acres of interior forest would be lost. Fragmentation will negatively impact many special species, such as migratory birds, pollinators, amphibians, reptiles, and mammals that need interior forest habitat. Fragmentation by 19 miles of access roads in our national forests alone compounds the problem. The DEIS acknowledges that the ACP will cause fragmentation that will have "significant impacts" on habitats. FERC states in the DEIS that forest fragmentation caused by the pipeline cannot be mitigated, yet it maintains the ACP will not result in "significant" cumulative impacts.

CO110-8
- **Water Resources:** The ACP route crosses 26 native brook trout streams in the GWNF alone. The DEIS does not fully examine the impacts on these streams. PATC-SSVC is particularly concerned about streams in the Hankey Mountain – Braley Pond area that are not addressed in the DEIS despite the USFS calling attention to them in advance of the DEIS being released: Braley Branch, Calfpasture River, Dowells Draft, and White Oak Draft. This is a serious omission of the DEIS. These are streams where we have been leading hikes for over 30 years.

CO110-9
- **Lack of Need:** A major weakness of the DEIS is that it so readily accepts the necessity of the project, even though this has been challenged by an independent study by Synapse Energy, *Are the Atlantic Coast Pipeline and the Mountain Valley Pipeline Necessary?* (Sept. 2016), that concludes that both the ACP and MVP are unnecessary and that existing pipelines, with modifications, can meet future demand through 2030.

CO110-10
- **Cumulative Impact of Multiple Pipelines**. With multiple pipelines across the AT and Blue Ridge Parkway being proposed and on the horizon, it seems reasonable to consider cumulative impacts of all these pipelines, but the DEIS

CO110-6 FS: The FS would include any needed mitigation measures or monitoring that may be determined from the completed surveys in the COM Plan and the SUP. The FS will not make a final decision until FWS consultation is completed and the BE is finalized.

CO110-7 Comments noted. Section 4.5.6 has been revised to include an updated interior forest fragmentation analysis.

CO110-8 See the response to comment CO104-2.

CO110-9 See the response to comment CO46-1.

CO110-10 The comment regarding class location and HCA designations in the EIS is noted. Per DOT regulations, Atlantic and DETI would be required to design and construct the pipelines based on identified area classifications and HCAs *at the time of construction*. If a subsequent increase in population density adjacent to the right-of-way results in a change in class location for the pipeline, Atlantic and DETI would reduce the MAOP or replace the segment with pipe of sufficient grade and wall thickness, if required to comply with DOT requirements for the new class location. See also the response to comment CO48-2.

CO110-10 (cont'd)

does not do this. FERC is the only agency that could examine cumulative impacts.

CO110-11

- **Insufficient Alternatives:** Another weakness is that the DEIS does not give serious consideration to an alternative that avoids the national forests or that co-locates this new utility with existing utility corridors. The DEIS conclusion that a 21-mile route through both forests is an acceptable option is not well supported. These two national forests are strongholds for biodiversity, native brook trout, clean water, recreational resources, and scenic beauty. The DEIS gives too much credence to mitigation and dismisses cumulative impacts related to these important values that our national forests provide.

CO110-12

- **High Hazard Areas:** The DEIS identified over 100 possible slope instability hazard locations along the proposed ACP route. Of these it identified 46 areas that met the criteria for further evaluation as geohazards. The Forest Service asked Dominion to provide detailed plans for 10 high-hazard areas that combined steep slopes, unstable soils, and problematic bedrock types. These conditions set the stage for severe erosion and harmful stream sedimentation, particularly during severe rain events. The most significant event was Hurricane Camille in 1969, but severe rainfall events that cause landslides happen every 11 years on the average. One of the "high hazard" areas is in the White Oak Draft area of Hankey Mountain which has >80% slope. See USFS letter, Oct. 24, 2016. Dominion has not provided enough detailed analysis and site-specific mitigation plans for the 10 areas to provide adequate information for the Forest Service to make a decision on whether to issue a Special Use Permit.

As one example of misinformation, the DEIS states that the pipeline will not be visible from the proposed Shenandoah Mountain National Scenic Area. The pipeline route would bisect this viewshed from Bald Ridge Trail in Ramseys Draft Wilderness. Photo by Lynn Cameron

The ACP is putting many fragile resources in the GWNF at risk. The timetable for the project does not allow ample time for the Forest Service to work its way through the evaluation and decision-making process following all their guidelines. Information, like Biological Surveys for sensitive species, detailed plans for areas at high risk for landslides and erosion, and a more detailed engineering plan for the HDD through the Blue Ridge must be available before a decision is made with adequate time for public review. The information in the DEIS is far too incomplete to proceed with a decision on the project. We request that FERC or the Forest Service do a Supplemental DEIS for

CO110-11 See the responses to comments SA15-3 and CO55-23.

CO110-12 FS response: The BIC Team and the SAIPR provide design and construction practices for steep terrain. Atlantic would also follow the FERC Plan and West Virginia and Virginia state requirements and BMPs. The FS continues to work with Atlantic on site-specific designs which would be used to minimize the potential risks for sliding and other slope instabilities and would require additional site designs.

the Atlantic Coast Pipeline. There is far too much at stake for our national forests and the public interest to rush through this process.

Thank you for the opportunity to comment.

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Z-2331

COMPANIES/ORGANIZATIONS COMMENTS

CO111 – Fenton Inn

Fenton Inn
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Federal Energy Regulatory Commission
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RE: Docket Nos. CP15-555-000 & CP15-554-000 & CP15-554-001 Atlantic Coast Pipeline
Comment and request of Fenton Inn (intervenor) on ambient sound levels re-check at HDD site near Blue Ridge Parkway and Appalachian Trail .

03/31/2017

Fenton Inn is a high end Bed and Breakfast located right next to planned HDD drill site to cross Appalachian Trail and Blue Ridge Parkway. The proposed HDD drill will have a construction time between 1- 2 full years of 24/7 drilling that would be heard throughout our valley. This area includes our Inn, Wintergreen and sections of Appalachian Trail and Blue Ridge Parkway overlooks.

From DEIS:
In addition, we received comments from the Fenton Inn that noise from HDD activities could impact its business. The Fenton Inn, which is identified as NSA S9 in table 4.11.2-3, is approximately 400 feet from the southeast BRP HDD entry point at the nearest structure based on the site-specific HDD drawing that has been filed by Atlantic. However, we note that Atlantic completed its noise analysis assuming the Fenton Inn was 600 feet from the HDD entry point (thus underestimating the noise impact at the Inn), and we have taken this discrepancy into consideration of our noise analysis.

CO111-1

Fenton Inn Response:
We were on site during the sound study. It was conducted not at the proposed HDD drill location, but some 200 or more feet away in the parking lot of the Wintergreen guardhouse. This would explain why they listed us as 600 feet away, which is the distance from where they parked their vehicle at the guardhouse to the end of our driveway where they checked for sound. Neither location is correct. Because of the unique nature of the topography of this site the sound study should be conducted from the HDD site to the various locations exactly to determine anything about this area, otherwise they might as well have conducted the sound study in a football field in Texas and drawn their conclusions from this data.

From DEIS
Atlantic proposes to install a noise barrier wall at the entry site near the Fenton Inn, as recommended by Atlantic's noise consultant. As a result, the increase in noise level experienced at the NSA would be below 3 dBA, or the threshold of noticeable difference. However, to ensure that the actual HDD noise levels are below our noise criterion at the Fenton Inn and that HDD noise levels do not significantly impact the NSAs near the Route 17 and Swift Creek entry and exit sites, we recommend that:
• Atlantic should file in the weekly construction status reports the following for NSA S9 near the BRP, the Route 17 HDD entry and exit sites, and NSAs S11, S13, and S14 near the Swift Creek entry site: a. the noise measurements from these NSAs, obtained at the start of drilling operations; b. the noise

Z-2332

CO111-1 The EIS acknowledged the discrepancy in the distance of the Fenton Inn from the BRP HDD. As discussed in section 4.11.2.2, FERC staff recommends that Atlantic file actual HDD noise levels during construction and implement additional noise mitigation measures if necessary to meet 55 dBA L_{dn}.

mitigation that Atlantic implemented at the start of drilling operations; and c. any additional mitigation measures that Atlantic would implement if the initial noise measurements exceeded an Ldn of 55 dBA at the nearest NSA and/or increased noise is greater than 10 dBA over ambient conditions.

CO111-2

From Fenton Inn:
The noise barrier will not have much use in this area. We are on a mountain, and sit over 100 feet above the HDD site. Other points listed are at even greater elevations, over 1000 feet above the HDD location. As such a wall, no matter how high, will not block out sound that travels up, or that echos off the mountains sides. This bowl shaped valley, will act like the Greek amphitheaters and allow sound to travel at unreduced volume for great distances. If one were to design a location to make the greatest sound possible they would locate this sound at the center of this valley, exactly where the HDD will be. From this point, like in an amphitheater, a speaker might be heard by thousands due to the curvature of the rocks/ mountains. A similar effect can be heard in church domes, where a whisper can be heard on the exact opposite side of the church. The old senate room in our nations Capital had this effect to such a degree due to the curved ceiling that neither side of the isle would dare whisper about the other, as the senator across the way would hear you as if next to them. While our current senators no doubt do not hear us from this quiet valley, any noise will travel farther and in unexpected ways due to the topography. We request an accurate sound study to be done of this valley.

From the DEIS:
Noise. We estimate that at a distance of 50 feet from ACP and SHP work areas, general construction would generate noise levels of about 85 decibels on the A weighted decibel scale (dBA), and about 92 dBA at 50 feet as a result of HDD operations for ACP (see section 4.11.2.2).

CO111-3

Fenton Inn:
It is unlikely this noise level is inclusive of blasting and the continuous use of rock breakers. Such noises will be both jarring and disturbing, more like a war zone than typical construction noises. The added noises of a constant stream of truck going up Wintergreen drive will make more noise for our Inn as well as those residence on Fortune Ridge. Due to the local topography, this sound level will carry at the same volume through out the area.

From DEIS:
Construction equipment noise levels would typically be about 85 dBA at 50 feet when equipment is operating at full load, which **could be heard by people in nearby buildings.**
Some discrete activities (e.g., hydrostatic testing, tie-ins, and purge and packing the pipeline) may require 24 hours of activity for limited periods of time, as would some HDD operations (see below). However, these activities would be short-term. Due to the temporary, transitory, and localized nature of pipeline construction, we conclude that **pipeline construction noise would not have a significant impact on nearby landowners.**
And later in the DIES:
HDD activities at the entry and exit points would last about 12 months and would likely be heard by users of the ANST. During construction, activities and their associated noise would be ongoing continuously for 24 hours per day.
And
HDD activities at the entry and exit points would last about 12 months and **would likely be heard to users of the BRP should they exit their vehicles at the crossing location.**

CO111-2 See the response to comment CO111-1.

CO111-3 Comment noted.

COMPANIES/ORGANIZATIONS COMMENTS

CO111 – Fenton Inn (cont'd)

From Fenton Inn:

CO111-4 We find the two above statement to be contradictory. We have been optimistically told the drill will be at least 14 month of 24/7 drilling. This does not sound like a temporary or transitory type thing. We are told to expect at least 2 years of construction here. One do not conclude that because World War II was temporary, transitory and localized, that the German invasion of Europe did not have a significant impact on nearby land owners. And what about the land owners, not nearby, what about the ones so close that they are under the actual pipeline? When Dominion sends a security detail of over a dozen 300 pound former marines to walk all over your property, you are not nearby, you right in the middle, knee deep in it all. When Dominion takes you to court, twice, to trespass ON your land, are you nearby? Nearby people live a mile or two away and still wonder if pipeline will carry crude oil from offshore drilling to West Virginia. They will probably not be impacted by the pipeline.

From other company on sound studies:

"the noise studies done by the gas pipeline owners are biased, performed by entities that are either owned by the owners of the pipelines or are doing a lot of business with the pipeline owners (conflict of interest). Furthermore, we will show that none of these "studies" are peered reviewed, the calibrations of the instruments are never checked by third parties and these "studies" are basically one-day or so noise measurements that are very frequently manipulated by the people who do these studies so that the pipeline owner is found to be in compliance with the noise "standard". In many cases, one company called Hoover& Keith, has reported the insect noises as a nuisance; they basically compared the high frequency noises of the compressors that are very annoying to the pleasant "noise" of the insects."

CO111-5 From the Fenton Inn:
The drilling will be a year round activity, no breaks, no Christmas holiday, no Thanksgiving, or any other holidays. The sound check for ambient noise was done during the peak of insect noises. This is a natural sound and lasts a month or less of the year. We also hear owls, hawks, falcons, a rare eagle, ravens, crows, fisher cats, song birds and an in-heat bob cat that sounded like something from a horror movie. These sounds we have in nature. We do not have HDD drilling, rock blasting or back up alarms of heavy equipment. The sound check if done in winter would show almost nothing but the occasional snowplow. Clearly the sound check buried a microphone near a cricket's backside and wrote down the data. Science needs to be repeatable and reviewable, and we would therefor request another sound check be done for this area.

From DEIS:
table 4.11.2-3 (Estimated noise levels for HDD Entry and Exit Sites)
BRP Entry,1,300 ft from Nearest NSA (S2 Palmer) existing ambient Sound Level 57.4
BRP Entry 600 ft from Nearest NSA (S9 Fenton Inn) existing ambient Sound Level 59.3
Interstate 64, 250 ft from Nearest NSA (S8) existing ambient Sound Level 57.9

CO111-6 From the Fenton Inn:
Somehow the data show that our ambient level of sound is higher than that of I64 and that the S2 Palmer site has almost the same level. We think this is a clear example of a biased study. The Palmer site has nothing to make noise, aside from crickets and the engine noise of the truck from which they sound sampled. There are no roads, no factories, nothing but undisturbed trees. Obviously this

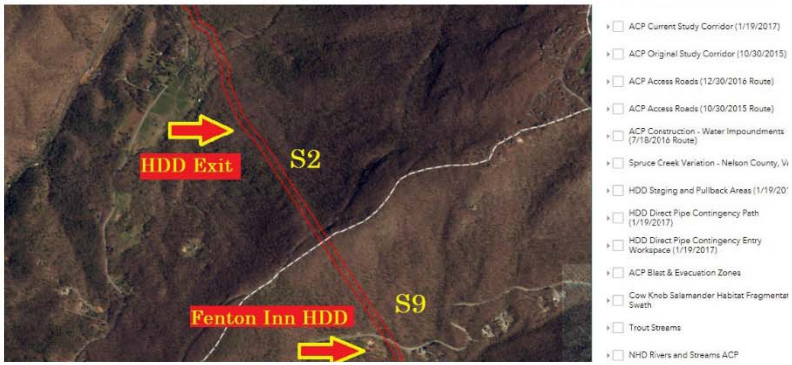
CO111-4 Active HDD drilling operations would last 14 months; however, restoration would last longer. This includes restoring the sites used for HDD operations and any surrounding pipeline construction in the general area. Restoration includes ensuring that vegetation cover is restored, which is confirmed over time after active construction is complete.

CO111-5 See the response to comment CO111-1.

CO111-6 See the response to comment CO111-1.

CO111-6 (cont'd)

answers the age old question, if a tree doesn't fall in forest, it makes an ambient sound level the same as a busy interstate highway according to Dominion's research. If they record a nonfalling tree, a highway with trucks and an HDD drill all at the same sound range, one must question their methods, calibration and bias. It is our request that the sound researchers get their equipment recalibrated and their hearing checked out by a medical professional before conduction of a new sound study to determine ambient sound for construction in our area.



Fenton Inn requests:

> Ambient sound study should be re-checked for our location as well as for points along the Appalachian Trail on National Forest Service and National Park Service Land, Three Ridges Overlook along the Blue Ridge Parkway.

In conclusion, the sound study was completely flawed. They recorded insect noises at locations other than those specified and sound checked noises from the wrong locations to the wrong locations and made some rather bold declaration that they found nothing to complain about, as long as hikers stay in their cars with the windows up and a cricket in each ear, they will not hear the loud drill noises from each side of the Blue Ridge Parkway and AT.

Thank you,
Will Fenton

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Kevin Bowman Kevin.Bowman@ferc.gov

COMPANIES/ORGANIZATIONS COMMENTS

CO112 – Fenton Inn

Fenton Inn
29 Shelton Laurel Trail
Roseland VA 22967

Nathaniel J. Davis, Sr.
Deputy Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., room 1 A
Washington, D.C. 20426

RE: Docket Nos. CP15-555-000 & CP15-554-000 & CP15-554-001 Atlantic Coast Pipeline
Comment and request of Fenton Inn (intervenor) on Class 3 pipeline at their location.

CO112-1 ACP developers find that Fenton Inn/ Wintergreen entrance location qualifies for HCA (High Consequence Area) on table 4.12.1-2 (High Consequence Areas crossed by ACP) and name our location as Nelson county , VA 158.4-159.1.

However on table 4.12.1-1 (lengths of area classifications crossed by ACP) they give us class 1 pipeline . You can see us as AP 1 157.7- 162.1 (class 1 pipeline).

According to the DOT rules, HCAs are to be designated as class 3. The table listing the class 3 sections of pipeline should be updated to reflect this for the miles VA 158.4-159.1 Additionally we were informed by Greg Park that the HDD section through the mountain would be also class 3 pipe as per DOT rules, and these mile points are not reflected in the DEIS table 4.12.1-1 either. We request that this be corrected for the final EIS.

Fenton Inn.
The Fenton Inn is located 84 yards from center line and has occupancy of greater than 20 when counting our family members and employees (kitchen, housekeeping, spa/massage, groundskeeping etc) as well as guests. Breakfast for 18 guests, plus ourselves and children was a typical day through out the fall and ski season and bookings indicate that summer will be quite busy as well. We are adding additional cabins as well, and expect that our numbers will be growing in both staff and guests as a result. We are already making our own line of European styled wines and additional future plans to include expanded food service, events and winery or tasting room on site, any one of which will more than exceed the HCA requirements for class 3 pipe in this area. The sited location for the tasting room would be slightly nearer to the road and potential pipeline route of the “up and over” the AT route after the HDD drilling attempts fail.

Wintergreen Guardhouse/ Exit area.
The guardhouse is the headquarters of the Wintergreen police, our areas first responders should a fire or gas leak happen or other emergency situation. This building is frequented by many people through out the day, and remains staffed at night. They have several holding cells for detaining arrested individuals. Evacuation of this building would be impossible in the event of a gas leak, as the radio headquarters of the police and fire are there as well. Additionally, the parking area is the gathering of all children from Wintergreen for the school bus, as well as our own bus stop. This gathering of children and parents at the bus stop when combined with other visitors to the guardhouse, makes for a busy gather place, and also qualifying it as a HCA area.

Z-2336

CO112-1 As described in section 4.12.1, area classifications are based on population density in the vicinity of pipeline facilities, and specifies more rigorous safety requirements for populated areas. In addition, the list of HCAs included in section 4.12.1 of the EIS follows the DOT rules that define a HCA as an area where a gas pipeline accident could do considerable harm to people and their property, and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for DOT to prescribe standards that establish criteria for identifying each natural gas pipeline facility in a high-density population area. We do not have the authority to require pipe thicknesses beyond what the DOT requires.

Also see response to comment CO110-10.

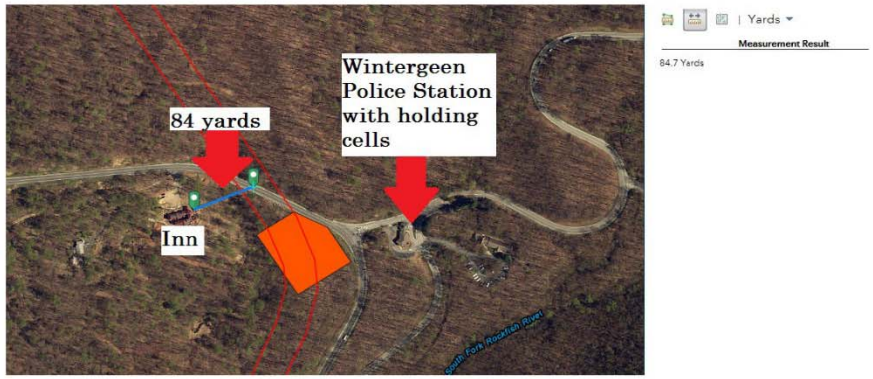
COMPANIES/ORGANIZATIONS COMMENTS

CO112 – Fenton Inn (cont'd)

CO112-1 (cont'd)

Further more up to 10,000 people could be stranded on the mountain with no other means of escape in the event of a gas leak or forest fire. The exit and entrance area would be closed off in such an event, and fire and rescue vehicles would similarly be trapped on the mountain top, unable to get to hospitals or to assist with fire and other services to the rest of the county.

For the above reasons, this area has correctly been seen as an HCA zone in the DEIS and we ask that this be reflected in the mileage tables for the class 3 pipes in the EIS.



Thank you,
Lilia and Will Fenton

cc:
Kevin Bowman Kevin.Bowman@ferc.gov

Z-2337

COMPANIES/ORGANIZATIONS COMMENTS

CO113 – Fenton Inn

Fenton Inn
29 Shelton Laurel Trail
Roseland VA 22967

Nathaniel J. Davis, Sr.
Deputy Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., room 1 A
Washington, D.C. 20426

RE: Docket Nos. CP15-555-000 & CP15-554-000 & CP15-554-001 Atlantic Coast Pipeline
Comment of intervenor explaining why ACP is not a public necessity.

03/27/2017

Dear FERC, NPS and NFS. I would like to point out the case that the ACP is not a public necessity, as so claimed by Dominion, but in fact redundant infrastructure for no real need other than to avoid paying other gas companies for the same service of the transportation of natural gas.

Repeatedly and even in personal conversations with Dominion employees and those involved with the ACP, we have been told the following:

CO113-1 1 Dominion NEEDS this gas pipeline for new power plants. The fact is that few electric companies such as Dominion ever have their own gas pipeline. Why? because they are in the electric power distribution business, and as a regulated monopoly, prevented from these activities. As a trade off for having a monopoly for a set area of service, the electric companies are subject to regulation and can not set their own pricing. If an electric power company needs to buy power, they do so from a Power generating company. In many cases these divisions were branched off from earlier power companies, such as in the case of Dominion which has grown from a government regulated monopoly. Even so, these companies still buy gas or coal from other companies, just as Dominion does today for its power generating gas powered plants. Dominion has a monopoly over a set area, and therefor complete control over literally millions of customers who can not just call another power company to get service. With the exception of gas that Dominion sells to India and Japan from its new LNG plant, the entire revenues for Dominion are from the customers held under the monopoly territories. By allowing Dominion the rights to control pipeline pricing to be used by Dominion for power production, this makes it possible for Dominion to shift profits from the regulated monopoly side of their business, to the profit of the ACP (which are nontaxable and unregulated). It essentially extends their monopoly to new areas of business and decreases competition. As with all cases of markets, decreasing competition and allowing on company more control over a captive customer base will only result in high prices, poorer service and less accountability to the environment. There is no NEED for these power companies to buy coal mines or gas pipelines, or rail road lines. It undermines the competition, hurting true gas companies and consumers. As the ACP pipeline is both a violation of Free-trade and the Sherman-Clayton aintitrust laws, as well as not needed, the ACP should not be granted the rights to eminent domain over private or public lands.

CO1113-1 Any project that is approved by the Commission conveys the right of eminent domain, and this authority is specifically spelled out under the NGA for installation and operation of pipelines. The legality of eminent domain is outside the scope of this EIS. See also the response to comment CO46-1.

COMPANIES/ORGANIZATIONS COMMENTS

CO113 – Fenton Inn (cont'd)

CO113-1 (cont'd)

2 With out Dominion making our power we would all be frozen next winter or stumbling around in the dark in the mid 1800s. We have all heard various forms of this logic, but it just doesn't work out that way. Again, there are hundreds of power companies, and if Dominion wants to play God or King and shut off our power, I am sure that some other company would gladly take over their customer base and provide equal to or better service. The same is true about the power generated by Dominion. If they can not do the job (safely, environmentally and following the rules) I am sure there are many other power companies willing to step in and take over. So who really needs who? I am sure that Dominion's customers would survive with out power for a while, where as Dominion would not last more that a week with no customers. If we should be thanking them for doing a job such as power, they should be thanking the captive consumers for paying their bills. We still need our power and power grid, but Dominion is just one of many companies. Perhaps everyone should look at the other states, many places choose their power providers now and so could pick another company to make power based on price and environmental concerns. Many other places would not allow a government regulated monopoly to get into gas pipelines. I am aware that Dominion is a multiple of companies, but too often they speak as one, as if it is normal to have a regulated monopoly getting into other aspects of power generating and gas transmission. This blurred line must be redrawn by FERC. What other power company is trying to become a player in the gas pipeline industry? It is a clear conflict on all levels, from determining the ACP true customer base and contracts for gas, to the fair determining of electrical rates. How can the government regulators determine a fair price for electricity if the entire supply chain of energy from Fracking hole to consumer is owner by one company and shrouded in mystery? The answer is you can't, which is why most Electric companies are prevented from such activities.

3 Dominion has a right to make profits. Actually this is false too. Dominion is a regulated monopoly, and as such, in exchange for a captive audience of customers, the government is supposed to oversee fair rates. So in fact the Dominion electric part of the company, should have a limit on its profits to protect consumers who can not just up and leave the area. Free markets dictate that if you don't like the eggs at one store, you go to another. The egg seller doesn't tell you that with out him, you would starve or that your only other option is to go get some hens and a chicken coop. People go to get better eggs at the next store. The same is not true in the electric companies. We have no choice to go to the next store in this state or decide who provides the electric service. Dominion must therefore be regulated to avoid over pricing and should not be allowed to branch out to other areas of the energy supply chain, such that excessive profits might be made at levels such as the pipeline. It would be easy for Dominion to claim higher cost for power, meanwhile making greater profits on the pipeline. This would hurt the customers. It will also hurt customers if this venture of the ACP or other speculative ventures were to fail. Dominion would have to recoop losses somehow, and the only way would be through higher rates to their captive customers or government bail out money. If there is a true need for more natural gas, other pipelines of traditional gas pipeline companies can and will provide all the needed gas for power generation. It is not the role of electric companies to build rail road for coal or pipelines for gas transport. Dominion is trying to outgrow its original charter of an electric company, but do so it should give up its monopoly control, or hold its business venture to the stated role of electric power and not venture into the gas business with the ACP.

Do not grant Dominion the right to eminent Domain over our land. They are not acting in the public good, but further looking for ways to control and set prices for electricity. The ACP is not needed for the power supply, but wanted for profits to avoid paying established pipelines to transmit the required gas for new power plants. From time to time, government regulated monopolies need to be told NO by the government and reminded of their original mission of serving their customers. Dominion does not need to get further into the gas industry or take on risks that might eventually end up placed on the backs of the customers, the government and most of all those who will be forced to give up their land

CO113-1 (cont'd)

to this un-needed project.

The ACP is nothing more than two electric monopolies trying to expands their control over more customers. This is a violation of freetrade and the original intent of the charters that allowed such monopolies to be created. Dominion is an electric company, and as such should be limited to this activity. Contracts between Dominion and itself from one branch of the company to the other should not be considered as anything but a violation of aintitrust laws. If there is a clear need for more pipelines, let the established gas companies provide the needed gas either through the existing pipelines or with extra capacity being added around the east coast with many other new pipeline projects.

Will Fenton

cc:
Kevin Bowman Kevin.Bowman@ferc.gov

COMPANIES/ORGANIZATIONS COMMENTS

CO114 – North Carolina Association of Electric Cooperatives, Inc.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Atlantic Coast Pipeline, LLC	)	**Docket Nos. CP15-554-000 *et al.***
Dominion Transmission, Inc.	)	**Docket No. CP15-555-000**
Piedmont Natural Gas Company, Inc.	)	**Docket No. CP15-556-000**

NORTH CAROLINA ASSOCIATION OF ELECTRIC COOPERATIVES, INC.'S COMMENTS IN SUPPORT OF THE ATLANTIC COAST PIPELINE

Pursuant to the Notice of Availability of the Draft Environmental Impact Statement for the Proposed Atlantic Coast Pipeline, Supply Header Project and Capacity Lease Proposal issued in the above-captioned dockets on December 30, 2016, the North Carolina Association of Electric Cooperatives, Inc. ("NCAEC") hereby submits this statement of support for the Atlantic Coast Pipeline ("ACP"), Supply Header Project and Capacity Lease Proposal (collectively "ACP Projects"). NCAEC is an association of North Carolina rural electric cooperatives, formed in 1978 to provide public relations, government relations, member services and job safety and training for North Carolina's 26 rural electric cooperatives.

As proposed, the ACP Projects will consist of a total of 641.3 miles of natural gas transmission pipelines and associated facilities, three new natural gas-fired compressor stations, and modifications of four existing compressor stations. These projects would provide about 1.44 billion cubic feet per day of natural gas to electric generation, distribution, and end use markets in Virginia and North Carolina. NCAEC supports the construction of these projects because they will bring significant benefits to North Carolina consumers and the North Carolina economy.

CO114-1

CO114-1 Comment noted.

Z-2341

CO114-1 (cont'd)

The ACP Projects will bring savings to North Carolina consumers. As the North Carolina Utilities Commission noted in its October 23, 2015 supportive filing in Docket No. CP15-555-000, the "ACP will provide 1.5 million dts/day of new pipeline capacity from West Virginia to a point near Lumberton, North Carolina …. ACP will provide capacity to fuel growth and electric generation, provide an interstate pipeline footprint along the I-95 corridor of North Carolina, and provide new competition in the wholesale provision of natural gas in North Carolina."[1] In other words, North Carolina's consumers, including the members of North Carolina's rural electric cooperatives, will experience millions of dollars in aggregate energy savings because the ACP, once constructed, will give their electric utilities access to a lower-cost fuel that is likely to remain low-cost as a result of price competition between Transco gas piped north into the State and ACP gas piped south from the Marcellus and Utica shale plays.

The ACP Projects will also bring jobs and economic development to North Carolina. NCAEC members work hard to provide a wide range of support for businesses seeking to start, expand or relocate to the Tar Heel State. Since 1995, North Carolina's electric cooperatives have helped bring more than 14,600 jobs and $903 million of economic investment to the state. NCAEC understands that the ACP Projects will create several thousand jobs during the construction phase and up to 1,000 direct and indirect jobs once the projects are fully operational. Members of North Carolina's electric cooperatives deserve the opportunity to benefit from such jobs. NCAEC also understands that access to reliable and reasonably-priced natural gas supplies is a fundamental requirement of many modern business operations, especially manufacturing. The expanded availability of reasonably-priced natural gas made possible by the ACP Projects will greatly enhance the ability of NCAEC and its member

[1] Dominion Transmission, Inc., Docket No. CP15-555-000, Notice of Intervention, Comments In Support of Project and Protest of Proposed Recourse Rates of the North Carolina Utilities Commission at 3 (October 23, 2015).

CO114-1 (cont'd)

cooperatives to recruit new load and create additional employment opportunities for residents of eastern North Carolina. Construction of the pipeline will likely provide other significant benefits as well, such as important new tax revenues to help support local governmental services.

NCAEC is aware of the draft Environmental Impact Statement ("DEIS") prepared by the Federal Energy Regulatory Commission ("FERC") staff for the ACP Projects and appreciates FERC's thorough review of these projects. The DEIS concludes "that construction and operation of ACP … would result in … impacts on the environment [but that with the pipeline developers'] respective impact avoidance, minimization, and mitigation measures as well as their adherence to [FERC's] recommendations to further avoid, minimize, and mitigate these impacts, the majority of project effects would be reduced to less-than-significant levels."[2]

Given the DEIS conclusions, and assuming the continued viability of these conclusions, NCAEC urges FERC to approve the ACP Projects. North Carolina's need for cleaner, reliable, American energy should not be delayed.

[2] Atlantic Coast Pipeline, *et al.,* Docket Nos. CP15-554-000 *et al.*, Draft Environmental Impact Statement at ES-14 (December 2016).

Respectfully submitted,

By: */s/ Denise C. Goulet*

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Attorneys for
North Carolina Association of Electric
Cooperatives, Inc.

April 3, 2017

CERTIFICATE OF SERVICE

Pursuant to Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2010, I hereby certify that I have this day served the foregoing document upon the parties identified on the Commission's official service lists in these proceedings by electronic means.

Dated at Washington, D.C. this 3rd day of April, 2017.

By: */s/ Denise C. Goulet*

Denise C. Goulet
McCarter & English, LLP
1015 Fifteenth Street, N.W.
Twelfth Floor
Washington, D.C. 20005
(202) 753-3439

COMPANIES/ORGANIZATIONS COMMENTS

CO115 – Energy Equipment and Infrastructure Alliance, Inc.

April 3, 2017

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

RE: Docket Nos. CP15-554-000 and CP15-554-001

Dear Ms. Bose:

CO115-1

I am writing to urge FERC approval of the Atlantic Coast Pipeline (ACP).

EEIA is the trade association representing large and small companies, many family-owned, that serve construction markets throughout the regions where this much-needed project will be built and operate. Our members provide equipment, supplies and services to contractors who build energy infrastructure, including energy processing, transportation and storage complexes, and the pipelines that connect them. We are the energy construction supply chain.

ACP will support the jobs of thousands of skilled individuals in the professional, technical, administrative and construction trades employed by our member companies.

Not only will the ACP create thousands of well-paying jobs during its construction. Our research shows it will also support over 15,000 permanent jobs in the energy supply chain. These jobs include workers throughout the United States supplying construction, equipment, materials, services and logistics necessary for the production and consumption of the natural gas the Atlantic Coast Pipeline will transport.

Our member organizations have close and long-standing supply relationships with contractors operating throughout the affected region, including many of those that will be involved in this project. They provide the best equipment available with respect to safety, productivity and reliability, emissions control, low operating footprint, and minimal land disturbance.

Because of all of the construction and energy production activities this pipeline will enable, jurisdictions and communities throughout the ACP's served regions and beyond will benefit from worker incomes earned and spent locally. The resulting state and local taxes paid by them and their employers will support public education, environmental programs, infrastructure, public safety and other state and local government operations.

We encourage the Commission to approve the Atlantic Coast Pipeline.

Sincerely,

Toby Mack
President & CEO
Energy Equipment and Infrastructure Alliance, Inc.
601 Pennsylvania Avenue, NW, Ste 900
Washington, DC 20004

CO115-1 Comment noted.

Z-2346

COMPANIES/ORGANIZATIONS COMMENTS

CO116 – Fenton Inn

Fenton Inn
29 Shelton Laurel Trail
Roseland VA 22967

Nathaniel J. Davis, Sr.
Deputy Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., room 1 A
Washington, D.C. 20426

RE: Docket Nos. CP15-555-000 & CP15-554-000 & CP15-554-001 Atlantic Coast Pipeline
Comments and requests of Fenton Inn (intervenor).

03/27/2017

As an intervenor and affected property owner who's business and private properties directly and negatively affected by construction and operation of the Atlantic Coast Pipeline, I would like to submit a comment and requests on record with FERC.

Fenton Inn is a high end environmentally conscious Bed and Breakfast in Nelson County, VA. Our guests come here to escape stresses of city life and enjoy the quiet peaceful environment with unobstructed and untouched views of the National Forest, Blue Ridge Mountains and Piney Mountain at Wintergreen Resort. We get guests from all over the world and people who serve in high level positions in stressful jobs, from FBI investigators to top Pentagon brass, diplomats and doctors. Almost daily someone stares out the large floor to ceiling windows looking right towards the future pipeline cut and comments about how amazing the view is or how rare to see so much undisturbed nature around. Each morning they comment about how quiet it is and how they slept with the windows open for the first time in a decade or more. Well traveled people all agree that this spot we have here is a rare gem in a world of sirens and construction noise, highways and power-lines. The ACP will forever alter this area.

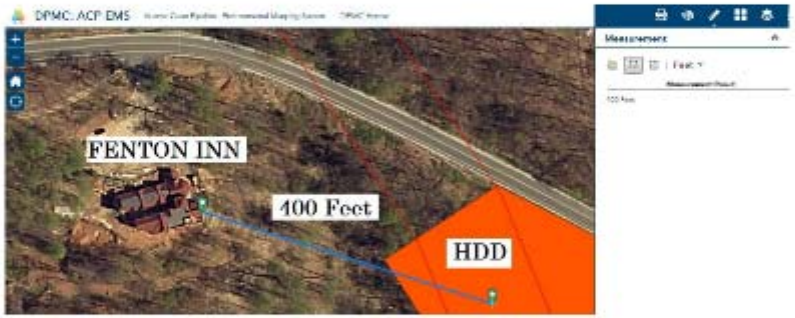
ACP developers plan to cross Blue Ridge Parkway and Appalachia Trail by HDD method and want to establish large scale drilling operation in our front yard . In addition to blasting, excavation, leveling, clearing and other activities in our immediate area we will be forced to experience Horizontal Directional Drilling for more than 1 year under the fastest case scenario. It could be twice this or more given the time lines of other Dominion projects in which years have become a decade of construction.

Our peaceful Bavarian Village is located just 240 feet from the year plus long construction area and 400 feet from HDD entrance and all the mining equipment that will be running 24hrs a day to drill through the impossibly hard metabassalt rock.

Z-2347

COMPANIES/ORGANIZATIONS COMMENTS

CO116 – Fenton Inn (cont'd)



We have multiple concerns and recommendations:

Duration of construction and impact on tourism / Fenton Inn.

1.From DEIS:
We conclude in section 4.9.5 that the projects would not result in significant or adverse impacts on recreational or special interest areas in Wintergreen and the Rockfish Valley. As such, and given the relative **short time frame for construction,** we conclude the projects would not result in significant or adverse long-term impacts on tourism.
and
Construction crews would typically work 10 hours per day, 6 days per week. Work would be conducted during daylight hours, except at stream crossings, final tie-in welds, and where the pipe is being installed using the **HDD or bore methods, which require around-the-clock operations** and

Z-2348

typically last 24 hours to a few weeks or, **for the proposed HDD crossing of the BRP and ANST, could take 1 year or longer.**

CO116-1

Fenton Inn:
Our business will be **severely damaged for a very long period of time** and potentially would have to be **closed for the entire duration of ACP construction**. Your statement of short time frame will not apply to our situation. We will have 24/7 large scale drilling operation with constant heavy machinery traffic supporting HDD operations, with day like night illumination of a work zone and all of this in addition to clearing, leveling, blasting and other activities in our immediate area.

2.From DEIS:
We received comments regarding the potential for negative effects on natural resources and the environment from construction and operation of ACP and SHP to negatively affect tourism, particularly in the Rockfish Valley and Wintergreen areas in Nelson County, Virginia and in Yogaville, Buckingham County, Virginia. Travelers and tourists would experience temporary visual and noise impacts associated with construction personnel and equipment and vegetation removal associated with construction work spaces. **Atlantic would coordinate** with Rockfish Valley and **Wintergreen area businesses and recreational stewards to inform them of construction schedules and traffic volumes and would, to the extent practicable, schedule construction activities to avoid conflicts with special events.**

CO116-2

Fenton Inn:

- Can ACP developers guarantee that **no work would be done on week-ends** and at times of special events (weddings) at the Fenton Inn? As you know week-ends are especially important at our destination. We are not an Airport hotel and our environment (views, quiet atmosphere etc) dictate absolute peace and quite at week-ends.

- Will ACP developers stop HDD operations for our events ?

We would like to see your answer in EIS as well as specific instructions on how to accomplish such promises.

3.From DEIS on contingency plan if initial HDD will fail:
Implementing this contingency option **would increase the duration of project activities and the resulting air, noise, and traffic impacts from these activities in the vicinity of the ANST, BRP, Wintergreen Resort, and other residences and businesses in the area.**
Should the Direct Pipe option be required, the pipeline right-of-way would be visible along select portions of Beach Grove Road, Mt. Torrey Road, Reeds Gap Road; by various residences and business along these roads (i.e., Fenton Inn); by residences along the northern portion of Fortunes Ridge; and from other observation points on adjacent mountain ridges.

CO116-3

Fenton Inn:
In addition to clearing, excavation, grading, blasting and 1 year + HDD operations we will be forced to yet another prolonged construction activities in our front yard. We have been told that multiple drill attempts will be required before finally abandoning the HDD route is allowed. This will likely mean that 2 years of failed drilling will already devastate our business, only to have the up and over plan

CO116-1 Comment noted. We acknowledge that businesses may be directly and indirectly impacted by the projects. Potential impacts on local businesses would be reduced to the extent possible by proposed mitigations discussed by resource throughout the EIS. In addition, Atlantic and DETI would implement a Landowner Complaint Resolution Procedure for landowners to contact Atlantic or DETI if they have any concerns during the construction period or during restoration. In addition, the FERC's Landowner Helpline can be utilized in the event Atlantic's or DETI's response is not satisfactory to the landowner. We have also added a recommendation in section 4.8.8.2 that Atlantic identify mitigation measures to reduce the impacts associated with lighting to complete the extended (12 to 14 months) activities for the BRP and ANST HDD crossings.

CO116-2 The HDD construction method requires a continuous 24-hour per day/7-day per week schedule, and the proposed HDD crossing of the BRP and ANST could take 1 year or longer. As discussed in section 4.11.2.2, FERC staff recommends that Atlantic file actual HDD noise levels during construction and implement additional noise mitigation measures if necessary to meet 55 dBA L_{dn}. Atlantic would be required to meet an L_{dn} of 55 dBA (or not exceed an increase of 10 dBA over ambient noise levels). Should these conditions not be met, Atlantic would be required to implement mitigation to meet these levels; however, we allow Atlantic the flexibility to determine what mitigation it implements so long as the requirements are met. This may or may not include relocation.

See also the response to comment CO116-1.

CO116-3 Comment noted.

CO116-3 (cont'd) implemented to clear cut across the AT and Blue Ridge Parkway. If the rock at the first HDD spot is undrillable, it is unlikely that even a shorter drill placed higher up the mountain will have any greater chance of success, given that the metabassalt layer run at an angle and appear as cliffs along the Blue Ridge Parkway, thus even at the very top of the ridge, these rock layers will effect the ability to drill. The final option to keep this route, and the one that the National Park Service should be aware of, is that the pipeline will need to be trenched the entire way including the AT and Blue Ridge Parkway crossings. While Dominion has repeatedly suggested that the 75 foot wide clearing of 200 year old forests will be good for "huntin" it is not the natural woodland and views that the NPS and NFS have worked so hard to protect.

NOISE.

From DEIS on noise:

Noise. We estimate that at a distance of 50 feet from ACP and SHP work areas, general construction would generate noise levels of about 85 decibels on the A weighted decibel scale (dBA), and about 92 dBA at 50 feet as a result of HDD operations for ACP (see section 4.11.2.2).

Construction equipment noise levels would typically be about 85 dBA at 50 feet when equipment is operating at full load, which **could be heard by people in nearby buildings.**
Some discrete activities (e.g., hydrostatic testing, tie-ins, and purge and packing the pipeline) may require 24 hours of activity for limited periods of time, as would some HDD operations (see below). However, these activities would be short-term. Due to the temporary, transitory, and localized nature of pipeline construction, we conclude that **pipeline construction noise would not have a significant impact on nearby landowners.**

And

HDD activities at the entry and exit points would last about 12 months and would likely be heard by users of the ANST. During construction, activities and their associated noise would be ongoing continuously for 24 hours per day.

And

HDD activities at the entry and exit points would last about 12 months and would likely be heard to users of the BRP **should they exit their vehicles at the crossing location**.

Fenton Inn:

CO116-4 Fenton Inn can not operate with 24/7 construction noise that will last for more than 1 year and is predicted to be heard from Blue Ridge Parkway and Appalachian trail that located much farther from HDD than Fenton Inn. This situation is **devastating for our Business as well as to our family since we work and live in the same place.**

From DEIS on Construction Noise Impacts and Mitigation :

As indicated (in bold) in table 4.11.2-3, NSAs near the Route 17 and Swift Creek entry and exit sites

CO116-4 See the response to comments CO111-1 and CO116-2.

are estimated to exceed the FERC's 55 dBA Ldn noise guideline at the nearest NSA. The HDD noise levels at these locations would range from 4.8 dBA to 13.3 dBA above ambient. In addition, NSAs S11, S13, and S14 near the Swift Creek entry site would experience a 10 dBA or greater increase in noise above ambient.

Atlantic would install a noise control wall at these locations (which was taken into account in the noise estimates); however, these locations would still result in noise levels above the FERC guideline of 55 dBA, Ldn. Accordingly, Atlantic proposes to **temporarily relocate landowners where noise levels exceed the FERC guideline**. Atlantic would notify residents 1 month prior to the start of HDD operations, and would finalize temporary relocation plans 2 weeks prior to drilling. Relocation could last for the duration of the drill, approximately 3 to 6 weeks.

Fenton Inn:

CO116-5 If ACP developers fail to keep HDD operations under 55 dBA **we request to be relocated for entire period of construction plus all business lost revenues should be compensated as well**.

From DEIS:

In addition, we received comments from the Fenton Inn that noise from HDD activities could impact its business. The Fenton Inn, which is identified as NSA S9 in table 4.11.2-3, is approximately 400 feet from the southeast BRP HDD entry point at the nearest structure based on the site-specific HDD drawing that has been filed by Atlantic. However, we note that Atlantic completed its noise analysis assuming the Fenton Inn was 600 feet from the HDD entry point (thus underestimating the noise impact at the Inn), and we have taken this discrepancy into consideration of our noise analysis. Atlantic proposes to install a noise barrier wall at the entry site near the Fenton Inn, as recommended by Atlantic's noise consultant. As a result, the increase in noise level experienced at the NSA would be below 3 dBA, or the threshold of noticeable difference. However, to ensure that the actual HDD noise levels are below our noise criterion at the Fenton Inn and that HDD noise levels do not significantly impact the NSAs near the Route 17 and Swift Creek entry and exit sites, we recommend that:
• Atlantic should file in the weekly construction status reports the following for NSA S9 near the BRP, the Route 17 HDD entry and exit sites, and NSAs S11, S13, and S14 near the Swift Creek entry site: a. the noise measurements from these NSAs, obtained at the start of drilling operations; b. the noise mitigation that Atlantic implemented at the start of drilling operations; and c. any additional mitigation measures that Atlantic would implement if the initial noise measurements exceeded an Ldn of 55 dBA at the nearest NSA and/or increased noise is greater than 10 dBA over ambient conditions.

Fenton Inn:

CO116-6 We would like to comment on noise barrier that ACP proposes at our location. Unless ACP developers plan to install 100 foot tall wall that would completely enclose entire HDD site including roof- this wall will be useless.
Our Inn located 100 feet or so above the site of the HDD entrance site. Noise will easily travel above and over any 20 foot tall wall that ACP developers told us. Moreover on both sides of HDD entrance site we have mountains in a bowl or amphitheater shape and echos travel back and forward with out losing volume. There is no way to mitigate HDD noise other than to not have HDD in a first place.

CO116-5 See the response to comment CO116-4.

CO116-6 See the response to comment CO116-4.

CO116-6 (cont'd)

As such **Fenton Inn requests**:

1. We want to **install Decibel Sound Reader at our Inn** (closest NSA) and record **noise levels before construction** is started (ambient) and entire time of construction. We want **ACP developers to pay all associated expenses** since they already falsified information about noise studies at our location. They can also re-calibrate equipment when using their own contractors in order to show false levels. So it is a very simple request from us to be able to choose our own contractor and ACP pays for the study that they required to have. All of the equipment will be at our location and would not be re-calibrated by ACP developers.

2. Fenton Inn requests that **if at any time sound level is higher than permitted 55dBA – all HDD operations should be immediately stopped** and allowed to proceed ONLY at levels under 55 dBA.

3. We ask FERC to impose specific construction noise limitation at HDD entry site.

We believe that due to unique topography (HDD in a low elevation and surrounded by mountains), excessive length of time (possibly 2 years) and close proximity to Fenton Inn (less than 240 feet from construction site and less than 400 feet from HDD entry site) our requests for strict control of ACP construction noise should be included in EIS.

ACP developers did not offer any relocation and compensation to us. They did not submit any plans of noise mitigation for our site in DEIS. We believe that the barrier wall will not work and want FERC to impose strict and specific noise limitation at our location.

Fenton Inn is a high end Bed and Breakfast. Federal regulations of 55 dBA might be already too high a number for our quiet location. We located in a secluded woodsy area with low traffic (picture 3) and our base ambient noise levels are very low. Numbers of ambient noise levels from our location submitted by ACP developers are false and based on distance of 600 feet instead of 400 feet.

COMPANIES/ORGANIZATIONS COMMENTS

CO116 – Fenton Inn (cont'd)

CO116-6 (cont'd)

4. We want to re-evaluate ambient level at Fenton Inn and request that FERC do not allow any additional dBA above ambient level at our location.

If ACP developers can not meet 55dBA, they should relocate our family providing same level of accommodations as we currently have and compensate for business losses for entire time of relocation.

Fly-rock, vibration, noise and damages due to blasting near Fenton Inn

Due to our mountainous location and minimal dirt cover we expect heavy use of blasting technique right near Fenton Inn.
Our business based on absolute peace and quiet model. Flying rocks, loud noises and vibration are not part of that.

CO116-7

Fenton Inn requests:

1. Blasting seismograph to be installed at Fenton Inn and monitored by contractor of our choice and paid by ACP developers.
2. If any structures will be damaged- ACP developers will fix everything at their expense.

Light pollution at Fenton Inn

CO116-8

We were informed that not only Fenton Inn will be subject to 24/7 noise pollution, but all night we will have a stadium quality lighting in our front yard. Multiple guest rooms face to the HDD construction area. Moreover most of our guests come from cities where they can no longer see night sky and stars. They enjoy beautiful night sky at Fenton Inn and comment on brightness of the stars. If ACP developers plan to cause light pollution- that would deprive our guests from night sky enjoyment and good night rest. All of this in addition to constant 24/7 noise pollution for 2 years or longer.

CO116-7 Comment noted.

CO116-8 Section 4.8.8.2 has been revised to include the commentor's statements, and we have added a recommendation that Atlantic identify mitigation measures to reduce the impacts associated with lighting to complete the extended (12 to 14 months) activities for the BRP and ANST HDD crossings.

Z-2353

COMPANIES/ORGANIZATIONS COMMENTS

CO116 – Fenton Inn (cont'd)

CO116-8 (cont'd) How will ACP developers mitigate light pollution at Fenton Inn?

Increased traffic and air pollution

From DEIS:
Atlantic and DTI estimate a total of 125 to 150 vehicle trips per day for Spreads 1 through 5, and 90 to 115 vehicle trips per day for Spreads 6 through 13. It is further estimated that there would be approximately 325 to 400 vehicles total used to construct each pipeline spread.

Plus

Water Requirements for Horizontal Directional Drills for the Atlantic Coast Pipeline
BRP/ ANST Augusta County, Virginia
AP-1 Mainline/ MP 158.2
Approximate Water Requirement for Hydrotesting (thousands of gallons) 325
Approximate Water Requirement for Drilling Mud (thousands of gallons) 4,517
Water will be Trucked In (Source Point; South. James River Road Boat Ramp)

Plus

Construction of ACP and SHP would result in temporary increases of **pollutant emissions** from the use of diesel- and gas-fueled equipment, blowdown and purging activities, open burning, as well as temporary increases in fugitive dust emissions from earth/roadway surface disturbance. Indirect emissions would be generated from vehicles associated with construction workers traveling to and from work sites. Fugitive dust would result from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity. The volume of fugitive dust generated would be dependent upon the area disturbed and the type of construction activity, along with the soil's silt and moisture content, wind speed, precipitation, roadway characteristics, and the nature of vehicular/equipment traffic.

Fenton Inn:

CO116-9 Due to unprecedented length of time for construction (possibly 2 years) near Fenton Inn and thousands of construction vehicle trips we estimate that our Business will suffer very high volume of construction traffic and associated air pollution.

CO116-10 We request that EIS includes provisions on air control at HDD location. We want to be able to know how FERC plans to monitor , record and control air quality at vicinity of Fenton Inn.

We also want to request to not allow ACP developers to stockpile or burn any tree remnants near the Fenton Inn due to the risks of forest fire and added pollution.

CO116-9 Comment noted.

CO116-10 Atlantic would conduct open burning in accordance with state regulations and its Timber Removal Plan, Fire Plan, and Open Burning Plan. Construction emissions estimates are provided in section 4.11.1.3 in table 4.11.1-5. Fugitive dust would be managed by Atlantic's Fugitive Dust Control and Mitigation Plan.

Well water.

From DEIS:
2.1.3-2. Atlantic will continue to identify private supply wells within 150 feet of the construction work space. In addition, wells will be identified within 500 feet of the proposed pipelines in karst areas and **within 0.25 mile of horizontal directional drill (HDD) activities.** These additional survey efforts are scheduled to begin in the Fall of 2015. Results of the surveys will be provided in supplemental filing.

Fenton Inn:

CO116-11 ACP developers **did not perform any well water testing at our location.** On the picture below you will see 3 wells that will be less than 0.25 mile from HDD under AT and Blue Ridge Parkway. Closest well belongs to Fenton Inn, other wells to Will and Lilia Fenton. None of them were tested by Dominion.

Fenton Inn requests ACP developers will pay for :

1. All 3 wells to be tested before, during (monthly) and after HDD and other construction activities.
2. Contractors for water testing will be chosen by Fenton Inn in order to prevent falsified results.
3. If during construction water quantity or quality will worsen- ACP developers will fix everything to pre-construction condition.
4. While fixing the wells all of the business and personal water needs will be covered by ACP developers.

CO116-11 The majority of groundwater impacts associated with pipeline installation would be limited to areas where shallow aquifers are crossed. Most of these impacts would be temporary, and could be avoided or minimized by the use of standard or specific construction procedures specified by FERC in section 2.3. Following is a summary of potential impacts and recommendation mitigation procedures.

As discussed in section 4.3.1.7, Atlantic and DETI have developed a well sampling plan that presents procedures for pre-construction monitoring of all identified drinking water supply wells, which includes private, community, municipal/public wells, and springs within 150 feet of the proposed construction workspace in non-karst terrain and within 500 feet of the proposed construction workspace in karst terrain. If a damage claim is filed with Atlantic or DETI, Atlantic and DETI would conduct post-construction water quality tests, which would be analyzed by a certified laboratory, to determine if water supply wells and springs are affected by construction activities. If damage occurs, Atlantic and DETI have committed to providing a temporary potable water source, and/or a new water treatment system or well. We recommend in the EIS that Atlantic and DETI offer to conduct, with the landowner's permission, post-construction water quality tests, using the same parameters used in the preconstruction tests, for all water supply wells and springs within 150 feet of the construction workspace and within 500 feet of the construction workspace in karst terrain. We also encourage anyone who believes their well or spring may be affected by construction of the proposed projects to specifically request a preconstruction water quality and yield survey. Should construction activities affect a well or spring, landowners can negotiate the delivery of alternative water supplies and/or water sources with Atlantic/DETI. If Atlantic and DETI are unresponsive or unwilling to negotiate, we encourage landowners to contact FERC's Landowner Helpline to investigate the problem.

Seismic activity and landslides in vicinity of ACP project.

From DEIS:
The USGS (Petersen et al., 2016) estimates there is a 2 percent chance for an earthquake to occur over the next 50 years (recurrence interval of 2,475 years) that would result in a PGA greater than 0.1 g for two locations within ACP and SHP areas. The area within the AP-1 mainline between MPs 170 to 260 is an area where PGA between 0.10 g and 0.15 g may be attained due to the proximity of the Central Virginia Seismic Zone (CVSZ) located approximately 25 miles to the northeast.

The USGS also estimates that there is a 10 percent chance for an earthquake to occur in the next 50 years (i.e., a recurrence interval of 475 years) that would result in a PGA of between 0.02 g and 0.04 g in the project area.

The USGS (Petersen et al., 2016) estimates in the areas crossed by ACP, there is a 2 percent chance for an earthquake to occur over the next 50 years (recurrence interval of 2,475 years) that would result in a PGA of between 0.07 g and 0.09 g. The USGS also estimates that there is a 10 percent chance for an earthquake to occur in the next 50 years (i.e., a recurrence interval of 475 years) that would result in a PGA between 0.02 g and 0.03 g where ACP crosses the GWNF. Additionally, ACP would not intersect any known, mapped, or interred active fault lines within the GWNF (USGS, 2006), and the potential for soil liquefaction is low.

Fenton Inn:

CO116-12 At our location we experienced earthquake in 2011. Area of proposed HDD is highly dangerous. Please see below.

The **2011 Virginia earthquake** occurred on August 23 at 1:51:04 p.m. local time in the Piedmont region of the US state of Virginia. The epicenter, in Louisa County, was 61 km (38 mi) northwest of Richmond and 8 km (5 mi) south-southwest of the town of Mineral. It was an intraplate earthquake with a magnitude of 5.8 and a maximum perceived intensity of VII (*Very strong*) on the Mercalli intensity scale.

With an estimated magnitude of 5.8.,[4] it, along with a quake on the New York–Ontario border in 1944 and the 2016 earthquake near Pawnee, Oklahoma is tied as the largest to have occurred in the U.S., east of the Rocky Mountains, since an equivalent 1897 quake centered in Giles County in western Virginia.[5]

The quake was felt across more than a dozen U.S. states and in several Canadian provinces, and was felt by more people than any other quake in U.S. History.[6]

The earthquake prompted research that revealed that the ***farthest landslide from the epicenter was* 150 miles (240 km), by far the greatest landslide distance recorded from any other earthquake of similar magnitude.** Previous studies of worldwide earthquakes indicated that landslides occurred no farther than 36 miles (58 km) from the epicenter of a magnitude 5.8 earthquake. The Virginia earthquake study suggested that the added information about East Coast earthquakes may prompt a revision of equations that predict ground shaking.

CO116-12 Comment noted.

CO116-12 (cont'd)

Picture from Scitechdaily.com

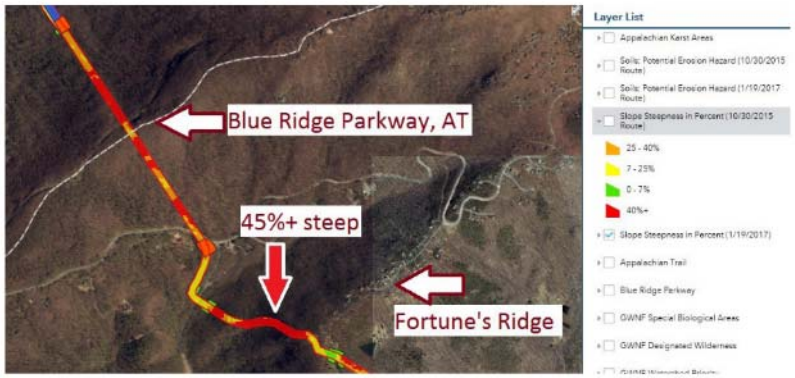
From DEIS on landslides:

Thirty-eight sites were located along ACP AP-1 segment, between MP 0.0 and MP 172.6.
Considering the historic and recent landslide incidences in the immediate project area, along with the factors above, we conclude that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur.

Fenton Inn:

CO116-13

Please see the picture below with arrows pointing to very steep mountains in vicinity of HDD entrance near Wintergreen . Right after leaving HDD tunnel pipeline will have rapid climb in a very short distance.
In respect to both seismic activity and landslides- area of HDD tunnel with 4 fault lines and steep slope of Piney Mountain at Wintergreen should be avoided. It is a **man-made disaster waiting to happen.**



CO116-13 Comment noted.

Z-2357

Fenton Inn request for class 3 pipeline

From DEIS:

any area in Class 1 or 2 where the potential impact radius is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle; or any area in Class 1 or 2 where the potential impact circle includes an identified site.
An "identified site" is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.
In the second method, an HCA includes any area within a potential impact circle that contains:
• 20 or more buildings intended for human occupancy; or • an identified site.
Once a pipeline operator has determined the HCAs along its pipeline, it must apply the elements of its integrity management program to those sections of the pipeline within HCAs. DOT regulations specify the requirements for the integrity management plan in Subpart O of Part 192, Gas Transmission Pipeline Integrity Management.

CO116-14 Fenton Inn

The Fenton Inn has occupancy of greater than 20 when counting our family members and employees as well as guests. Breakfast for 18 guests, plus ourselves and children was a typical day through out the fall and ski season and bookings indicate that summer will be quite busy as well. We are adding additional cabins as well, and expect that our numbers will be growing in both staff and guests as a result. While we can not predict what effects the pipeline will have on the tourism of the area, Wintergreen or our own business, we do expect a dramatic decrease during the time of construction, and for this decrease to continue for a year or more after construction is finished. Assuming tourism to the area will return in a few years, our Inn will be having more than enough people for nearly ¾ of the year to be classified for class 3 pipe in our area.

Additionally, the Wintergreen police headquarters and the only exit from Wintergreen is located in the same spot. The police station has a high number of people coming through out the day and staffed at night as well. They also have several holding cells. The Exit is the only escape for up to 10,000 people who on some events are on the mountain. Any fire of emergency rescue, or local police would need to come through this spot in the case of a pipeline disaster, forest fire or other disaster, either man made or natural. The route 664 has been washed out in prior flooding at the lower crossing of the ACP near the Wintergreen entrance sign (1969) and at some time in the 80s? Wintergreen had a forest fire causing residence to be trapped on the mountain with out means of evacuation. Had the pipeline been present for either event, a disaster might have occurred. The repeat of these events is a matter of when not if the occur. We are asking that the pipeline be made as safe as possible to avoid a predictable event.

We are told that the entire HDD section would be class 3, we ask that this be extended to go past the second 664 crossing to protect the Wintergreen exit and our Inn. Additionally, as it will be come clear at some point that the drill is not possible, we ask that the class 3 section be used anyway through this valley as the pipeline goes up and over the Blue Ridge Parkway. Both the AT and Blue Ridge Parkway

CO116-14 See the responses to comments CO66-56 and CO48-2.

COMPANIES/ORGANIZATIONS COMMENTS

CO116 – Fenton Inn (cont'd)

CO116-14 (cont'd) get a high volume of traffic and hikers and should be classified as a frequented park near a pipeline for a class 3 pipe designation. We also feel the area of Fortunes Ridge, where rock falls/slides might be common, should be made to extend the class 3 pipe from the AT crossing through the valley past Wintergreen entrance to beyond the top of Fortunes Ridge.

CO116-15 In conclusion, the ACP is a poorly planned and environmentally destructive project. Hind sight will show it as the last efforts of an oversized monopoly to expand into speculative markets that will under all scenarios of the ACP's success or failure, will result in higher costs for the captive consumers controlled by Dominion power. Having no benefit to the public, this project is purely a gamble of a few wealthy stake holders in Dominion, while the all the risks and costs are passed along to the consumers and the true burdens and risks fall onto those unlucky enough to be in the arbitrary line someone drew on a map at a Dominion meeting years ago. Dominion's business plan for the ACP relies entirely on the government to take the land for the easements, to allow them to pass the costs on to the consumers and to avoid executing proper environmental standards. Such a business plan is entirely contrary to the fundamentals of capitalism, democracy and the rights of citizens to own their property and businesses in the path of the pipeline. It looks an awful lot like the deals that dictators and communist countries hand out, taking from one group and giving to a few rich friends.

Many highly knowledgeable people have written long reports to FERC. We know with certainty the ACP will not bring cheaper energy bills to Virginians. Dominion has agreed to keep rates the same for a few year, they will also avoid audits and taxes, how nice for them. We know that the cost of transporting natural gas on the ACP will be higher than current rates of Transco, and that Dominion has 20 year contracts with them to supply the two new natural gas power plants and that any additional power plants are yet to be approved, thus any talks about needed gas pipelines is speculative at best. Dominion keeps talking about customer time-lines, yet the customer is themselves, and their partner Duke Energy and the commitments for future gas is on power plants yet to be built or even approved. By all standards, such agreement with ones own company has no merit, any more than one writing their own letter of recommendation about themselves. Laws used to ban controlled monopolies from such activities, and likely still do but somehow go unchecked. None of this benefits anyone except the shareholders of Dominion. But in the long run, the tides of technology will over run any government favoritism or tightly gripped monopoly. Power usage is lowering with the change to LED bulbs and

CO116-15 See the responses to comments CO46-1, CO66-2, and CO60-1.

Z-2359

CO116-15 (cont'd)

more energy efficient appliances. Solar power is dropping in costs, making it a viable solution. By the time the pipeline is operational, I will have gone solar here, this year marks the first time the math really works out to be profitable in so far as cost per kilowatt, and it is likely to drop lower still in the future much like flat screen tvs were once $20,000 novelties. As more rural homes convert, the over production of power on the grid will make new power plants sit idle, further raising the costs to customer of Dominion. The tipping point will be dramatic and the effect on the ACP will cascade to bankruptcy, leaving a mess for the government to clean up and bail out well before the ACP can pay for itself. In the meantime, none of Dominions claims of cheaper cost and great jobs will pan out to anything. They will cut a great scar across some of the last undisturbed land in Virginia and for no real purpose except for an electric company to gamble in the gas pipeline business. Along the way, many people will have suffered, lost property, destroy their National Forests and Parks and stepped on the dreams of those businesses that rely on natural beauty of our mountain, not natural gas.

Our dream, of building a Bavarian style bed and breakfast, by hand in the peaceful woods, has been one of those most hurt by the ACP. Having just opened, we should be enjoying the success of our place. Each day we get compliments by guests who love the Inn and the quiet area in the mountains. It is hard for us to think beyond the destruction Dominion will soon bring to our dream. While many people will suffer to be along the construction of the ACP, we are so uniquely blessed to get the very worst spot on the 600 miles of pipeline. We get a year plus of drilling the HDD tunnel just outside our door, followed by another year of blasting and rock breaking. These are the best case scenarios of progress. It could be worse than this. It might take multiple drill attempts to fail. After two years of failure, they will simply go up and over the Parkway and the AT. There is no good way to look at this, no possible way to assure us that explosives on granite is peaceful and quiet or that 24/7 drilling for over a year (est 14 months by Dominion) will be a nice soothing sound for our guest to enjoy. They

CO116-15 (cont'd)

can not even assure us that they will take proper safety on our section and use class 3 pipeline, in the case of a leak in this critical area, class 3 has more safety features, electronic shut offs and deeper burial as well as thicker pipe walls. They have not offered us compensation for business losses, relocation or even done correct evaluation of sound, light and traffic impacts to our business. Dominion, FERC and even several reporters and documentary makers have been out to our Inn. Even Dominion's people are impressed with the woodwork here, but don't seem to think the sweet soothing sounds of blasting and drilling for two years would interfere with rest and relaxation of our guests.

The ACP is a burden on all Virginians, even Dominion will end up regretting this project as a monumental waste of money. It has already cost a half a billion dollars, and millions of lost hours. We, like so many others on this ACP route, have spent thousands of dollars and hundreds of hours in a two year struggle attempting to defend our rights to our own property. Dominion has spent at least a quarter of a billion in reports and lawyer fees. All the involved agencies of the state and federal government have had to spend countless hours to defend wetland and National Parks, salamanders and conservation easements. Various anti-pipeline groups have each raised and spent millions as well as countless hours of volunteer work, from lawyers, surveyors, geologists and ornithologists, biologists, engineers and business owners. I could have easily built a large house in the same hours lost on this pipeline, maybe two. Given the massive army of people dedicated to this cause, we could have built parks and hospitals or landed a man on the moon with less efforts.

Since I know only those fellow antipipeline people read this far, I will say that I can only hope that with or with out this ACP, we should continue forward in our fight for the environment, property rights and alternative energy. I thank and applaud each of you for writing your stories and research to FERC, useless though it may seem, I have read many of them and found some help and insights in their pages. Most of us, would have been quietly contented to build their dream home or business in the woods, but then the Dominion helicopters find us, and suddenly the World's problems are heaped upon us. We are at the center of environmental and legal debates. We have found out just how ugly the state government can be. We have seen an elderly widow told by Dominion she has no right to object. We have witnessed lies retold by Dominion over and over, and even when proven to be lies, they just go on saying it. We have found that no one really knew where the AT was, and that someone in an office in Philadelphia can tell you it is 400 feet over on private land, from a map Dominion gave them. Once outed on the lie, Dominion just shrugs and keeps going with out consequences. We have chased off survey crews from our land, only to spend a year in court over a law that no one can figure out the grammatically correct use of and / or and just what it means to say NO. We have seen wealthy people who assumed they had influence be angrily silenced by the same politician they funded. We have learned all about HDD drilling, magnetic rock layers, metabassalt fault lines and ground water contamination. We have walked the woods along the pipeline and seen a fisher cat, falcons, a golden eagle and rare plants in a delicate forest. Dominion's survey crew walked, dug a one scoop deep hole and declared that nothing of interest was in the area. We have seen the worst of people, but at time we have seen some good. There are still people working for the Park Service and National Forest intent on preserving the land entrusted to them. There are people who come from other states to tell about their battle with pipelines, lawyers who donate time, expert in many fields who devote years to fighting this pipeline, dozens of people were outside the courthouse in support of us on the days I was sued (twice so far) by Dominion. I think even the judge did his best to delay and hear all sides of the case.

CO116-15 (cont'd)

This is just the beginning of our ACP struggles; our peaceful woods already surveyed for destruction, our quiet rural life forever politically charged. We have only the rights we are willing to fight for in this world and not one bit more. The last two years plus have merely prepared us for the long battles ahead. Dear Dominion expect to be sued, repeatedly, expect to be shut down, sound checked, filmed, studied, sampled and tested. In the meantime I will putting up solar panels.

Will Fenton

cc:
Kevin Bowman Kevin.Bowman@ferc.gov

COMPANIES/ORGANIZATIONS COMMENTS

CO117 – Friends of the Central Shenandoah

Comments by Friends of the Central Shenandoah re:

Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement

Atlantic Coast Pipeline, LLC
Dominion Transmission, Inc.

Docket Nos. CP15-554-000, CP15-554-001, and CP15-555-000 FERC/EIS-0274D

General Comments

Do What the Law Requires

The Federal Energy Regulatory Commission (Commission) has authority under Section 7 of the Natural Gas Act to regulate Interstate Natural Gas Pipelines and Storage Facilities. Under Part (e) the Commission has the authority to issue a certificate that authorizes the construction and operation of a project that "is or will be required by the present or future public convenience and necessity; otherwise such application shall be denied."[1]

As part of its review process, the Commission prepares environmental documents, and in this case, a Draft Environmental Impact Statement (DEIS) was prepared and released on December 30, 2016.[2] The Council on Environmental Quality has issued guidelines to federal agencies about how to prepare environmental statements for projects under their jurisdiction that will conform to requirements of the National Environmental Policy Act (NEPA). In §1502.14 Alternatives including the proposed action, the NEPA guidelines state that "This section is the heart of the environmental impact statement."[3] The NEPA instructions identify that the environmental impacts of the proposal and the alternatives must be presented in a comparative form, "thus

[1] Natural Gas Act of 1938, Section 7 (15 USC §717f)
[2] Atlantic Coast Pipeline and Supply Header Project, Draft Environmental Impact Statement, Federal Energy Regulatory Commission, Docket Nos. CP15-554-000, CP15-554-001, and CP15-555-000, FERC/EIS-0274D, December 2016
[3] Department of Energy, National Environmental Policy Act Guidelines, http://energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf

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sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." The NEPA requirements specify that agencies preparing Environmental Impact Statements shall:[4]

a. Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
b. Devote substantial treatment to each alternative, including the proposed action so that reviewers may evaluate their comparative merits.
c. Include reasonable alternatives, not within the jurisdiction of the lead agency.
d. Include the no action alternative.
e. Identify the agency's preferred alternative or alternatives.
f. Include appropriate mitigation measures not already included in the proposed action or alternatives.

CO117-1 The DEIS for the ACP claims that it was prepared in compliance with the requirements of NEPA, but that is not the case. There is no evidence of market demand included in the DEIS. Only precedence agreements with subscribers who are affiliates of the owners of the pipeline have been included. The Commission's own guidelines show that this is not an adequate indication of market demand for a project. In guidelines prepared in 1999, the Commission stated, "Rather than relying only on one test for need, the Commission will consider all relevant factors reflecting on the need for the project. These might include, but would not be limited to, precedent agreements, demand projections, potential cost savings to consumers, or a comparison of projected demand with the amount of capacity currently serving the market."[5] In their Policy Statement issued in 2000, the Commission explained: "that as the natural gas marketplace has changed, the Commission's traditional factors for establishing the need for a project, such as contracts and precedent agreements, may no longer be a sufficient indicator that a project is in the public convenience and necessity."[6]

[4] Ibid.
[5] United States of America 88 FERC ¶ 61,227, Federal Energy Regulatory, Issued September 15, 1999
[6] Order Clarifying Statement of Policy, 90 FERC ¶ 61, 128 (2000); Certification of New Interstate Natural Gas Pipeline Facilities, Docket No. PL99-3-001, Issued February 9, 2000

CO117-1 See the responses to comments CO6-1 and CO46-1.

CO117-1 (cont'd)

We ask that the Commission follow its own directives and provide information in the DEIS that identifies demand projections, potential cost savings to consumers, and a comparison of projected demand with the amount of capacity currently serving the market, so that the public can understand the reasoning that the proposed action is considered to be in the public's interest (not just in the applicant's interest).

NEPA also requires that the DEIS include a discussion of related issues and alternatives not within the jurisdiction of the lead agency. The DEIS includes no mention of the higher cost to ratepayers to use new pipelines when adequate capacity is available in less expensive existing pipelines; no mention is made of the societal costs of accelerated climate change due to methane leaks along the natural gas supply chain; no mention has been made of the possibility and the existing occurrence of lower electricity demand, energy efficiency and lower cost renewables undercutting the cost of energy from new gas-fired power plants leading to stranded costs; and investments in the accelerated development of natural gas infrastructure foreclosing investments in cleaner, lower-cost generation options. These are issues that should be considered when determining whether this project serves the public convenience and necessity and should be included in the DEIS which supports that determination.

Once the required information is provided, the case law on the agency's requirement to revise an environmental document is clear. An EIS that fails to provide the public a meaningful opportunity to review and understand the agency's proposal, methodology and analysis of the need for a project and its potential environmental impacts violate NEPA. See e.g., California ex rel. Lockyer v. U.S. Forest Service, 465 F. Supp. 2d 942, 948-50 (N.D. Cal. 2006); see also Idaho ex rel. Kempthorne v. U.S. Forest Service, 142 F.Supp.2d 1248, 1261 (D. Idaho 2001) ("NEPA requires full disclosure of all relevant information before there is meaningful public debate and oversight.").

Friends of the Central Shenandoah believes that the mandate for a full analysis of the "public convenience and necessity" for pipelines involves more than a professed, but unsubstantiated, need for more pipeline capacity.

In this matter, the Commission must take a "hard look" at the new information, review it in

CO117-1 (cont'd)

the context of the application and current public comments, and then revise the DEIS to incorporate the new information. At the same time, the Commission should rescind the DEIS and hold the public comment period in abeyance until it issues the revised DEIS. Lastly, the Commission should require the ACP to file all additional information that is vital to the NEPA review before proceeding further.

Alternatively, FERC must issue a supplement to the DEIS that addresses all new information. FERC must not issue a certificate until the supplement fully incorporates all necessary information to justify that the project provides for the public convenience and necessity and is finalized following public notice and comment.

Proper Statement of Project Purpose

In its initial application to the Commission filed September 18, 2015, the purpose of the ACP was described as: "to provide firm natural gas transportation service of up to 1.5 million Dekatherms per day (MMDt/day) through a new interstate pipeline system extending from Harrison County, West Virginia, southeast to Greensville County, Virginia, and then from this point south into eastern North Carolina and east to the City of Chesapeake, Virginia."[7]

The DEIS has a more accurate description of the purpose of the project:

1.1 PROJECT PURPOSE AND NEED

Atlantic's and DTI's stated purpose for ACP and SHP are, in summary:[8]

• to serve the growing energy needs of multiple public utilities and local distribution companies in Virginia and North Carolina by using the natural gas to generate electricity for industrial, commercial, and residential uses;

[7] Abbreviated Application for a Certificate of Public Convenience and Necessity and Blanket Certificates, Atlantic Coast Pipeline, LLC, Docket No. CP15- ___ -000, September 18, 2015

[8] Atlantic Coast Pipeline and Supply Header Project, Draft Environmental Impact Statement, Federal Energy Regulatory Commission, Docket Nos. CP15-554-000, CP15-554-001, and CP15-555-000, FERC/EIS-0274D, December 2016

CO117-1 (cont'd)

- to provide natural gas for direct residential, commercial, and industrial uses;

- to increase the reliability and security of natural gas supplies in Virginia and North Carolina;

- to provide access to a low-cost supply hub[9] with a large volume of transactions characterized by multiple buyers and sellers willing to trade natural gas on a daily basis and into the futures market (liquidity).

This is closer to an appropriate test as to whether the proposed project best fulfills the public convenience and necessity. However, in the DEIS, alternatives to the proposed project were dismissed because, as stated in the DEIS, the purpose of the project "is to transport price-competitive natural gas from West Virginia to electric generation, distribution, and end-use markets in West Virginia, Virginia, and North Carolina" and those alternatives did not accomplish that. By cleverly stating that the purpose of a project is to build a pipeline from Supply Zone A to Market Zone B, pipeline developers rule out any options that are not pipelines that serve precisely those locations. Limiting the discussion of alternatives to that specific set of circumstances does not conform to NEPA nor does it allow for discovering the alternative that best fulfills the public convenience and necessity.

The option that best meets the public's interest is the one which provides adequate energy to satisfy the comfort and economic well-being of the inhabitants of the region at the lowest cost and with the least environmental impacts. This does not limit the alternatives only to those that involve natural gas. We understand the Commission's interest in limiting the discussion to natural gas-related issues and we will concentrate our attention there, but not exclusively.

[9] A hub is a location where two or more pipeline systems interconnect and that offers administrative services that facilitate the movement and/or transfer of gas.

Specific Comments

CO117-2

1.1.1 Atlantic Coast Project

The ACP states that the need for the pipeline is to provide adequate gas supplies to a number of proposed gas-fired power plants in Virginia and North Carolina. Nearly 80% of the pipeline capacity is allocated for this purpose. Of the thirteen power plants that are proposed to receive some gas supplies from the ACP, only one is currently operating (Brunswick) and only one more (Greensville) will be operating before the pipeline is proposed to be in operation. None of the remaining eleven power plants have been approved for construction by the appropriate state agencies. Obviously, utility projects require long-term planning and arranging for adequate fuel supplies is part of that planning. However, year after year, the utilities in Virginia and North Carolina who are creating this demand for more natural gas have revised their load forecasts downwards. Even these revised forecasts have been questioned by many, including the regulators, as being overly optimistic.

The Commission is being asked to give permission to build a pipeline on speculation. It is like building a pipeline to provide gas service to a building site that does not exist to serve a house that has not received a building permit. If the need ultimately occurs, there are better and less expensive ways to serve the demand that does not require such a speculative investment.

Numerous pipeline projects are being promoted by developers who want to make money building a pipeline or by natural gas producers eager to find customers for their surplus gas. Early in the 21st century, electricity demand stabilized or declined. It is no longer growing in lockstep with population and economic activity.

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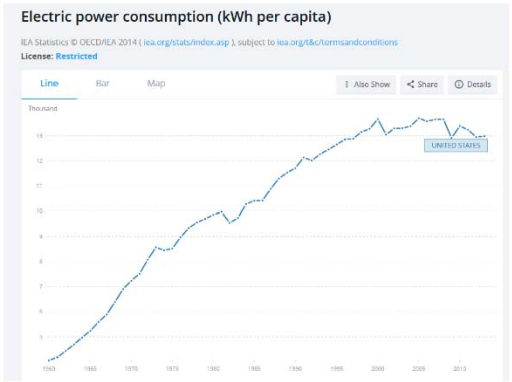
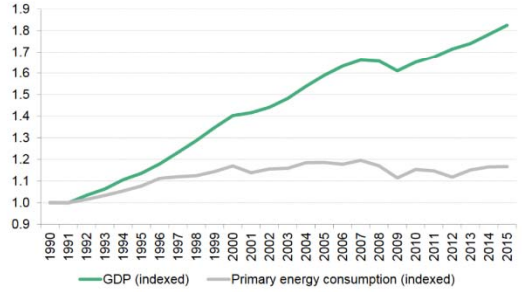
CO117-2 In general, natural gas prices are mainly a function of market supply and demand. It is beyond the scope of this EIS to assess the potential change in the future price of natural gas due to changing demand, and the exact future price of natural gas to the consumer is unknown. How any savings are allocated or passed on to consumers is more appropriately addressed through the state public utilities commission or applicable agency with jurisdiction over the local distribution agency.

See also the responses to comments CO6-1 and CO46-1.

CO117-2 (cont'd)



Energy Consumption and Growth in GDP



Source: Bloomberg New Energy Finance

The remaining 20 percent of the reserved capacity would go to the traditional uses of natural gas. The EIA forecasts that residential use of natural gas will decline by 0.6% per year between now and 2040. Commercial and industrial uses will increase 0.4% and 0.6%, respectively. Industrial consumption will be especially sensitive to the price of gas. Use of natural gas for electricity generation will grow at a rate of 0.5% per year.

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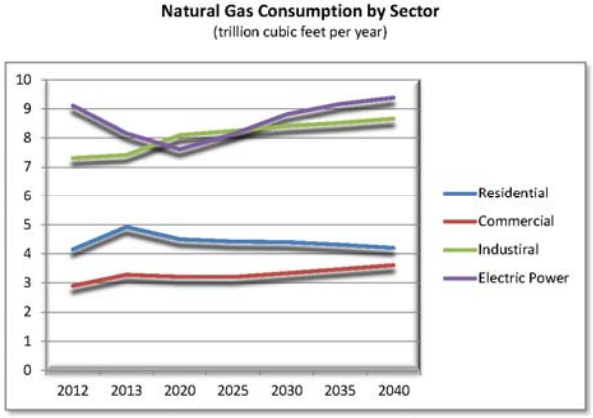

Source: Energy Information Administration[10]

The Local Distribution Companies (LDCs) in North Carolina, Piedmont Natural Gas and Public Service Company of North Carolina, have historically received their supplies via the Transco Pipeline and have recently committed to receiving additional supplies from that source. The abundant capacity in the Transco corridor (to be discussed later) could continue to supply any future needs of the North Carolina LDCs at a significantly lower transportation cost than provided by the ACP.

To protect the public's interest the question must be answered, "What is the best way to assure adequate supplies of natural gas for use in power plants in Virginia and North Carolina in a way that accommodates uncertainty in the amount of gas required and avoids stranded costs if the proposed demand for more natural gas does not materialize?"

[10] Annual Energy Outlook 2015, U.S. Energy Information Administration, April 2015, DOE/EIA-0383(2015)

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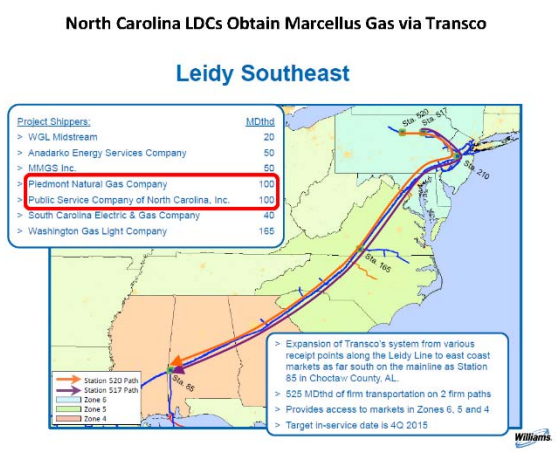

The DEIS references the open season and the RFPs in 2014 as evidence that there is no other available source of natural gas to this region. There are several reasons why this is a misleading assumption. Suppose you are responding to an RFP and you ask the organization requesting the proposal "where do you want us to deliver the gas?" and they respond "we don't know, the sites have not been selected and the plants have not been approved". Are you confident that you can provide a reasonable response? Takeaway pipelines are now available moving volumes of gas into the gas transmission network greater than the amount proposed by the ACP that were not available in 2014. The question to be answered is what is the best method available today to provide adequate gas supplies to Virginia and North Carolina?

The Complications of Self-Dealing

Throughout the DEIS the Commission refers to existing precedent agreements for 96% of the proposed capacity of the project as clear evidence that the project is needed. No other evidence of market demand for the project is provided. This is especially troublesome since over 93% of the subscribed capacity is reserved by affiliates of the owners of the pipeline. The commission has recognized that "using contracts as the primary indicator of market support for the proposed

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CO117-2 (cont'd)

pipeline project also raises additional issues when the contracts are held by pipeline affiliates."[11] The extent of the self-dealing involved with the ACP is shown below:

Atlantic Coast Pipeline Ownership

Organization	Parent Company	Ownership
Dominion Atlantic Coast Pipeline LLC	Dominion Resources	48%
Duke Energy ACP	Duke Energy	47%
Piedmont ACP Co. LLC	Duke Energy	included in Duke
Maple Enterprise Holdings, Inc.	AGL/Southern Co.	5%

Customers	Parent Company	Volume Dekatherms	Percent of Capacity
Virginia Power Services	Dominion Resources	300,000	20.0%
Duke Energy Progress	Duke Energy	452,750	30.2%
Duke Energy Carolinas	Duke Energy	272,250	18.2%
Piedmont Natural Gas	Duke Energy	160,000	10.7%
Public Service of NC	SCANA Corp.	100,000	6.7%
VA Natural Gas/AGL	Southern Co.	155,000	10.3%

This severely distorts an unbiased evaluation of whether a project is necessary. The ACP customers are not independent or negotiating at arm's length. FERC Order 497 notes that:

"The Commission agrees with commenters who state that the potential for abuse of the pipeline-affiliate relationship exists whether the gas being transported is owned, brokered, or sold by a pipeline's affiliate. The Commission is concerned with a transaction conducted on a pipeline that benefits the pipeline or the corporate group of which it is a part. In such a transaction, there is an economic incentive for the pipeline to favor the transaction. Any affiliate of a pipeline can conduct a transaction which benefits the pipeline or the corporate group of which it is a part."[12]

[11] Order Clarifying Statement of Policy, 90 FERC ¶ 61, 128 (2000); Certification of New Interstate Natural Gas Pipeline Facilities, Docket No. PL99-3-001, Issued February 9, 2000, p16

[12] FERC Order 497, June 1, 1988

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CO117-2 (cont'd)

The Supreme Court View of a Parent/Subsidiary Relationship

In the Supreme Court ruling on the Copperweld Case, the Court ruled that a subsidiary and its parent are "in reality, one unit". [13]

For the ACP, Dominion Transmission, Inc. (DTI), a subsidiary of Dominion Resources, is both the lead developer and operator of the pipeline. The organization with the largest ownership share is Dominion Atlantic Coast Pipeline, LLC, also a subsidiary of Dominion Resources. A customer for the gas, another Dominion subsidiary, Virginia Power Services Energy, will sell the gas to yet another subsidiary of Dominion Resources, Dominion Virginia Power (DVP). A similar relationship exists between the other major owner, Duke Energy, as the pipeline owner selling gas to its electric utility subsidiaries and to its newly acquired subsidiary, Piedmont Natural Gas, another owner of the ACP. The Supreme Court tells us to regard these affiliated companies as "one unit". This is not an indication of a free market choosing the best option for transporting the gas. If free to choose, what might an unfettered subsidiary select?

In the case of Dominion Virginia Power, they have established a 20-year Long-Term Service Agreement with Transco to build a pipeline, completed in September 2015, using the low-cost, underutilized capacity of the Transco corridor to serve two new power plants in Southside Virginia.

Electric Utility Customers Subsidize the ACP

It is understandable that the utility holding company owners of the ACP want to make the most of their existing assets. Using Dominion Transmission's extensive gathering pipelines and natural gas storage facilities in the western Marcellus makes business sense as does use of their own pipeline rather than someone else's. However, according to the Natural Gas Act, to receive

[13] Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 104 S.Ct. 2731 (1984). p4, http://www.felj.org/sites/default/files/elj/Energy%20Journals/Vol14_No2_1993_Expanding%20_FERC_Jurisdiction.pdf

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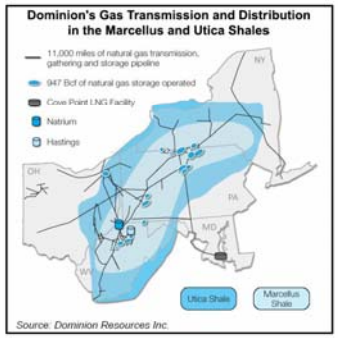
a certificate the project must fulfill the public's convenience and necessity, not the pipeline developer's.



In order for the owners of the ACP to receive the benefits of locating a pipeline in their preferred supply zone, the ratepayers of their captive electric utility subsidiaries must subsidize the higher cost of the ACP compared to their lower-cost existing options for gas supply.

The Commission disqualifies projects that are "subsidized by existing customers"[14] The specific policy applies only to existing pipeline customers. As a new pipeline, the ACP has no existing customers. But the captive utility shippers of the ACP have existing customers and the Commission should be sensitive to the idea that customers, in general, should not subsidize a project solely for the benefit of its developers.

It is well known in the industry that it is less expensive to transport natural gas using existing pipelines compared to new pipelines. The saving occurs because the cost of existing pipelines has been mostly paid for by previous users. New pipelines are far more expensive since the full construction cost plus a rate of return must be recovered from shippers over the first 40 years or

[14] Order Clarifying Statement of Policy, 90 FERC ¶ 61, 128 (2000); Certification of New Interstate Natural Gas Pipeline Facilities, Docket No. PL99-3-001, Issued February 9, 2000

CO117-2 (cont'd)

so of pipeline operation. Dominion has elected to connect its two newest natural gas-fired plants to the Transco corridor. The Brunswick plant began commercial operation in June 2016. The Greensville facility is expected to be available in late 2018. The Virginia State Corporation Commission (SCC) has approved the Transco connection for the 40+ years of operation of these two new power plants.

We have an excellent opportunity to compare the cost to Dominion customers of being forced to use the ACP compared to using existing pipelines. The new Dominion power plants will be served by the main Transco corridor via 98 miles of 24" pipeline, all but 7 miles of which is built on existing right-of-way. This new lateral was completed in September 2015. An additional 4 miles of pipeline will provide gas to the Greensville plant when that power plant is constructed. By connecting to the Transco mainline, the power plants can access natural gas supplies from the Gulf Coast production areas as well as the intended source of supply in the Marcellus.

Although Dominion committed to a 20-year Long-Term Supply Agreement with Transco to supply 250,000 Dekatherms per day to each power plant, they intend to connect these same plants to the ACP. Dominion has recently agreed to a negotiated rate with Transco which is not part of the public record, but we can use the rate identified in the application for a Certificate of Public Convenience and Necessity for the Transco Southside Expansion Project II for this example.[15] This rate combines the costs of service to the Brunswick and Greensville plants to create a single tariff for both plants.

The expected tariff for the Atlantic Coast Pipeline is identified in Dominion's amendment to its application filed March 11, 2016.[16] For a fair comparison, even though both pipelines might

[15] Application for Certificate of Public Convenience and Necessity, Virginia Southside Expansion Project II, Filed March 23, 2015, Exhibit P

[16] Amendment to Application for a Certificate of Public Convenience and Necessity and Blanket Certificates, Atlantic Coast Pipeline, Docket No. CP15-554-001, Volume I Public, March 11, 2016, Exhibit P

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CO117-2 (cont'd)

ultimately have lower negotiated rates for both pipelines, we identify only the published rates for the ACP and Transco.

The rate of return used for the ACP assumes a debt structure of 50% equity and 50% debt. The FERC authorized rate of return on equity for the ACP is 14%. The proposed debt rate is 6.8%.

Cost of Natural Gas Transportation Services to the Brunswick and Greensville Plants

Item	Transco	ACP
Total Rate Base	$ 0.461 billion	$ 4.986 billion
Pre-tax Rate of Return	15.34%	15.00%
Depreciation Rate	2.61%	2.50%
Daily Contract Demand	500,000 Dekatherms/day	500,000 Dth/d
Daily Reservation (Recourse) Rate	$ 0.52785 per Dekatherm	$ 1.7249 per Dth
Total Annual Transportation Cost	$ 96.3 million	$ 314.8 million

This yields a higher cost to ratepayers of $218.5 million in the first year to transport gas via the Atlantic Coast Pipeline compared to using existing pipelines. This extra cost can be automatically passed through to customers without their consent as part of the fuel charge on utility bills. The extra cost paid to the ACP is not paid to other providers of the same service; therefore it is a subsidy by existing customers of the captive Dominion utility to its affiliate, the largest owner of the ACP.

This is the only opportunity to make a direct comparison between the costs of transport service using the ACP compared to existing pipelines. However, connecting new power plants in Virginia and North Carolina to existing pipelines rather than the ACP will require fewer miles of new pipeline to be constructed. Since the transport rate is correlated to the expense of new pipeline required, the ultimate cost of electricity to customers will be less using existing

CO117-2 (cont'd)

pipelines compared to using the Atlantic Coast Pipeline. The transportation cost for using the Atlantic Coast Pipeline is almost equal to the current price of natural gas. What if you had to pay nearly $2 per gallon to use the pump every time you bought gasoline? As a customer, would you be happy about that? The primary purpose of the pipeline is to provide natural gas to new power plants. It is difficult to believe that the utility customers of these holding companies would agree that there is a market need for a pipeline that will increase their bills when other lower cost options are readily available.

Dominion has argued that it might be worth paying more for the ACP in order to access a lower cost source of natural gas. On its own, the ACP can access supply only from its western Marcellus Supply Header. Existing pipelines such as Transco and Columbia Gas can access supplies from multiple locations in both the Marcellus and the Gulf Coast supply zones. The ACP can access these other supply zones only by connecting to existing pipelines.

The ACP touted $377 million dollars of annual energy cost savings to customers as a result of the ACP accessing their western Marcellus source.[17] Unfortunately, they used a misleading comparison in order to support their argument. In public pronouncements and filings with the Commission, the ACP has always compared the cost of gas at the Dominion South Hub to the national price at Henry Hub in Louisiana (in 2014 when the differential was the highest). Because of the oversupply of natural gas in the Marcellus, the price at Dominion South has been lower. But many of the supply hubs in the Marcellus are also selling below the Henry Hub price.

The source of natural gas supplied by the Transco pipeline to Dominion's new power plants is taken from northeastern Pennsylvania. It is by far the most productive region in the Marcellus. Just three counties in this area supply 50% of all of the gas produced in the Marcellus.[18] The Leidy Hub is an example of the pricing in this region. Pricing for June 24, 2016, shows a price

[17] The Economic Impacts of the Atlantic Coast Pipeline, ICF International, February 9, 2015
[18] Marcellus Production Outlook, David Hughes April 28, 2015, http://www.postcarbon.org/marcellus-production-outlook/, http://www.postcarbon.org/publications/drillingdeeper/

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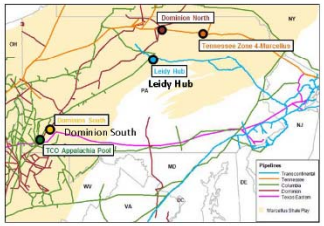
CO117-2 (cont'd)

of $1.90 for Dominion South representing the western Marcellus/Utica Zone.[19] On this same date, hubs in the highest productivity area in the northern Marcellus were showing lower prices. A price of $1.40 /mcf at Leidy was available on the connector pipeline to the Transco transmission system.[20] Obviously, gas prices are a moving target, but if the current price differential ($0.50/mcf) existed for an entire year, Dominion's electric ratepayers would pay an additional $91 million for natural gas as a result of Dominion trying to "save" them money by building their own pipeline.



No cost advantage will accrue to the primary users of the ACP, natural gas power plants. On the contrary, for just the two power plants used in this example, existing electric customers will pay nearly $310 million more a year if they are forced to utilize the ACP rather than existing pipelines. Ratepayers will pay hundreds of millions more each time a power plant is connected to the ACP rather than lower cost existing pipelines. The advantage exists purely for the benefit of the developers of the pipeline. In the first year, the ACP will earn nearly $135 million in income after taxes.

The ultimate customers, the utility ratepayers of Virginia and North Carolina, if given a choice, would not elect to pay a premium for service they can obtain for a lower price by other means. Once this unwilling subsidy is removed, the project, which exists solely for the financial gain of

[19] Natural Gas Intel, accessed June 24, 2016, natural gasintel.com http://www.naturalgasintel.com/data/data_products/daily?region_id=northeast&location_id=NEALEIDY
[20] Ibid.

CO117-2 (cont'd)

the developers, would no longer have a market. Thus, issuance of a Certificate of Public Convenience and Necessity for the ACP would not be justified.

Who speaks for the ratepayers? The state utility commissions believe their ability to protect ratepayer interests is superseded by the Commission's federal authority. State attorneys general and other consumer advocates also do not have the influence they normally exert in state proceedings. The Commission is the only authority that can protect ratepayer interests. Developers propose projects that make sense for them. That is understandable. It is the Commission's duty to determine if the project also serves the public's interest. The Commissioners are the only ones to whom the public can voice their concerns. Are you listening?

1.2.1 Federal Energy Regulatory Commission

The Commission claims that the DEIS "was prepared in compliance with the requirements of NEPA." We do not believe that NEPA requirements were met because no proof of actual market need for the project has been provided, other than precedence agreements executed with affiliates of the owners of the pipeline (which even the Commission's guidelines deem to be an inadequate proof of need). This issue, along with the non-NEPA conforming methods used to rule out alternatives to the proposed project, was discussed in greater detail in the General Comments at the beginning of this document.

Commission Policies Distort Decision-Making about Natural Gas Infrastructure

According to the Commission, "Sending the wrong price signals to the market can lead to inefficient investment and contracting decisions which can cause pipelines to build capacity for which there is not a demonstrated market need. Such overbuilding, in turn, can exacerbate adverse environmental impacts, distort competition between pipelines for new customers, and financially penalize existing customers of expanding pipelines and customers of the pipelines affected by the expansion."[21]

[21] Order Clarifying Statement of Policy, 90 FERC ¶ 61, 128 (2000); Certification of New Interstate Natural Gas Pipeline Facilities, Docket No. PL99-3-001, Issued February 9, 2000, p4

CO117-2 (cont'd)

Rates of return for pipelines are much higher than the returns the Commission authorizes for interstate electric transmission lines. On November 12, 2013, a complaint was filed with the Commission alleging that the current base ROE for the Midcontinent Independent System Operator, Inc. (MISO) was unjust and unreasonable. The approved ROE for MISO at that time was 12.38 percent. The Commission's Presiding Administrative Law Judge determined that the ROE should be "equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties."[22] The Presiding Judge continued, stating that the return "should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties."[23] That is, the return should be "sufficient to assure confidence in the financial integrity of the enterprise so as to maintain its credit and to attract capital."[24]

In Opinion No. 551, issued September 28, 2016, the Federal Energy Regulatory Commission (FERC) determined that a ROE that "authorized a utility to collect more than is necessary to satisfy the requirements of *Hope* and *Bluefield* would exploit consumers and, therefore, would be unjust and unreasonable." As a result, the Commission reduced MISO's ROE to 10.32 percent.[25] The Presiding Judge explained that the 10.32 percent base ROE represents the midpoint of the upper half of the zone of reasonableness (upper midpoint) of 7.23 percent to 11.35 percent.[26]

In Order 531-A, the Commission determined that gross domestic product (GDP) was the appropriate rate to use in determining the return for the New England Transmission Owners (NETO), the same rate that is supposed to be used in ROE cases for gas pipelines.[27] The Commission set the base ROE rate for NETO at 10.57 percent, assuming that "4.39% is the

[22] Bluefield, 262 U.S. at 693
[23] Ibid.
[24] Hope, 320 U.S. at 603
[25] 156 FERC ¶ 61,234, UNITED STATES OF AMERICA, FEDERAL ENERGY REGULATORY COMMISSION, Docket No. EL14-12-002, September 28, 2016
[26] Initial Decision, 153 FERC ¶ 63,027 at P 110
[27] Breaking down FERC's recent, and pending, ROE decisions, Robert Walton, Utility Dive, November 17, 2014, http://www.utilitydive.com/news/breaking-down-fercs-recent-and-pending-roe-decisions/334107/

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CO117-2 (cont'd)

appropriate projection of long-term GDP growth." FERC also required NETO to make refunds to customers, plus interest.

The Virginia State Corporation Commission (SCC) approved the ROE for Dominion's Greensville County Power Station at 9.6 percent, rather than the 10.5 percent requested by Dominion Virginia Power, when the SCC authorized the construction of the project on March 29, 2016.[28] The Commission found this rate to be "fair and reasonable to the Company" in that it "permits the attraction of capital on reasonable terms, fairly compensates investors for the risks assumed, enables the Company to maintain its financial integrity, and satisfies all applicable statutory and constitutional standards."[29]

Moody's reported that the North Carolina Utility Commission authorized a ROE of 10.2 percent for Duke Progress in May 2013 and the same ROE of 10.2 percent was awarded to Duke Carolinas in July 2013.[30]

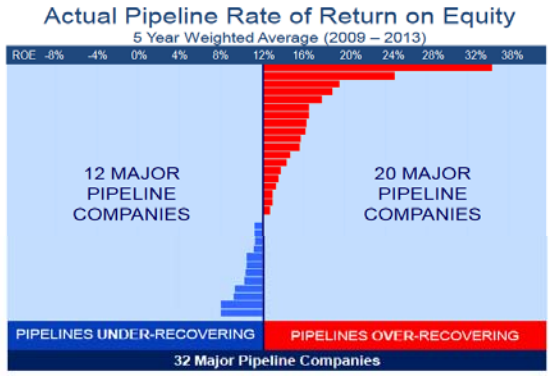
Because the revenues from electricity generation are stabilizing, utility holding companies are seeking new ways of gaining more revenues. The Commission awards up to 50% higher returns for natural gas pipelines compared to the returns deemed to be "fair and reasonable" by other regulators (including the Commission's own rulings) for other similar utility projects such as power plants and transmission lines. The exorbitantly high returns in an era of low single digit interest rates distort investment decisions. A dozen utility holding companies have entered the pipeline building business in search of higher revenues. No justification for these high rates has been provided in any of the Commission's previously issued certificates. The Commission must provide such a justification on the record, or better yet, lower the returns to be in line with other similar types of projects.

[28] Final Order, Virginia State Corporation Commission, Case No. PUE-2015-00075, March 29, 2016
[29] Ibid.
[30] "Moody's upgrades Duke Energy and five subsidiaries; outlooks stable", Moody's Global Credit Research, January 31, 2014, https://www.moodys.com/research/Moodys-upgrades-Duke-Energy-and-five-subsidiaries-outlooks-stable--PR_291348

CO117-2 (cont'd)

Virginia Utility Commission (SCC) Power Plant Return	9.6 %
North Carolina Utility Commission Overall Utility Return	10.2 %
FERC Interstate Transmission Lines	10.3 %
FERC ACP Return on Equity	14.0 %
FERC ACP Overall Project Return	15.0 %

The Commission's lax oversight allows pipeline companies to receive returns far above their authorized returns. The Natural Gas Supply Association (NGSA) has asked that the Commission requires natural gas pipeline companies to pay refunds when a pipeline has been found to be charging rates that are too high. To support their request, the NGSA studied 32 pipelines and found that over a five-year period, 20 pipelines earned above 12% ROE and nine pipelines earned above 16%. These excessive earnings cost customers $5 billion over that five-year period.



Source: NGSA Pipeline Cost Recovery Report 2009-2013[31]

[31] "Excessive Pipeline Rates Cost Customers Billions of Dollars", NGSA Pipeline Cost Recovery Report 2009-2013, summary, http://www.ngsa.org/download/issues/Section%205%20Reform%201-pager_final%2008312015.pdf

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Commission Policies Cause Overbuilding Pipeline Capacity

In its 1999 Policy Statement the Commission said, "In considering the impact of new construction projects on existing pipelines, the Commission's goal is to appropriately consider the enhancement of competitive transportation alternatives, the possibility of overbuilding, the avoidance of unnecessary disruption of the environment, and the unneeded exercise of eminent domain."[32]

The great shale gas boom of the last 10 years is the result of a financial bubble. Wall Street money left the mortgage securities market and was invested with oil and gas developers. Drillers put to use the technologies of fracking and directional drilling that had recently become economic because of record high prices for oil and gas. Plentiful cheap money caused a rush of land leasing and drilling to tap the lucrative shale formations. These non-conventional wells declined in production far faster than the conventional wells the industry was accustomed to developing. Gas producers constantly drilled new wells to replace declining production from legacy wells and to pay the interest on their loans. They could not cut back production or they would become bankrupt. Supply increased far faster than demand. The initial lack of sufficient takeaway pipelines stranded the gas in the Marcellus and it began to sell at a significant discount to the national price.

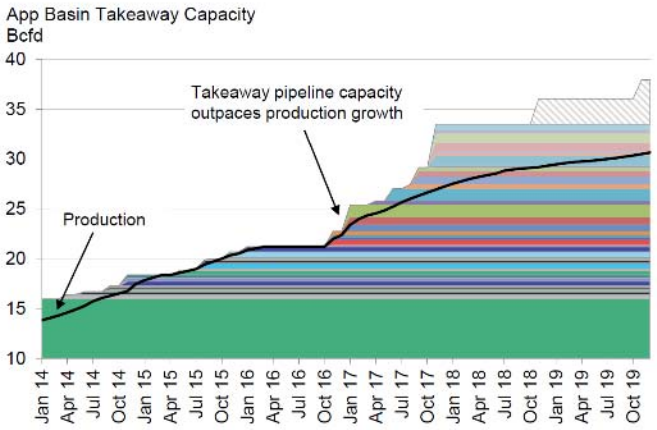
Wall Street investors sought ways to recover their failing investments by increasing gas prices. Strategies included policies to encourage building more gas-fired power plants (the Clean Power Plan?) and to build as many pipelines as possible to make money and get the gas to market. Despite numerous new pipelines built between 2007 and 2013, the Commission's high rate of return prompted applications for more pipelines from the Marcellus. Traditional pipeline developers pushed back against the utility holding companies infringing on their turf. All of the players wanted their own pipeline. The numerous applications to build more new pipelines caused concern among industry observers about the overbuilding of natural gas infrastructure. Meanwhile, the Commission approved each application before it.

[32] United States of America 88 FERC ¶ 61,227, Federal Energy Regulatory, Issued September 15, 1999, p2

CO117-2 (cont'd)

Bloomberg

Bloomberg New Energy Finance tracks project details of all Appalachian Basin pipeline projects, including FERC filings, approval progress, in-service dates, company presentations and other information related to the development of natural gas pipelines in this important production area. The Bloomberg pipeline database reveals that pipeline capacity will begin to outstrip production in the Appalachian Basin in early 2017 leading to an excess of pipeline capacity of about 7 billion cubic feet per day (Bcf/d) by the end of 2019.[33]



Source: Bloomberg New Energy Finance

RBN Energy

RBN Energy LLC President Rusty Braziel also believes that pipeline capacity could become overbuilt. He noted that too many pipelines are planned to relieve the existing capacity constraints in the northeast production zone. "Is it possible that we could build too much takeaway capacity out of the Marcellus and Utica?" "It's certainly happened in about every

[33] US Gas Insight: Midstream Madness, Joanna Wu, Bloomberg New Energy Finance, March 8, 2016

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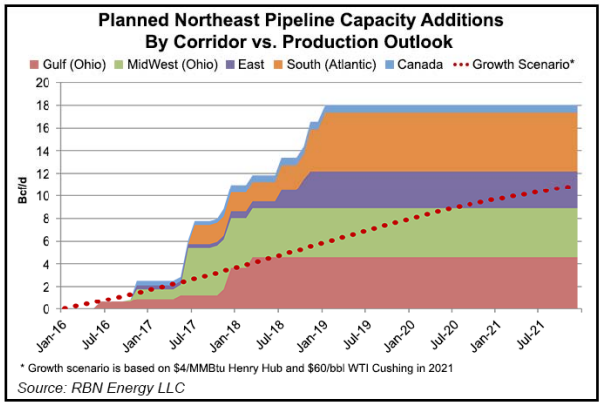
CO117-2 (cont'd)

other segment of the energy business over the last few years," Braziel said.[34] He continued, "If you're looking at this from the standpoint of a company committing or considering commitments to any pipelines, firm pipeline capacity, 20-year deals, you just might want to think long and hard about whether [an overbuild] could happen."

Because of bankruptcies and lower rig counts, production is down in the Marcellus/Utica region. Many wells have been drilled but not connected to pipelines, waiting for an increase in natural gas prices. Drillers might not return to many of the areas. Only the most productive counties are likely to see an increase in activity once the price improves, he said. His comparison of planned pipeline capacity additions with estimated gas production is shown below.



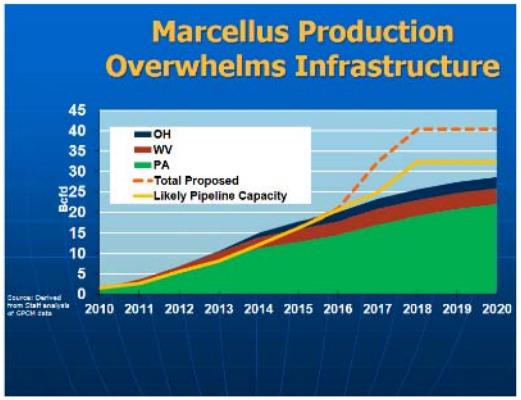
FERC Staff

Concern about overbuilding pipelines is not limited to industry observers. In a presentation to Commissioners on March 19, 2015, FERC staff identified a more than 40% potential overbuild

[34] Marcellus/Utica On Pace for Pipeline Overbuild, Says Braziel, Jeremiah Shelor, NGI's Daily Gas Price Index, June, 8 2016

CO117-2 (cont'd)

in the capacity of proposed takeaway pipelines compared to the output of the Marcellus.[35] This is indicated by the dashed line in the chart created by FERC staff shown below. The title speaks to the insufficient infrastructure in 2014. In 2017, the title of the slide would be "Pipeline Capacity Overwhelms Marcellus Output."



Industry Insiders

Dominion is aware of likely excess capacity too. In January 2016, several industry insiders commented on this fact at the Seventh Annual Marcellus-Utica Midstream Conference & Exhibition (MUM)[36]. At the conference, Dominion Transmission Senior Vice President, Don Raikes, told his audience that from 2015 to 2018, 21 billion cubic feet per day (Bcf/d) of new pipeline capacity was planned to take gas away from this production zone.

Elie G. Atme, Vice President, Marketing and Midstream Operations, for independent producer Range Resources, told the MUM attendees, "We believe the Appalachian Basin's takeaway

[35] 2014 State of the Markets, Item No. A-3, March 19, 2015, presented by the Office of Enforcement's Division of Energy Market Oversight to the Commissioners, Slide 8, http://www.ferc.gov/CalendarFiles/20150319162231-A-3.pdf

[36] Marcellus-Utica Could Soon be "Overpiped", February 1, 2016, Kallanish Energy, http://www.kallanishenergy.com/2016/02/01/marcellus-utica-could-soon-be-overpiped/

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CO117-2 (cont'd)

capacity will be largely overbuilt by the 2016-2017 timeframe," noting that production growth in Northeast Pennsylvania, the most productive region in the Marcellus, had stopped, and growth in Southwest Pennsylvania, where both Marcellus and Utica drilling is underway, "is slowing". This information is not coming from pipeline organizations that question the need for more development, but from industry insiders.

This seems to be the nature of the business. Every developer thinks that their proposal has merit. In his second quarter 2015 earnings report to industry analysts, Chairman and Chief Executive Officer, Kelcy L. Warren, of Energy Transfer Partners, a pipeline developer, said, "The pipeline business will overbuild until the end of time. I mean that's what competitive people do. We've done it. Others have done it around us." [37]

Department of Energy Studies

The Department of Energy (DOE) agrees that we have enough pipeline capacity in Virginia and North Carolina after undertaking extensive studies of the need for more pipelines to supply the new gas-fired power plants that are replacing coal units in the electric power sector. One study concluded that increased demand for natural gas to generate electricity, "does not lead to larger increases in pipeline capacity because . . . available existing pipeline capacity is projected to be used before expanding existing pipelines or building new capacity. Given the cost of building new pipelines, finding alternative routes that utilize available existing pipeline capacity is often less costly than expanding pipeline capacity." [38]

This is supported by information reported by the DOE's Quadrennial Energy Review Analysis. [39] The DOE notes that "In cases where new production must travel via interstate pipelines to reach

[37] Second quarter 2015 earnings call to industry analysts, Kelcy L. Warren - Chairman & Chief Executive Officer Energy Transfer Partners, http://seekingalpha.com/article/3409276-energy-transfer-partners-lp-etp-kelcy-l-warren-on-q2-2015-results-earnings-call-transcript?page=10

[38] Natural Gas Infrastructure Implications of Increased Demand from the Electric Power Sector, U.S. Department of Energy, February 2015, http://energy.gov/sites/prod/files/2015/02/f19/DOE%20Report%20Natural%20Gas%20Infrastructure%20V_02-02.pdf

[39] Quadrennial Energy Review Analysis: Department of Energy, Office of Energy Policy and Systems Analysis. "Natural Gas Infrastructure Implications of Increased Demand from the Electric Sector." February 2015. Appendix B: Natural Gas, http://energy.gov/sites/prod/files/2015/06/f22/Appendix%20B-%20Natural%20Gas_1.pdf

CO117-2 (cont'd)

demand centers, the most inexpensive way to transport it is by using available existing infrastructure." This is aided by re-orienting the existing natural gas transmission pipeline network that "will require reversing flows on pipelines to flow Marcellus and Utica gas to the southeastern Atlantic region".

The Department of Energy study says that "The existing natural gas pipeline network possesses latent capacity, reducing the need to build new pipelines. This is the case even in high natural gas demand projections that indicate only moderate incremental new pipeline infrastructure would be needed." The government's projections show that "only about 5 percent of additional capacity will be needed to serve the Southeast, especially to create more deliverability to Georgia." The DOE goes on to say, "the pipeline network in the Southeast is already designed to handle large natural gas flows to distant parts of the country and needs little expansion to handle new flows within a more constricted region."[40]

The DOE confirms other observers' concerns about overbuilding by stating, "In the mid to long-term, incremental outbound capacity from Pennsylvania and Ohio is expected to exceed Marcellus production (i.e., pipeline constraints in Marcellus are a short-term phenomenon), assuming expected pipeline expansions go in service on time."[41]

We ask that the Commission rely on the in-depth studies of the federal agency charged with being the government's expert in these matters. The need for more pipeline capacity cannot be justified by using only precedence agreements with captive affiliates.

Choosing to build an unnecessary new pipeline when existing pipelines can provide the same or greater capacity adversely affects the interests of those existing pipelines, costs electric utility

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[40] Ibid.
[41] Ibid.

CO117-2 (cont'd) ratepayers many millions more per year, severely disrupts sensitive environmental areas, and infringes on personal property rights without a valid reason.

CO117-3 **3.0 Alternatives**

The DEIS says that the evaluation of alternatives is "based on project-specific information provided by Atlantic and DTI, affected landowners, and other concerned parties . . ." The hand of the ACP and Dominion is apparent in the DEIS material but there is no evidence that input from intervenors and other concerned parties has been addressed. On numerous occasions, we have submitted questions to the applicants and filed motions and comments with the Commission in order to see the rigorous and objective information required by NEPA that proves the need for the project. The applicant responded by basically saying, "of course it is needed, we have precedent agreements", but no data to justify the market demand for the project has been provided. The last hope was that the Commission would conform to NEPA and provide the required information in the DEIS since this is the last opportunity for the public to review and comment on the information that will be the foundation of the Commission's decision about whether to issue a certificate for the project.

If the project has merit, why is there no information in the application or the DEIS that proves it is needed? The only justification given is that affiliates of the owners of the pipeline have signed long-term agreements to reserve pipeline capacity. This does not prove that this project is the best and least-expensive means to provide an adequate supply of natural gas to the region. It only proves that the parent companies can coerce their subsidiaries to obey even if they must harm the interests of their utility customers (gas and electric) by charging them millions more to transport the natural gas.

It is appropriate that alternatives to the project be technically and economically feasible and we should compare the economic, environmental, and other features to the proposed action. However, it is the third option that the DEIS evaluation of alternatives fails to conform to NEPA.

CO117-3 See the responses to comments CO55-63, CO55-6, and CO66-2.

CO117-3 (cont'd)

The DEIS says that the alternatives to the project must provide a supply of natural gas to the project's delivery points in a similar timeframe as the proposed project. The Commission then redefines the purpose of the project in order to dismiss the various alternatives. That is not an appropriate method to dismiss options. Specific examples will be given as each alternative is reviewed.

3.1 No-Action Alternative

The Commission entirely misses the point in their response to this section. The DEIS states, "if the no-action alternative is selected, the stated purpose of projects would not be met." This conclusion is based on an incorrect definition of the project's purpose. To summarize, Section 1.1 of the DEIS defines the project purpose as:

- have an adequate supply of natural gas to support the proposed new gas-fired electric generation in Virginia and North Carolina
- have an adequate supply of natural gas to support the growth in traditional uses of natural gas in Virginia and North Carolina (delivered by LDCs)
- to increase the reliability and security of natural gas supplies in Virginia and North Carolina (presumably by having access to gas supplies from more than one location)
- to provide access to a large volume, low-cost supply hub

In Section 3.0, the DEIS incorrectly states the project purpose (in just the way the project developer would) as being "to transport price-competitive natural gas from West Virginia to electric generation, distribution, and end-use markets in West Virginia, Virginia, and North Carolina." The entire reason to have a discussion of alternatives is to determine if the purpose as stated in Section 1.1 (the items summarized above) can be accomplished by some means other than the proposed project. If such alternatives exist, we can compare their costs and benefits.

Section 3.1 exists to determine if the purpose of the project can be accomplished with a non-pipeline alternative. The other pipeline options are considered in Section 3.2 System

CO117-3 (cont'd)

Alternatives. By improperly narrowing the definition of the project purpose, the Commission fails to perform its duty under NEPA by saying:

> The Commission also received numerous comments suggesting that the electricity and power generated from natural gas could be generated and supplied by renewable energy sources such as solar and wind power and that the use of these energy sources as well as gains realized from increased energy efficiency and conservation should be considered as alternatives to the projects.
>
> The generation of electricity from renewable energy sources is a reasonable alternative for a review of power generating facilities. Authorizations related to how the project area would meet demands for electricity are not part of the application before the Commission and their consideration is outside the scope of this EIS. Therefore, because the purpose of ACP and SHP is to transport natural gas, and the generation of electricity from renewable energy sources or the gains realized from increased energy efficiency and conservation are not transportation alternatives, they cannot function as a substitute for ACP and SHP and are not considered or evaluated further in this analysis.

Issues such as this are not "outside the scope of this EIS". NEPA specifically requires lead federal agencies to "include reasonable alternatives, not within the jurisdiction of the lead agency".

The purpose of the ACP might be "to transport natural gas", but that is not the purpose of the project. As stated in Section 1.1, the purpose of the project is to assure an adequate supply of natural gas in Virginia and North Carolina to supply possible new gas-fired electricity generation and to meet increases in the traditional uses of natural gas in the region.

The DEIS refers to past growth in natural gas consumption in the region but includes only vague references to future growth in demand. No specific footnotes or a bibliography were included in the DEIS so it is difficult to determine which EIA reports were being referenced. We have provided specific references that show energy use is no longer coupled to increases in population or economic activity. EIA projections show natural gas use in the residential sector is declining. Commercial, industrial and use for electricity generation are expected to increase about 0.5% per year between now and 2040. If this occurs (the EIA is an excellent reporter of what has happened

CO117-3 (cont'd)

but a notoriously bad forecaster of what will happen) there are numerous ways to deal with it other than a new pipeline. That is what the Alternatives section is supposed to investigate.

Claims of Supply Constraints Disproved by Independent Studies

The DEIS also refers to "existing supply constraints in the proposed delivery areas" but no evidence is provided to support the statement. Curtailments associated with the Polar Vortex have been shown by numerous studies to be related to shortcomings in the human system (differences in the gas and electricity dispatch day and other factors) not, in nearly all cases, a lack of gas supply or pipeline capacity.[42]

The only rigorous evaluation of pipeline capacity and natural gas demand in the region was performed by Synapse Energy Economics, a highly regarded independent consultant.[43] Synapse examined forecasts for peak natural gas usage in the region from Local Distribution Companies (LDC's) and the demand increase attributed to the new gas-fired power plants proposed through 2030. For the first time, an analysis of the growth in natural gas demand was compared to the capacity of existing pipelines in the region to determine if existing pipelines could adequately supply the increase in demand from the new power plants and traditional uses of natural gas.

Researchers assessed the "peak hour" demand in the expected gas usage scenario and also evaluated a "high gas use" scenario that assumed less-than-expected use of renewable energy, and greater than anticipated coal-fired power plant retirements.

Synapse reviewed the capacity of major natural gas transmission pipelines in the region belonging to nine different companies. Natural gas storage facilities in the region added to the supply capacity.

[42] Analysis of Operational Events and Market Impacts During the January 2014 Cold Weather Events, PJM Interconnection, May 8, 2014

[43] Are the Atlantic Coast Pipeline and the Mountain Valley Pipeline Necessary?, Synapse Energy Economics, Inc., September 12, 2016, https://www.southernenvironment.org/uploads/words_docs/2016_09_12_Synapse_Report_-_Are_the_ACP_and_MVP_Necessary__FINAL.PDF

CO117-3 (cont'd)

Expected capacity additions from the reversal of flow in the Transco corridor bringing large supplies of natural gas from the Marcellus to Virginia and the Carolinas and extra capacity that would remain in the region from the 1.3 Bcf/d expansion of the Columbia Gas Pipeline were considered as part of the regional capacity.

Synapse concluded that the upgrades and reversal of flow in existing pipelines could provide a supply of natural gas to the region that was significantly in excess of even the highest-demand scenario. The study revealed that no new pipelines are needed to assure an ample supply of natural gas to Virginia and the Carolinas. No equivalent information has been provided by the applicant or in the DEIS to show that the situation is any different than what Synapse has concluded.

Other alternatives discussed in this section include those that might substantially alter the growth in demand for natural gas. The Commission should also pay attention to the so far unconsidered consequences of a rapid build-out of natural gas. The Commission cannot argue that it is not their business to consider developments that might render a pipeline far less beneficial to the public interest a decade or so into the forty years required to pay for it.

A 21st Century Energy System

An outline of a plan for Virginia's energy system has been developed that meets our needs for comfort and energy through 2040 without the need for any new gas-fired generation beyond what has already been approved. No new gas-fired power plants, no need for a new pipeline. A similar path would apply to North Carolina.

The plan includes a number of components. Low-cost energy efficiency, renewables, storage, and demand response are the primary alternatives to the construction of new natural gas power plants. Baseload requirements are met for the next 15 years with existing conventional generating units. This plan relies on available technology. It provides thousands of more long-

CO117-3 (cont'd)

term jobs and results in lower costs of energy to our families and businesses than the outcome resulting from more gas-fired power plants. Natural gas is an increasing-cost technology. Trends such as overbuilding pipeline capacity and increasing LNG exports will only accelerate the speed at which the cost of natural gas rises. The Commission might argue that this is just a plan, not a certainty. It should be remembered that the new power plants that are creating the need for a new pipeline are just a plan, not a certainty. These issues should be considered when determining the public convenience and necessity for a new pipeline.

The Commission has responded that these issues are not within their domain; that they cannot substitute for the ACP (based on what evidence?); and that they will not be considered further. The Commission has approved every application for a new pipeline that had precedence agreements for at least a portion of the project's capacity. No other evidence of market demand was required. No-Action or System Alternatives were not given the rigorous evaluation required by NEPA. The Commission believes it is responsible for developing natural gas infrastructure. This must be balanced with an objective evaluation of the public's interest. Otherwise, unintended consequences result. With such a one-sided view of what is needed, poor choices are made. When you only have a hammer, you treat everything like a nail.

<u>The Risk of Stranded Assets from Overzealous Natural Gas Development</u>

The appointment of new Commissioners and an even greater commitment to building new pipelines and LNG export facilities might not create the jobs and lower energy costs that are hoped for. The Commission encountered this in the 1990s and early 2000s with the rush to build new LNG import facilities. Money was spent and property was disrupted for a need that did not materialize as expected.

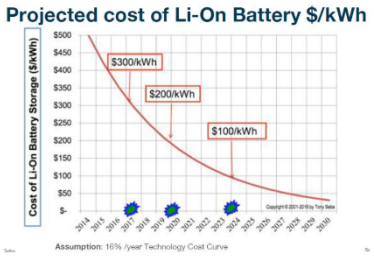
New conventional energy projects will not have the same economic benefits as they did in the 20th century. Our energy system and customer behaviors have changed. A consortium of top global companies (RE 100) has announced that their members will locate new facilities only in

CO117-3 (cont'd)

those areas that have affordable, easy access to supplies of renewable energy.[44] There are bountiful opportunities for energy efficiency projects (especially in commercial and government buildings) at a cost of 2-3 cents/kWh. Using less energy to produce more economic activity is the new sign of progress as opposed to the higher per capita energy use of the 20th century.[45]

This is a wrenching and disruptive change for the nation's utility industry that has been built on the economic model of "Build More – Earn More". Real world experience is shifting long-held habits of energy planners. They are beginning to consider shifting demand to meet supply rather than the traditional approach of adding supply to meet demand. New options are being considered when we add to supply.[46] In 2016, solar was 39% of all new capacity additions, natural gas accounted for 29%, and wind contributed 26% of new generation.[47]

New technologies such as solar, wind, and storage are on a decreasing technology learning curve that is expected to last for decades. Prices for renewables and battery storage are expected to decline by 50% every 4-5 years, similar to the curve for batteries, shown below:



[44] Walmart, Nike, Starbucks commit to 100% clean energy, Fortune, Katie Fehrenbacher, September 23, 2015, http://fortune.com/2015/09/23/fortune-500-clean-energy/

[45] Electricity Demand Failing to Provide Spark for Natural Gas, BTU Analytics, Tony Scott, December 6, 2016, https://btuanalytics.com/electricity-demand-natural-gas/

[46] Wind and Solar are Crushing Fossil Fuels, Bloomberg, Tom Randall, April 6, 2016, http://www.bloomberg.com/news/articles/2016-04-06/wind-and-solar-are-crushing-fossil-fuels

[47] U.S. Solar Market Grows 95% in 2016, Smashes Records, GreenTech Media, Mike Munsell, February 15, 2017

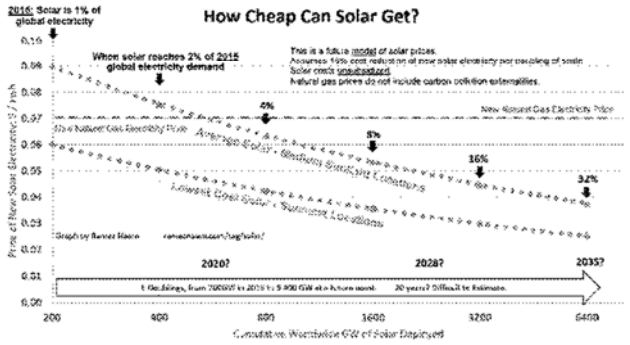
CO117-3 (cont'd)

This cost trend is in stark opposition to that of natural gas. The extraordinarily low cost of natural gas the past few years is not likely to be repeated. It was due to several factors:

- Cheap easy money from Wall Street created a stampede by drillers to extract natural gas from shale plays during the worldwide peak in natural gas prices
- The unconventional shale wells reached peak production and declined within a few years
- Drillers could not afford to cut back production to balance with demand or they would be bankrupt
- Supply continued to increase far faster than demand and prices fell to record low levels
- Drillers cut costs by:
    - Improving technology (20% of the cost reduction and likely to continue)
    - Paying drilling service companies less (40% - will only go up from here)
    - Drilling the sweet spots first (35% - new wells will be less productive)

Building 40 percent more pipeline capacity than the maximum output of the Marcellus and LNG exports speeding the decline of the most productive wells will increase natural gas prices. Forecasting future energy prices is always a risk, but the major long-term trends are in the direction of higher gas prices. We will have natural gas available, but it will be more expensive.

The increasing cost of energy from natural gas-fired plants will soon by undercut by the rapidly declining costs of renewables as shown below:



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CO117-3 (cont'd)

This is happening in California now. The abundant supplies of low-cost solar are keeping recently built gas-fired combined cycle plants from being dispatched often enough to cover their costs on an annual basis.[48] If a power plant is in the rate base, ratepayers must pay for it until the end of its economic life (36-40 years) regardless of whether the power plant provides any economic value to them. It has become a stranded asset.

In Ontario, they have replaced all of their coal plants with gas-fired power plants. With stable load growth and inroads being made by energy efficiency and renewables, the new combined cycle plants operate just 10% of the time. They need to run at a capacity factor of 60% to break even. The gas-fired peaking plants are dispatched 1% of the time on average. Ratepayers are paying a huge penalty for this error in judgment by their energy planners and regulators.[49]

Dominion projects that the cost of its natural gas supplies will increase from under $2, where it has been for the past several years, to $6-$8 in the next 10-15 years.[50] Fuel costs increasing 3-4 times will double the costs of energy from the new combined cycle plants (all recoverable in customers' utility bills via the fuel adjustment factor). What happens if some of the proposed new gas-fired power plants get built and are then undercut in price by new energy technologies so that they are used far less than was anticipated when they were approved? They will use less gas. That is clear. If that gas is delivered by the ACP the pipeline owners are guaranteed the income from the 20-year contracts signed by their sister companies. Who pays that bill? The ratepayers of course! In some cases, the Commission has allowed pipeline owners to increase rates in order to cover the costs of an underutilized pipeline. Again, the ratepayers will get stuck with the bill.

Bloomberg New Energy Finance expects that U.S. use of natural gas, coal, and oil will peak about 2025. Bloomberg analyses show that "even rock bottom prices won't be enough to derail

[48] California Merchant Generator, Lamenting Market Forces, Files for Bankruptcy, Power Magazine, Dec. 8, 2016
[49] Ontario Planning Outlook, IESO, September 2016
[50] Integrated Resource Plan, Dominion Virginia Power, Case No. PUE-2016-00049, April 29, 2016, p 73

CO117-3 (cont'd)

a rapid global transition toward renewable energy".[51] The cheap natural gas that has scuttled the U.S. coal industry does not look like it will become the "bridge fuel" on the road to renewables that energy executives have been promoting for years. Less load growth and declines in renewable prices will require just a small step to embrace a cleaner, lower cost energy future. No "bridge" will be needed according to the experts. Billions are projected to be invested in pipelines between 2015 and 2020. Just 5 to 10 years into their 100-year useful lives these projects could encounter a substantial decline in their usage. Any increase in the price of natural gas will increase the price of natural gas-generated electricity putting it at a further price disadvantage to renewables and accelerating the downward spiral of natural gas-fired power plant capacity factors.

"These utilities are taking a risk that these will be stranded assets that ultimately their shareholders will have to pay off," Jon B. Wellinghoff, a San Francisco attorney who served as chairman of the Federal Energy Regulatory Commission from 2009 to 2013, said by phone. "We will see regulators being more critical of these asset decisions as prices of renewables continue to go down."[52]

We must make strategic choices about our natural gas infrastructure. Many changes will occur in our energy system over the next forty years. The Commission cannot ignore the future effects on customers' bills caused by decisions about pipelines made today. The effects of new technology over the lifetime of a project and the risks of disruption of the use and payback for a project are an integral part of the consideration of public convenience and necessity. The Commission cannot avoid its duty to address No-Action alternatives just because they do not involve the construction of a new pipeline.

[51] The World Nears Peak Fossil Fuels for Electricity, Tom Randall, Bloomberg News, June 13, 2016, http://www.bloomberg.com/news/articles/2016-06-13/we-ve-almost-reached-peak-fossil-fuels-for-electricity

[52] "Utilities Buying Gas Pipelines Better Watch out for Batteries", Harry Weber and Tim Loh, Bloomberg News, November 11, 2015, http://www.bloomberg.com/news/articles/2015-11-11/utilities-buying-gas-pipelines-better-watch-out-for-batteries

CO117-3 (cont'd)

Natural Gas and Climate Change

The DEIS claims that if "the no-action alternative were adopted, then air emissions could be increased if other sources of energy were used." Actually, the Commission has this one backward. Consideration of No-Action alternatives is especially important because methane leaks along the natural gas supply chain and emissions from gas-fired power plants will exceed U.S. climate goals all by themselves.[53] If there was no contribution from coal or oil, the planned expansion of natural gas production and use would make meeting U.S. climate goals impossible, even if we assume a 45 percent reduction in methane leakage. The preferred No-Action alternative of an energy system that uses zero emission choices such as energy efficiency, renewables, storage and other modern energy technologies instead of adding more gas-fired power plants is the only option that effectively deals with this issue.

The Defense Department is undertaking many measures to deal with the consequences of climate change. This is no small issue in Virginia. The largest naval base in the world is in southeast Virginia along with numerous other federal installations. The federal presence in this region is vital to our state's economy and to our national defense. Studies predict that sea level could rise by 6-8 feet in this area by the end of the century.[54] The Navy estimates it would take an investment of at least $460 million to replace piers already affected by sea level rise and millions more to protect other important facilities.[55] The City of Norfolk may require a total investment of $1 billion in the coming decades.

The unnecessary development of natural gas infrastructure might provide a short-term profit opportunity for some industry interests, but it has negative long-term consequences for Virginia. The CEQ directed the Commission to include an evaluation of greenhouse gasses in the consideration of new pipeline projects, but the directives were ignored. Such issues have important economic consequences in our region and should be factored into the consideration of the public convenience and necessity for this project.

[53] A Bridge Too Far: How Appalachian Basin Gas Pipeline Expansion will Undermine U.S. Climate Goals, OilChange International, July 2016
[54] The US Military on the Front Lines of Rising Seas, Union of Concerned Scientists, Fact Sheet, 2016
[55] Sea-Level Rise and its Impact on Virginia, World Resources Institute, Forbes Tompkins and Christina Deconcini

CO117-3 (cont'd)

In the summary of this section, the Commission rejects any No-Action alternatives that use options other than natural gas to meet the energy needs of the region, without any rigorous or objective evaluation as required by NEPA. The National Environmental Policy Act guidelines require that the lead federal agency "devote substantial treatment to each alternative . . . so that reviewers may evaluate their comparative merits."[56] The Commission notes that although "the no-action alternative would avoid the environmental impacts of the proposed projects", it "would likely result in the need for an alternate energy means to satisfy the demand for natural gas and energy in the project area" such as "renewable energy". Without actually devoting "substantial treatment" to the costs and benefits of this option the Commission concludes "the no-action alternative is not preferable to ACP and/or SHP and we do not recommend it." The Commission is failing in its NEPA duty and showing a predisposition to reject any option that is not a pipeline, especially a pipeline from West Virginia to Virginia and North Carolina.

3.2 System Alternatives

System alternatives make use of existing, modified, or other proposed facilities to meet the purposes of the project. They should provide at least 1.44 Bcf/d of capacity to the delivery points specified for the ACP. Alternatives must be technically and economically practical and offer significant environmental advantages over the proposed project.

The Commission asks that the alternatives also be available within a reasonably similar timeframe as that proposed for the ACP. The current commercial operation date for the ACP is late 2019. We do not understand the rush for this project. The first power plants requiring gas supply are not scheduled for operation until 2022. As noted, it is quite possible that these units could be delayed or abandoned because of declining load growth. The LDCs in North Carolina have substantial supplies available using the existing connection to Transco. We are concerned the ACP is taking risks with the residents, communities and the environment along the pipeline route by continuing construction during the winter months in environmentally sensitive areas with unstable soils. However, the existing pipelines that are considered superior to the ACP should be available within the same timeframe as the proposed project.

[56] Department of Energy, National Environmental Policy Act Guidelines, http://energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf

CO117-4

3.2.1 Existing Pipeline Systems

The Commission states that existing pipelines in the region "do not have the available capacity to transport the required volumes of natural gas to the delivery points proposed for ACP and SHP". This is another conclusion made without any evidence being provided in the DEIS. We have made several requests to the applicant and the Commission to provide the detailed information comparing the actual (not presumed) capacity of these existing pipelines to the requirements of the subscribers of the ACP. As previously noted, the only such analysis was performed by Synapse Energy Economics and their study concluded that sufficient capacity is present in existing systems to meet the requirements.[57] Without an equivalent accurate representation of the capacity and demand in our region in the DEIS, there is no foundation for the Commission to conclude that they do not consider "the use of existing pipeline systems as is, as feasible alternatives to the proposed projects."

CO117-5

3.2.2 Modifications to Existing Pipeline Systems

Existing pipelines in the project area do have the capacity necessary to meet the project's purpose and can be modified to supply ACP's subscribers at their designated points of delivery. A detailed description of the alternatives is provided below so that reviewers "may evaluate their comparative merits" with the proposed action, as required by NEPA.

3.3.3.1 Existing Transco Pipeline System

Adequate Capacity Exists to Supply ACP Subscribers

The 10,000-mile Transcontinental Pipeline, initially developed in the 1950's, runs from the Gulf Coast production zones in an 1800-mile corridor along the eastern seaboard to metropolitan demand centers in the northeast. Close to 10% of all U.S. natural gas is supplied via this pipeline.[58] Development of shale gas production in the Marcellus over the past 10 years has significantly altered the traditional movement of natural gas from south to north. As new

[57] Are the Atlantic Coast Pipeline and the Mountain Valley Pipeline Necessary?, Synapse Energy Economics, Inc., September 12, 2016, https://www.southernenvironment.org/uploads/words_docs/2016_09_12_Synapse_Report_-_Are_the_ACP_and_MVP_Necessary__FINAL.PDF

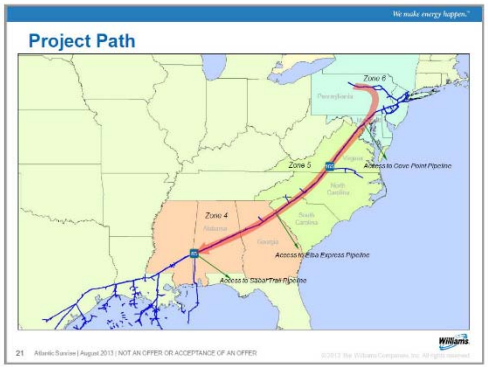
[58] WMB - Williams Companies Inc and Williams Partners LP Analyst Day, THOMSON REUTERS STREETEVENTS, MAY 13, 2015, http://edge.media-server.com/m/p/vzqm48js

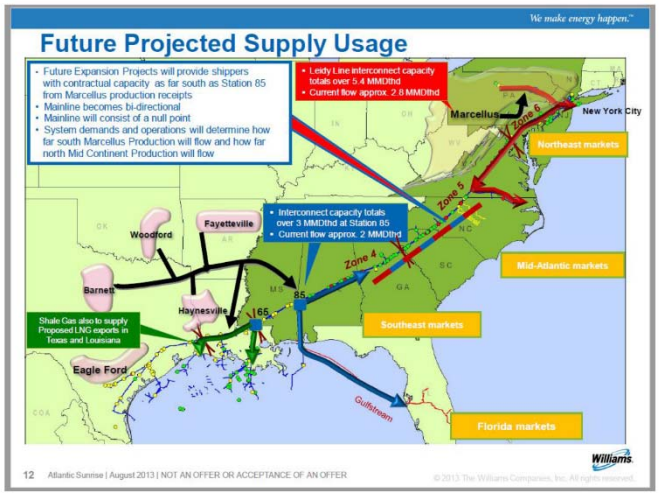
CO117-4 See the response to comment CO55-6.

CO117-5 Comment noted.

CO117-5 (cont'd)

takeaway pipelines are built to bring the production of the Marcellus into the national gas transmission system, much of the demand in the northeast can be served directly from the Marcellus. This frees up several of the pipelines in the Transco corridor to move natural gas from the Marcellus to markets in the Southeast as far as Alabama, as shown below.





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Z-2402

CO117-5 (cont'd)

The takeaway capacity that has been added in the Marcellus (5.446 million Dth/d currently with more to come) has been a major part of the expansion in overall Transco capacity from 10.8 Bcf/d in 2014 to 17.7 Bcf/d in 2017.[59] Supplying northeastern markets directly from the Marcellus frees up an equivalent amount of capacity in the four major gas transmission pipelines in the Transco corridor to move gas southbound for markets in the Southeast. This provides nearly four times the capacity offered by the ACP.

This is precisely the scheme referred to by the Department of Energy when they explained how existing pipelines can be utilized to serve higher demand in Virginia and North Carolina. "Flow reversal [of existing pipelines] is also projected southward out of the Marcellus to serve markets in the Southeast. Pipelines that currently bring natural gas from the Gulf region to the north are projected to reverse flow so that Marcellus production can serve the Virginia and Carolinas markets"[60]

Another Department of Energy study showed that "The existing natural gas pipeline network possesses latent capacity, reducing the need to build new pipelines. This is the case even in high natural gas demand projections that indicate only moderate incremental new pipeline infrastructure would be needed." The government's projections show that "only about 5 percent of additional capacity will be needed to serve the Southeast, especially to create more deliverability to Georgia." The DOE goes on to say, "the pipeline network in the Southeast is already designed to handle large natural gas flows to distant parts of the country and needs little expansion to handle new flows within a more constricted region."[61]

[59] Ibid.
[60] The U.S. Department of Energy, "Natural Gas Infrastructure Implications of Increased Demand from the Electric Power Sector", February 2015, http://energy.gov/sites/prod/files/2015/02/f19/DOE%20Report%20Natural%20Gas%20Infrastructure%20V_02-02.pdf
[61] Quadrennial Energy Review Analysis: Department of Energy, Office of Energy Policy and Systems Analysis. "Natural Gas Infrastructure Implications of Increased Demand from the Electric Sector." February 2015. Appendix B: Natural Gas, http://energy.gov/sites/prod/files/2015/06/f22/Appendix%20B-%20Natural%20Gas_1.pdf

CO117-5 (cont'd)

A Williams Company (Transco) representative relayed the difficulty when dealing with accurate numbers about Transco capacity. They cannot refer to capacity in the system (even though it exists) unless it applies to a project that has subscribers. Many of the projects adding to the Transco capacity are owned by natural gas producers. Their marketing subsidiaries are the "customers". This leads to misunderstanding about the actual availability of natural gas and the pipeline capacity to transport it. Many misinterpret the "fully subscribed" nature of these projects as meaning that there is no natural gas or transport capacity available (the ACP and the DEIS make this error) when in fact, the projects are owned by gas producers eager to find customers, especially in the Southeast.

It makes sense to use existing pipelines before building something new. A pipeline project should be approved only if it offers substantial benefits compared to existing options. The opportunity to attract new customers to existing pipelines should not be diminished by a new competitor such as the ACP because it has captive customers that subsidize its operation who are not allowed to seek other lower cost means of supply.

Supplying the ACP Points of Delivery

The following points of delivery are identified in the application for the ACP:

Virginia

Columbia Gas Transmission, Randolph County WV

Dominion's subsidiary Virginia Power Services Energy Corp. (VPSE) has reserved 300,000 Dth/d for delivery at an intersection with the Columbia Gas line in West Virginia. It is not clear if this is intended for the Warren County plant, for general arbitrage throughout Columbia Gas's extensive system, or for delivery into Virginia to connect to future Dominion power plants at locations that have not yet been determined. In any case, the Columbia Gas pipeline will establish a connection with the Transco corridor in northern Virginia as part of the WB XPress project that will accomplish the same purpose.

CO117-5 (cont'd)

Transco, Brunswick and Greensville Counties VA

VPSE has reserved 300,000 Dth/d for delivery to the Brunswick and/or Greensville power plants in Southside Virginia. The amount reserved by VPSE is not sufficient to supply both plants at full capacity, although some amount could be supplied to both of these units. The Brunswick plant is currently supplied by a connector to the Transco system completed in the fall of 2015 (Virginia Southside Expansion Project). A four-mile connector will supply the Greensville plant when it begins operation in 2018. Dominion paid Transco for modifications to pipes and compressor stations in New Jersey in order to make the southbound flow of gas from the Marcellus to Virginia possible for this project. Based on tariffs filed with the Commission, the cost to transport gas to these plants using the ACP is over 3 times more expensive (over $200 million more per year) than the cost to use the existing connection to Transco. The Transco alternative results in significant savings to ratepayers over the 40+ year life of these two plants.

Using the Transco system as the primary source of supply to Virginia and North Carolina would avoid the expense and great disruption associated with the construction and operation of a compressor station in Buckingham County, Virginia.

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Z-2405

CO117-5 (cont'd)

Service to Chesapeake, Virginia identified by VPSE and Virginia Natural Gas will be included in the discussion about the Columbia Gas Pipeline in the next section.

North Carolina

About two-thirds of the capacity of the ACP is bound for North Carolina. Hundreds of miles of 42" pipeline are proposed to be built by the ACP in very sensitive terrain in West Virginia and Virginia in order to transport gas to North Carolina. This is unnecessary, expensive for ratepayers, and destructive to the environment. Rather than 600 miles of pipeline proposed by the ACP, the same volume of gas can be delivered to North Carolina by just 200 miles of new pipeline (half on existing right-of-way). This is much less expensive and far less destructive than the ACP.

Without a compressor station in Buckingham County, VA there is no need for a supply point at that location. The connection to Transco will be made where the Cardinal Pipeline currently connects in Rockingham County, North Carolina. A compressor station would be required at this location, replacing the one in the northern part of the state (for the ACP). The Cardinal Pipeline is a 24-inch pipeline that runs 105 miles to a point southeast of Raleigh, NC. A 30" or 36"-inch pipeline (whatever is appropriate) would connect to Transco and run along the existing Cardinal right-of-way that is jointly owned by Transco, Piedmont Natural Gas, and Public Service Company of North Carolina. Outside of Raleigh, the pipeline would leave existing right-of-way and connect to the last 90 miles or so of the corridor that was identified by the ACP. This would

CO117-5 (cont'd)

supply the points of delivery identified by the ACP with exactly the same volumes of natural gas in precisely the same locations as the ACP.

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Z-2407

CO117-5 (cont'd)

Transco plans to modify compressor stations along the main corridor as needed to support southbound flow. Necessary modifications would be made to maintain appropriate flow and specified pressure to assure reliable power plant operation.

A comparison of the benefits and impacts of this alternative to the ACP will be made when the last supply point is covered in the next section about the Columbia Gas Pipeline.

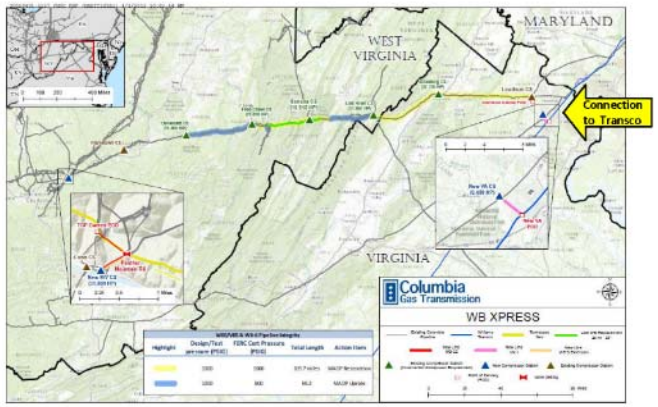
3.2.2.2 Existing Columbia Gas Pipeline

In the previous section, it was shown that abundant capacity on the Transco system could be used to supply all of the points of delivery specified for the ACP with 105 miles of new pipeline construction on existing right-of-way and about 95 miles of greenfield construction on the same right-of-way as that proposed for the ACP. The 150,000 Dth/d reserved by Virginia Power Services Energy and the 155,000 Dth/d reserved by Virginia Natural Gas for delivery at Southern Gate 1 Interconnect in Chesapeake, VA was not addressed. The ACP expects to serve this region with a 20-inch pipeline on 83 miles of new right-of-way from North Carolina to Chesapeake.

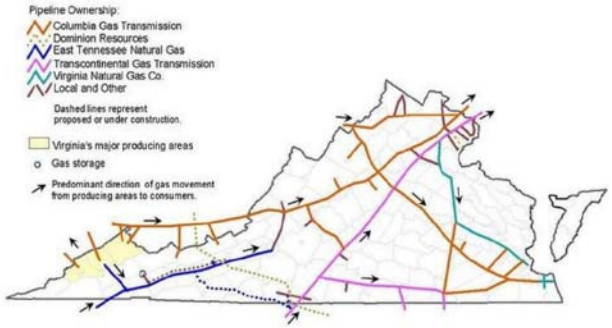
The Columbia Gas Pipeline currently has a capacity of 3.0 Bcf/d with an extensive network of pipelines in West Virginia and Virginia going up the east coast into New York. A 1.3 Bcf/d expansion to the system (WB XPress) is planned that will require just 3 miles of new pipeline, 26 miles of replacement pipeline, plus compressor additions and modifications.

CO117-5 (cont'd)

A connection to the Transco corridor will be made as part of the WB XPress project (shown as New VA Compressor Station and New VA Point of Delivery on the drawing).



This connection could tap low-cost Marcellus gas that could be made available throughout Virginia using the existing network of Columbia Gas and Transco pipelines. Siting new power plants, wherever they might be best located, would be far easier using this extensive network compared to the single corridor for the ACP. Using these existing pipelines to transport the gas would save ratepayers hundreds of millions per year in lower costs to transport the gas.



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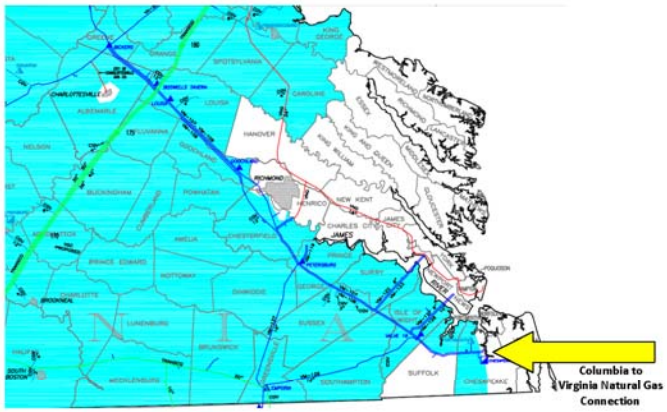
Z-2409

CO117-5 (cont'd)

Columbia Gas has existing pipelines that connect to Virginia Natural Gas in the Chesapeake area. However, it is unlikely that they have 155,000 Dth/d of available capacity. Looping a new 20" pipeline on the existing right-of-way would probably be required to provide adequate capacity to the Chesapeake area. Columbia Gas did not respond to requests for information about their pipeline, so it is difficult to determine the distance and details of what might be required to implement this option. Even if the pipeline is longer than 83 miles, it would be constructed on existing right-of-way so the impacts would be far less than the pipeline to Chesapeake associated with the ACP. It would not be part of a 600-mile $5 billion pipeline so the gas transportation costs would be a small fraction of the charges required to transport gas to Chesapeake over the ACP.



Comparison of Transco/Columbia Gas to the ACP

NEPA requires that merits of each alternative be compared with the proposed action so that reviewers can readily see the differences between the alternatives. A table identifying many of the major points of comparison is shown below:

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CO117-5 (cont'd)

Comparison of ACP to Transco/Columbia Option

Category	ACP	Transco/Columbia
Capacity	1.5 Bcf/d	1.5+ Bcf/d
Pipeline		
42"	333 miles	0 miles
36" new ROW	186 miles	95 miles
36" existing ROW		105 miles
20" new ROW	83 miles	
20" existing ROW		100+? Miles
Compressors	3	1 + modifications
Construction Period	2+ years	1 year
All ACP delivery points	Yes	Yes
Economics		
Project Cost	$5 Billion	$1+ Billion
Ratepayer costs	High	Low
Jobs 8-10 months	Moderate	Low
Tax pmts to govts	Moderate	Low
Tax loss prop values	Moderate	Low
Flexibility of gas supply	W. Marcellus	Multi E. Marcellus
		Multi Gulf Coast
Damage to view/tourists	Significant	Little if any
Environmental Impacts		
Steep slopes/landslides	Significant	None
Karst	Significant	None
Erosion/sedimentation	Significant	Little or none
Stream crossings	Significant	Little or none
Unique habitats	Significant	None
Endangered species	Many	None
Drinking water quality	Significant risk	Little or none
Conservation easements	Significant	None
BR Pkwy - App Trail	Significant	None
Historic prop affected	Significant	None
Historic/cultural resources	Significant	None
Compressor sta. effects	Significant	Moderate

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Z-2411

CO117-5 (cont'd)

This comparison highlights the economic advantages of the Transco/Columbia option compared to the ACP. It will save ratepayers hundreds of millions per year, provide multiple sources of gas supply compared to just one for the ACP, resulting in pricing flexibility and security of supply. The ACP will create more jobs but the jobs will last just 8-10 months. Long-term job gains will be negligible. Losses to local communities from property value decline, local employment losses due to less tourism and view-shed deterioration will be minimal with the Transco/Columbia alternative.

Environmental impacts will be minimized with the Transco/Columbia option. Much of the construction will occur on moderate terrain over existing rights-of-way. The ACP poses significant risks in many important areas, as have been identified in other comments to the Commission. Although this is a summary analysis, it shows the substantial advantages that the Transco/Columbia alternative has over the proposed action. Perhaps the ACP's application and the DEIS were deficient in the proper NEPA comparison of alternatives in order to avoid this comparison. The Commission cannot in good conscience ignore this evidence. An objective review must be made prior to any final determination of the public convenience and necessity related to the proposed action. This option cannot be dismissed just because it is not a pipeline from West Virginia. The Transco/Columbia alternative meets all of the project criteria identified in Section 1.1 far better than does the proposed action.

CO117-5 (cont'd)

3.2.3 Proposed Pipeline Projects

In addition to modifying existing pipelines, proposed projects in the region were considered as alternatives to the ACP. The WB XPress and the Mountain Valley Pipeline projects were considered as possible alternatives to the ACP.

3.2.3.1 Proposed WB XPress Project

The WB XPress upgrade will add 1.3 Bcf/d of capacity to the Columbia Gas system. The subscribers of the capacity and the specific amounts allocated to them were not identified in the WB XPress application for competitive reasons. It is likely that much of this capacity will go to actual end-users, unlike many project proposals today. Some excess capacity probably remains to be used. Because of the connection to Transco occurring with this project we believe the WB XPress added capacity and the existing Columbia Gas pipelines can best be utilized to replace the 155,000 Dth/d provided by the ACP in Chesapeake, VA as described in the previous section regarding Columbia Gas.

3.2.3.2 Proposed Mountain Valley Pipeline

Mountain Valley Pipeline, LLC (MVP) proposes to construct and operate 301 miles of 42-inch-diameter pipeline from Wetzel County, West Virginia to connect to the existing Transco pipeline system in Pittsylvania County, Virginia. The Project capacity is 2.0 Bcf/d and is owned by various natural gas producers, midstream master limited partnerships, and natural gas marketers. The shippers are all affiliates of the owners. Only 0.5% of the capacity is reserved by an end user of natural gas (Roanoke Gas Company, a Local Distribution Company). There is no substantiated market demand for the project. The DEIS for the MVP said that it "could" supply Local Distribution Companies, industrial users, and power generation facilities in the Appalachian, Mid-Atlantic, and Southeast regions. The MVP documents have not identified any specific end-users other than Roanoke Gas Company to prove a market demand for the project.

CO117-5 (cont'd)

The ACP DEIS mischaracterized the need for a merged MVP/ACP alternative. There is no need for a massive pipeline carrying 3.44 Bcf/d of capacity. The MVP is a project mostly owned by natural gas producers searching for customers and the ACP owners have utility subsidiaries looking for suppliers. There is at most a need for just one 1.5 – 2.0 Bcf/d pipeline. The ACP seeks to obtain a supply of natural gas from the western Marcellus in West Virginia that roughly corresponds to the supply zone for the MVP. The MVP intends to connect to the Transco pipeline in order to find a market. By using the Transco/Columbia connections described previously, the MVP could supply all of the ACP points of delivery.

The primary difference between the MVP option and the Transco option would be the extra 301 miles of 42" pipeline required by the MVP and the fact that the main source of supply is the Western Marcellus (preferred by the ACP) rather than the most productive zone in the Marcellus (northeastern PA) that is utilized by Transco.

The merged MVP/Transco option is superior to the ACP. It is cheaper to build, so it would have a lower cost to ratepayers.

CO117-5 (cont'd)

Comparison of ACP to MVP/Transco and Transco/Columbia Options

Category	ACP	MVP/Transco	Transco/Columbia
Capacity	1.5 Bcf/d	1.5-2.0 Bcf/d	1.5+ Bcf/d
Pipeline			
42"	333 miles	301 miles	0 miles
36" new ROW	186 miles	95 miles	95 miles
36" existing ROW		105 miles	105 miles
20" new ROW	83 miles		
20" existing ROW		100+? Miles	100+? Miles
Compressors	3	3+1	1 + modifications
Construction Period	2+ years	1.5-2 years	1 year
All ACP delivery points	Yes	Yes	Yes
Economics			
Project Cost	$5 Billion	$4+ Billion	$1+ Billion
Ratepayer costs	High	High-but lower than ACP	Low
Jobs 8-10 months	Moderate	Moderate	Low
Tax pmts to govts	Moderate	Moderate	Low
Tax loss prop values	Moderate	Moderate	Low
Flexibility of gas supply	W. Marcellus	W. & E. Marcellus Multi Gulf Coast	Multi E. Marcellus Multi Gulf Coast
Damage to view/tourists	Significant	Significant<ACP	Little if any
Environmental Impacts			
Steep slopes/landslides	Significant	Significant<ACP	None
Karst	Significant	Significant<ACP	None
Erosion/sedimentation	Significant	Significant<ACP	Little or none
Stream crossings	Significant	Significant<ACP	Little or none
Unique habitats	Significant	Significant<ACP	None
Endangered species	Many	Uncertain	None
Drinking water quality	Significant risk	Significant<ACP	Little or none
Conservation easements	Significant	None	None
BR Pkwy - App Trail	Significant	Significant	None
Historic prop affected	Significant	Significant<ACP	None
Historic/cultural resources	Significant	Significant<ACP	None
Compressor sta. effects	Significant	Significant	Moderate

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CO117-5 (cont'd)

Summary

The supply source in the western Marcellus plus the many sources in the eastern Marcellus and Gulf Coast provided by the combination with Transco would be superior in price flexibility and security than the single source in the western Marcellus provided by the ACP. The environmental impacts associated with the MVP would be slightly less than those associated with the ACP because the mountains in Virginia disrupted by the ACP have more stream crossings and are steeper, higher, and contain more sensitive and unique habitat compared to the areas damaged by the MVP.

The comparison also unmistakably shows that the Transco/Columbia Gas alternative is superior to the MVP/Transco option and to the proposed action. There is no benefit of adding the MVP to the Transco/Columbia configuration in order to reach the ACP delivery points. The MVP adds 301 miles of 42-inch pipeline that substantially increases the price and adds significant environmental impacts. The change to a western Marcellus supply zone is not better than the abundant low-cost gas that is available from the eastern Marcellus via Transco.

The Transco/Columbia Gas alternative costs much less than the other choices leading to much lower costs to ratepayers. The multiple sources of supply are greater with the Transco option than any other choice resulting in more flexibility in sourcing lower cost seasonal supplies and greater security. Making a majority of the necessary modifications on existing rights-of-way in moderate terrain avoids the major impacts in the sensitive steep elevations encountered by the ACP and MVP.

Using existing pipelines also provides a hedge against stranded costs. Investments in new pipelines to the points of delivery would be made when it is clear that new power plants would be approved that need additional natural gas service. The main gas transmission pipelines in the Transco corridor have value for many purposes throughout the east coast that are not dependent on the approval or continued operation of new gas-fired power plants. The ACP puts the burden of possible stranded assets squarely on the ratepayers of the captive utility subsidiaries of the utility holding companies that are the ultimate owners of the ACP.

CO117-5 (cont'd)

The only drawback to the applicant is that the Transco option does not result in the utility holding companies owning and operating their own pipeline. A significant issue to them, but a great relief to the ratepayers who would avoid hundreds of millions of dollars in higher transportation charges for moving the gas on the ACP. The Transco/Columbia alternative meets all of the project criteria identified in Section 1.1 far better than does the proposed action. An objective and rigorous examination of these facts must be included in a revised DEIS and offered to the public for review and comment before the final EIS is issued. Dismissing this evidence would not comply with the Natural Gas Act. The Commission must consider the public convenience and necessity prior to issuing a certificate.

If the Commission chooses to certify a project that is not needed and costs more, it is forcing landowners to unwillingly relinquish access to their property purely for the private gain of the developers.

Historically, the Commission has reviewed projects to see if they had customers (precedent agreements). Experience has shown that this is not enough to demonstrate market demand for the project, especially if the "customers" are affiliates of the pipeline owners. The Natural Gas Act requires that the public's interest must be served by the project, not just the desires of the pipeline developers, before a certificate can be issued.

The Commission issued Order No. 636 to achieve more fairness in the development of the nation's natural gas system. The purpose of this order was to balance the interests of pipeline investors with the interests of consumers. In particular, the Commission wanted to regulate pipelines in a way that did not give a competitive advantage to pipelines over other sellers of natural gas. The Commission felt it was "vital to give all gas purchasers (Local Distribution Companies and end users, such as industrials and gas-fired electric generators) the ability to make market-driven choices about the price of gas as a commodity and about the cost of delivering the gas". . . "Only then will gas purchasers be able to purchase, based upon their needs, the exact services they want with full recognition of the prices that they would have to

CO117-5 (cont'd)

pay. And only then will the Commission be assured that all gas is transported to the marketplace on fair terms."

Order 636 referenced the Natural Gas Act saying that Congress's "primary aim . . . was to protect consumers against exploitation at the hands of natural gas companies" to ensure consumers "access to an adequate supply of gas at a reasonable price."[62]

Natural gas is a valuable strategic resource. We should not rush to build unnecessary projects that will result in a short-term gain for a few and long-term pain for many others. We must rely on the honesty and foresight of the Commission to decide what truly serves the public convenience and necessity.

Respectfully submitted, March 31, 2016

/s/ Thomas Hadwin
Friends of the Central Shenandoah
328 Walnut Ave.
Waynesboro, VA 22980
(540) 256-7474
tzhad13@gmail.com

[62] Order No. 636, United States Of America, 59 FERC 61, 030, Federal Energy regulatory Commission, 18 CFR Part 284

CERTIFICATE OF SERVICE

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

Dated at Waynesboro, VA, this 31st day of March 2017.

/s/ Thomas Hadwin

Friends of the Central Shenandoah
328 Walnut Ave.
Waynesboro, VA 22980
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COMPANIES/ORGANIZATIONS COMMENTS

CO118 – Friends of Nelson and Friends of Wintergreen

April 2, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

RE: Comments of Friends of Nelson and Joyce Burton, Intervenors

Re: The Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline and Supply Header Project (Docket Nos. CP15-554-000, CP15-554-001, and CP15-555-000. FERC/EIS- 0274D)

Dear Mr. Davis and Members of the Commission,

CO118-1 Attached please find comments prepared by Blackburn Consulting Services at the request of Friends of Nelson and Friends of Wintergreen. Both of these groups are intervenors and assert that the construction of the ACP will have significant adverse environmental and economic impacts on Nelson County.

I particularly want to draw FERC's attention to the fact that Blackburn Consulting -- nationally certified Licensed Professional Soil Scientists through the Soil Science Society of America, with over 50 years of experience in mapping and evaluating soil characteristics for a variety of purposes from agriculture/forestry to land development/environmental and wastewater disposal -- concludes that this **DEIS is flawed and insufficient because it was prepared using information that does not include the appropriate level of detail to adequately evaluate the potential for slope failures/landslides**.

Both the ACP and FERC repeatedly recognize the fact that the geography of Nelson County is particularly prone to slope failures/landslides[1]. Tables within the DEIS note that the county is ranked third of thirty-six counties along the pipeline route for having major revegetation concerns[2], and is first in acreage with slopes grater than 30 percent.[3] DTI's own Slope Stability Policy and Procedure for Pipeline Design, Construction and Right of Way Maintenance also admits that the location of slope failures can be challenging to predict[4] and that pipeline route selection is an important component of avoiding or minimizing the occurrence and impacts of these slope failures[5]. Yet despite their support of more rigorous testing in landslide-prone National Forest lands, FERC has not recommended the use of similar protocols in vulnerable, populated areas like Nelson County. Requiring ACP to conduct an Order 1 Soil Survey and use more accurate topographic data along and adjacent to the pipeline route in areas with steep slopes would help identify susceptible landforms and provide some of the additional information needed to more responsibly site the pipeline, therefore reducing the chances of slope failures/landslides, erosion and sedimentation.

FERC recognizes that "While Atlantic and DTI have implemented programs and several mitigation measures to minimize the potential for slope instabilities and landslides, the **development of other slope instability/landslide risk reduction measures have not been**

CO118-1 Comment noted.

Impacts related to slope stability and landslides are discussed in section 4.1.4. As described in section 4.12, ACP would be constructed and operated in accordance with the DOT's requirements for safety under 49 CFR 192.

Atlantic and DETI would adopt the general construction, restoration, and operational mitigation measures outlined in our Plan and Procedures, which are a set of construction and mitigation measures that were developed in collaboration with other federal and state agencies and the natural gas pipeline industry to minimize the potential environmental impacts of the construction of pipeline projects in general. In addition, Atlantic and DETI have identified additional measures they would implement during construction to reduce impacts; we reviewed these measures in the EIS, concluded if they would be effective, and recommended additional measures where appropriate.

See also the response to comments CO6-1 and CO63-1.

CO118-1 (cont'd)

completed or have not been adopted [as of the issuance of this DEIS]"[6] (emphasis added). At the very least, the development of these measures should be completed, adopted and submitted to FERC before the production of a final EIS – though it is our contention that this should be included in a revised DEIS first, since stakeholder input is requisite for NEPA compliance – or the true risk of long-term environmental damage will be impossible to determine.

Although the proposed pipeline has been sited to "maximize ridgeline construction,"[7] FERC concedes that the risk of landslides is not limited to the areas of actual construction and that "**Changes in surface and subsurface drainage may increase pre-existing landslide hazard potential on natural slopes adjacent to the pipeline and access roads, and may create or contribute to failure of the natural slopes adjacent to the pipeline and access roads"** and cause a "project-induced landslide"[8] (emphasis added). When you combine this with potential downslope water impacts, and the fact that landslide damage would also "lead to additional disturbance of land and environmental resources in order to stabilize the landslide and replace pipeline or reroute sections of the pipeline that cannot be stabilized,"[9] the effects of this increase in landslide risk – which is not limited to the ROW itself – can hardly be deemed "insignificant".

Given the above facts, **we believe that, lacking the additional information and subsequent analysis called for in the Soil Foundations'** ***Report Analysis and Field Verification of Soil and Geologic Concerns with the Atlantic Coast Pipeline (ACP) in Nelson County, VA***[10] **the DEIS cannot be considered anything but deficient and, we believe, negligent.** How can FERC conclude that the ACP's impact on landslide risk will be adequately mitigated when sufficient information has not even been collected to perform a responsible analysis of the risks in the first place?

This additional information would help identify concave colluvial landforms along and adjacent to the pipeline route that are at the greatest risk for slope failures and would

- enable the ACP to identify and route around failure-prone areas
- enable the ACP to avoid diverting surface and subsurface drainage onto/into vulnerable slopes therefore decreasing the potential for slope failures/landslides
- enable the ACP to avoid increasing surface loads adjacent to vulnerable slopes thus decreasing the likelihood of landslides and their associated environmental damage
- enable FERC to more accurately predict the likelihood of slope failures, erosion and sedimentation of waterways, and to weigh the adverse impacts of this project accordingly.

Given the multiple steep-slope related deficiencies in the DEIS noted by Blackburn and others, we ask FERC to rescind the current DEIS. We demand that ACP perform a more thorough assessment of the site-specific landslide risks in Nelson, as well as release site-

CO118-1 (cont'd)

specific construction/mitigation plans so that stakeholders can provide meaningful input to FERC on those plans as part of a new, and NEPA-compliant, DEIS process. Until this occurs, ACP's application must not be allowed to proceed further.

Sincerely,

Joyce Burton

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[1] *Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement,* Volume I, Section 4.1.4.2 (Environmental Analysis, Landslides). Published by FERC, December 30, 2016

[2] *Resource Report 7 (Soils),* Table 7.4.1-1, "Acres of Soil Characteristics Affected by the Proposed Pipelines for the Atlantic Coast Pipeline and Supply Header Project", originally submitted to FERC by Dominion/ACP in September 2015, and updated in Appendix I of their July 18, 2016 Supplemental Filing.

[3] Ibid. Table 7.4.1-2 "Topsoil Depths Along the Proposed Pipeline Routes for the Atlantic Coast Pipeline and Supply Header Project".

[4] *Slope Stability Policy and Procedure for Pipeline Design, Construction and Right of Way Maintenance* (Section 2.0). Dominion Transmission Inc, 9/28/2016. Submitted to FERC by ACP January 27, 2017. FERC Docket # CP15-554-000, Accession No. 20170127-5202. Appendix C, Attachment C.

[5] Ibid., (Section 3.0).

[6] *Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement,* Volume I, Section 5.1.1 (Conclusions and Recommendations, Geological Resources). Published by FERC, December 30, 2016.

[7] Ibid.

[8] Ibid., Volume I, Section 4.1.4.2 (Environmental Analysis, Slope Stability).

[9] Ibid.

[10] Released March, 2017. Submitted to FERC by Friends of Nelson 3/27/2017. FERC Docket # CP15-554-000, Accession No. 20170327-5096.

SoilFoundations
Blackburn Consulting Services, LLC

Soil | Foundations

Friends of Nelson
Attn: Randy Whiting and Joyce Burton
96 Old Turtle Place
Nelly's Ford, VA 22958

March 23, 2017

Dear Friends of Nelson and Friends of Wintergreen:

Re: Nelson County issues resulting from a review of the DEIS

Blackburn Consulting Services, LLC prepared a report for the Friends of Nelson and Friends of Wintergreen, evaluating the submissions to FERC through December 1 of 2016. http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170327-5096 As part of that review we conducted field verification of our analysis. We identified several issues with the studies for the Atlantic Coastal Pipeline (ACP), prepared and submitted to FERC. Issues identified in our report were related to, but not limited to, slope stability and landslide potential, erosion and water quality. After the release of the Draft Environmental Impact Statement (DEIS) late December 2016, we have reviewed comments made by ACP and FERC's review/analysis. Because we have too many comments on various portions of the report and FERC's DEIS, for the purpose of this review we will restrict our analysis to soils, slope stability and erosion/water quality. Below is a summary of our limited review of the DEIS.

I. Basic Soil and Topographic Information Used

Among our biggest concerns with the reports and the DEIS is the data used to make critical decisions on alignment, contingencies and risk:

What data was used in the ACP evaluation of this proposed route?

USGS topographic 20' contour-interval data used as base data for mapping.

NRCS Soil Surveys and the computerized SSURGO database FERC staff states "SSURGO provides the most detailed level of information of soil mapping done by the NRCS" **Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226**

While the statements in the DEIS are true, that this is the most detailed level of information currently available, this soils mapping was done for the "once over mapping of the US as part of the National Cooperative Soil Survey Program". However, USDA/NRCS also has guidelines for site specific "order 1" soils surveys where more detailed information is needed. Due to this fact, the US Forest Service (abbreviated FS in the DEIS) required order 1 soil surveys to be completed

on all their property proposed to be impacted prior to any approval. It is unfathomable why this is critical for remote, sparsely populated Forest Service land, yet not a consideration in populated, privately owned, and in many cases, failure prone, areas. An order 1 soil survey is an excellent idea and should be required for all impacted lands including private properties. The USGS topographic data is 1:24,000 scale with a 20' contour interval. During our field visit, we found the use of this data to be inadequate and incapable of illustrating much of the critical landforms and micro relief.

Use of the USGS topo and the NRCS soil surveys "web soil survey" simply does not include sufficient detail to adequately evaluate the alignment and potential for slope failures/landslides. Our field observations confirmed that USGS's 20'contour intervals do not adequately show many of the concave landforms high on these mountain slopes and the mapping in web soil survey does not show the extent of the colluvial soils that we observed in these concave landforms. This is further verified by the following statement; "Therefore, soil surveys provide a broad overview of soil conditions but are not designed for site-specific evaluations." **Attachment C. 3.2.3 USDA Natural Resource Conservation Service Soil Surveys pp. 24**

As stated in the DEIS; "ACP and SHP would traverse a variety of soil types and conditions." This is true even with the use of the "web soil survey," which is designed as a regional planning tool. By conducting an order 1 soil survey, the number of mapping units could easily double.

Order 1 soil surveys are intended to provide more site specific soil data for proposed projects. In many cases, mapping at an order 1 level may reveal landforms or inclusions within map units of soils that were not named or were not able to be delineated at the scale of the official soil survey. The order 1 soil survey can also identify use-dependent soil properties that are different from the typical soil properties listed for map units in the "official" soil survey (paraphrased from NRCS, 2016b).

II. Slope Stability and Landslide Potential –

ACP and FERC both repeatedly recognize that there is a high potential for landslides in portions of the Appalachian and Blue Ridge Physiographic provinces. Furthermore, both entities accept that land clearing and installation of the pipeline increase that potential as well as the potential to cause damage to the pipeline itself. Some examples are as follows:

> "We have also determined that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur."
> **Vol 1. 5.1 Conclusions of the Environmental Analysis pp. 698**

> "During construction of the pipeline facilities, activities on steep slopes could initiate localized slope movement. In addition, during operation, a naturally occurring landslide could damage the proposed facilities and create a potential safety hazard to nearby residents."
> **Vol 1. 4.1.4.2 Slope Stability pp. 209**

Soil Foundations

"Landslide damage would lead to additional disturbance of land and environmental resources in order to stabilize the landslide and replace pipeline or to reroute sections of the pipeline that cannot be stabilized."
Vol 1. 4.1.4.2 Slope Stability pp. 208

Project-induced landslides, such as failures of cut slopes or fill slopes, may result from the construction, operation, and maintenance of the pipelines and access roads. Project-induced landslides can create risks to public safety, environmental resources, and infrastructure on lands upslope and downslope as well as within the access roads and pipeline corridors. Fill slopes, especially inadequately constructed and maintained fill slopes, are a source of debris flows in mountainous terrain (Collins, 2008; Wooten et al., 2009; Latham et al., 2009; Wooten et al., 2014; Wooten et al., 2015).
Vol 1. 4.1.4.2 Slope Stability pp. 208

Another type of project-induced landslide may result from the projects' alteration of the surface and subsurface drainage in the areas of construction, and in adjacent natural slopes along the pipeline and access roads. Changes in surface and subsurface drainage may increase pre-existing landslide hazard potential on natural slopes adjacent to the pipeline and access roads, and may create or contribute to failure of the natural slopes adjacent to the pipeline and access roads.
Vol 1. 4.1.4.2 Slope Stability pp. 208

While Atlantic and DTI have implemented programs and several mitigation measures to minimize the potential for slope instabilities and landslides, the development of other slope instability/landslide risk reduction measures have not been completed or have not been adopted. Additionally, although the proposed pipelines have been cited to maximize ridgeline construction, numerous segment of pipeline would be constructed on steep slopes and in areas of high landslide potential. Considering the historic and recent landslide incidences in the immediate project area, along with the factors above, we conclude that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur.
Vol 1. 5.1.1 Geological Resources pp. 699

Southeast of the Appalachian Plateau, the flanks of the Appalachian Ridges and the Blue Ridge are covered by colluvium that is highly susceptible to sliding. Because the colluvium covers many types of bedrock, the map designations of landslide incidence and susceptibility cross formational boundaries.
Attachment C. 2.1.1 Appalachian Highlands Region pp. 17

ACP supplied diagrams detailing the cut and fill construction for steep slopes. These diagrams do not provide any examples of installation on steep, narrow ridges, where the ridgetop is 50-75' wide with very steep slopes and mapped debris-flows on either side.
Attachment C. Diagram C-33

III. Erosion Control and Impact to Water Quality/Sediment in Waterways

ACP identifies numerous times that Nelson County is one of the counties where they have significant concerns regarding adequate revegetation. According to ACP's own submission to FERC, Nelson County ranks third of thirty six counties in the entire proposed pipeline ROW (PA, WV, VA and NC) for having major revegetation concerns, and ranks first in acreage with slopes >30%.

As evidenced in our limited field studies, we concur that the combination of a non-cohesive sandy surface textures in, often, excessively drained soil, with steep to very steep slopes will result in both very difficult revegetation efforts and erosion. High volumes of sediment are expected to impact the local streams and waterways. This will result in significant erosion and water quality problems both immediately and for many years in the future.

Increases in stormwater runoff volume and velocity due to the removal of trees appears to be inadequately addressed. According to the VA DCR Erosion and Sediment Control Handbook, roughness coefficients used to calculate the runoff are dramatically different for wooded areas vs. those that are in grass. When the pipeline is installed directly up and down the slope, runoff on those areas will certainly be increased. The potential for flash flooding will also be increased during heavy storms and as mentioned in the DEIS:

> "Flash flooding can also increase landslide potential within the project area by scouring steep slopes and eroding bedrock." Vol 1. 4.1.4.3 Flash Flooding pp. 212.

IV. Conclusions and Recommendations

Slope stability in western Nelson County is tenuous in its current state even with the stabilizing effects of mature forests. Removal of vegetation and human manipulation of the soils and landforms are primary factors associated with increasing the potential for landslides. We believe that clearing these steep, potentially unstable areas of Nelson County and installing the 42' Pipeline will eventually result in failure during, or at some point after, installation. These failures are likely to impact properties not managed by, or within the easement of, ACP. Furthermore we do not believe the stability will ever return to the existing level of protection that is currently provided with the mature forests.

ACP should be required to acquire site specific data in order to more accurately determine where the potential for landslides are in Nelson County. Additionally, we recommend determining how many/which properties would be affected if such landslides would occur in these particularly unstable locations. Furthermore FERC should require this to be completed prior to approving the alignment and construction. That site specific data should include the following:

- Specifically map all historic and recent debris flows/landslides within Nelson County that occur within 1000' of the proposed pipeline. Since the pipeline is mostly proposed to be installed along the top of the ridges, most of the debris/landslides will start at or near the ridges and move down the slope away from the pipeline. Understanding that the USGS

states that the potential for future failure is higher in areas where previous landslides have occurred, evaluate the potential extent of landslides and who or what properties may be affected if this does occur.

- FERC should require ACP to conduct an Order 1 Soil Survey of the alignment through Nelson County specifically identifying concave/colluvial landforms and soils. Any amount of colluvium indicates that water will also be accumulating there. This should be combined with obtaining the currently-available-better topographic data and preforming topographic analysis to assist in analyzing landscape position (shape) and verify the soil mapping. In order to effectively address slope stability influenced by the ACP, this study should include a wide enough area (minimum of 200') either side of the proposed 125' ROW, access roads, and additional work areas.

- ACP has not adequately identified where or what they will do with excess soil material that will be left over after installing the pipe and gravel. Neither do they specify where they plan to disperse the excess water that they plan to remove from the construction site or by means of French drains. Spreading excess construction material in inappropriate areas will surcharge unstable soils and landforms as well as diverting or even trapping the natural flow of stormwater thereby increasing the risk of landslides to occur. Likewise, dispersal of water from "French drains" or pumped from trenches during construction into inappropriate areas will also add to the potential for slope failure/landslides.

- Erosion problems are to be expected during and after the construction of this pipeline through the very steep and highly erodible soils in Nelson County. Specific plans as to how this will be alleviated should be required by FERC prior to approval. Furthermore, access to the cleared pipeline with any types of vehicles even on private lands should be restricted as continual use will increase erosion, potentially causing future slope failures and certainly increasing the sediment loads in local waterways.

- Finally, many site characteristics and challenges that are able to be identified by virtue of the studies and information we mention in this letter are, instead, bestowed as responsibilities of the Project Team/field engineer. Aside from avoiding the analysis and review of diversely qualified professionals, by including these site specific challenges in the DEIS, this practice also places an enormous responsibility on the Project Team/field engineer to have the knowledge, skills and abilities to halt a time-dependent construction process when further studies, avoidable hazards, and future instability are encountered. Therefore, it is imperative that these vulnerable areas be specifically identified and measures be proposed before this alignment is approved.

Soil Foundations

COMPANIES/ORGANIZATIONS COMMENTS

CO118 – Friends of Nelson and Friends of Wintergreen (cont'd)

Attached is a matrix of our review with specific sections, comments and recommendations of the DEIS. We appreciate the opportunity to review this document and being of service. If you have any questions with regard to the information in this letter, or the attached matrix, please call or e-mail either of the undersigned.

Respectfully,

BCS, LLC

Alex Blackburn, LPSS

Ryan Reed, LPSS

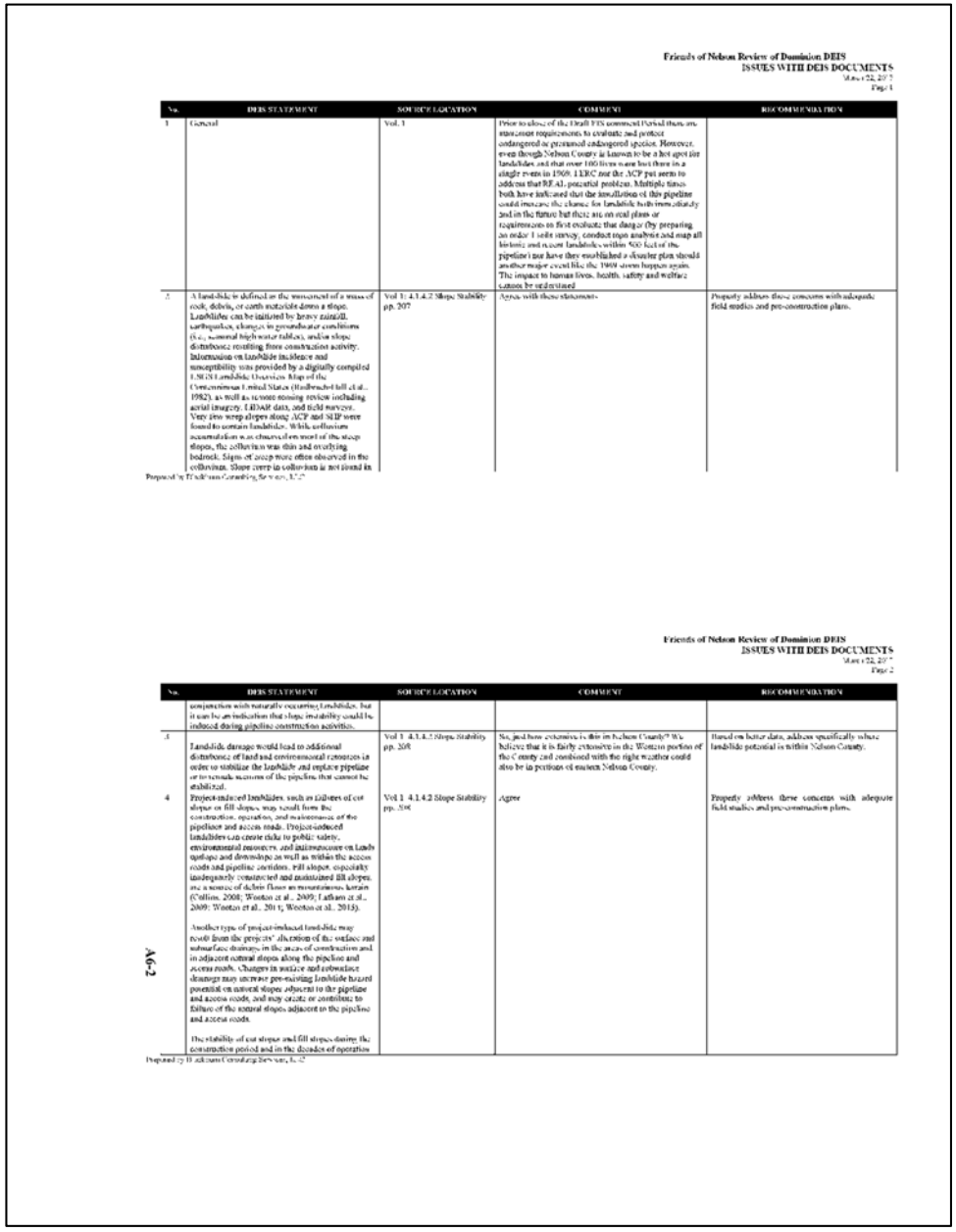
Attachment: DEIS Review Matrix

Soil Foundations

Z-2428

COMPANIES/ORGANIZATIONS COMMENTS

CO118 – Friends of Nelson and Friends of Wintergreen (cont'd)



Friends of Nelson Review of Dominion DEIS
ISSUES WITH DEIS DOCUMENTS
March 22, 2017
Page 1

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
3	General	Vol. 3	Prior to close of the Draft EIS comment Period there are numerous requirements to evaluate and protect endangered or threatened endangered species. However, even though Nelson County is known to be a hot spot for landslides and that over 100 lives were lost there in a single event in 1969, FERC nor the ACP put seem to address that REAL potential problem. Multiple times both have indicated that the installation of this pipeline could increase the chance for landslide both immediately and in the future but there are no real plans or requirements to first evaluate that danger (by preparing an order 1 soils survey, conduct topo analysis and map all historic and recent landslides within 500 feet of the pipeline) nor have they established a disaster plan should another major event like the 1969 storm happen again. The impact to human lives, health, safety and welfare cannot be underrated	
5	A landslide is defined as the movement of a mass of rock, debris, or earth materials down a slope. Landslides can be initiated by heavy rainfall, earthquakes, changes in groundwater conditions (i.e., seasonal high water tables), and/or slope disturbance resulting from construction activity. Information on landslide incidence and susceptibility was provided by a digitally compiled USGS Landslide Overview Map of the Conterminous United States (Radbruch-Hall et al., 1982), as well as recent mapping review including aerial imagery, LIDAR data, and field surveys. Very few steep slopes along ACP and SHP were found to contain landslides. While colluvium accumulation was observed on most of the steep slopes, the colluvium was thin and overlying bedrock. Signs of creep were often observed in the colluvium. Slope creep in colluvium is not found in	Vol 3: 4.1.4.2 Slope Stability pp. 207	Agree with these statements	Properly address these concerns with adequate field studies and pre-construction plans.

Prepared by Traditions Consulting Services, LLC

Friends of Nelson Review of Dominion DEIS
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Page 2

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	conjunction with naturally occurring landslides, but it can be an indication that slope instability could be induced during pipeline construction activities.			
5	Landslide damage would lead to additional disturbance of land and environmental resources in order to stabilize the landslide and replace pipelines or to remedy sections of the pipeline that cannot be stabilized.	Vol 3: 4.1.4.2 Slope Stability pp. 209	So, just how extensive is this in Nelson County? We believe that it is fairly extensive in the Western portion of the County and combined with the right weather could also be in portions of eastern Nelson County.	Based on better data, address specifically where landslide potential is within Nelson County.
4	Project-induced landslides, such as failures of cut slope or fill slopes, may result from the construction, operation, and maintenance of the pipelines and access roads. Project-induced landslides can create risks to public safety, environmental resources, and infrastructure on lands upslope and downslope as well as within the access roads and pipeline corridors. Fill slopes, especially inadequately constructed and maintained fill slopes, are a source of debris flows in mountainous terrain (Collins, 2008; Wooton et al., 2009; Latham et al., 2009; Wooton et al., 2011; Wooton et al., 2013). Another type of project-induced landslide may result from the projects' alteration of the surface and subsurface drainage in the areas of construction and in adjacent natural slopes along the pipeline and access roads. Changes in surface and subsurface drainage may increase pre-existing landslide hazard potential on natural slopes adjacent to the pipeline and access roads, and may create or contribute to failure of the natural slopes adjacent to the pipeline and access roads. The stability of cut slopes and fill slopes during the construction period and in the decades of operation	Vol 1 4.1.4.2 Slope Stability pp. 506	Agree	Properly address these concerns with adequate field studies and pre-construction plans.

Prepared by Traditions Consulting Services, LLC

AG-2

Z-2429

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	and maintenance will depend on many engineering geologic or geotechnical factors, such as slope gradient or inclination; the bedrock structure (orientation and distribution of bedrock fractures or discontinuities); the mass strength properties of in-place bedrock and surficial materials including soils and colluvium; the mass strength properties of excavated bedrock fragments and surficial materials used as fill, as well as fill imported from off-site; the nature of the contact between in-place bedrock and surficial materials including soils and colluvium (transitional or sharp; planarity); the nature of the contact between in-place bedrock and fills (transitional or sharp; planarity); rainfall quantity and intensity; and surface and subsurface drainage including near-surface groundwater and springs.			
5	During construction of the pipeline facilities, activities on steep slopes could initiate localized slope movement. In addition, during operation, a naturally occurring landslide could damage the proposed facilities and create a potential safety hazard to nearby residents.	Vol 1. 4.1.4.2 Slope Stability pp. 209	This is admitted and we agree, but there is no further study proposed to determine where these may occur or how they plan to protect lives and property.	Conduct further studies and provide a plan that addresses these concerns.
6	Slopes are classified in both degrees and percentages.	Vol. 1. 4.1.4.2 Slope Stability pp. 209	Measuring slopes in degrees versus percentages are two very different units. Use of both creates confusion for an average reader	Chose one unit. Percentage is preferable for field personnel.
7	Categories for the BIC Team to identify hazard conditions and preparing a set of standard mitigation designs.	Vol 1. 4.1.4.2 Slope Stability pp. 210	What about concave landforms/slopes that may have well drained soils but are known to have accumulation of laterally moving water during storms and wet periods.	Landscape position is critical in identifying debris-flow areas and failure prone sites. The angle of repose is lessened in these areas as well. Adequately address concave landforms along the corridor.
8	Slip Avoidance, Indentification, Prevention and Remediation Policy and Procedure to minimize,	Vol 1. 4.1.4.2 Slope Stability pp. 210	Measures that are proposed that may help stabilize the trench and immediate excavation will create concentrated	Once adequately identified, use site specific information to avoid concentrating flow and

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	and mitigate potential landslide issues . . .		water (ex. outlet pipes) in areas that may trigger other failure issues as a result	directing it to failure-prone areas.
9	Flash flooding has the potential to occur along waterbodies within the project area, particularly in areas with narrow river valleys, steep slopes, and rock bottoms. Flash flooding can also increase landslide potential within the project area by scouring steep slopes and eroding bedrock. Past coal strip-mining has also increased the anthropogenic impacts on flooding potential by over-steepening of slopes and disturbing and removing of overburden.	Vol 1. 4.1.4.3 Flash Flooding pp. 212	Agree.	Conduct further studies and provide a plan that addresses these concerns.
10	Acid producing rocks and soils are found in areas where sulfide minerals (including iron pyrite, marcasite, and pyrrhotite) are present.	Vol 1. 4.1.4.4 Acid Producing Rock and Soils	Agree	Conduct further studies and provide a plan that addresses these concerns.
11	The Northern Blue Ridge MLRA (130A) consists of rugged mountains with steep slopes, sharp crests, and narrow valleys. Major streams flow through gorges and gaps in the mountains. Broad valleys and basins and rolling hills are also prevalent in this MLRA. The soils in this MLRA are commonly moderately deep to very deep, sandy-skeletal to clayey soils that have a mesic temperature regime, an udic moisture regime, and mixed mineralogy. About 14.9 miles (3 percent) of ACP pipeline facilities would be within MLRA 130A.	Vol 1. 4.2.1 Existing Soil Resources pp	Agree, but this is a very general assessment, not intended for these site specific purposes.	Conduct further studies and provide a plan that addresses these concerns.
12	We identified the types and characteristics of soils crossed by ACP and SHP using NRCS Soil Surveys and the computerized SSURGO database for each county affected by the projects. SSURGO provides the most detailed level of information of soil mapping done by the NRCS. The Web Soil Survey was also reviewed to provide interpretations of the sensitivity of soils to specific types of disturbance	Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226	Agree, but this is a very general assessment, not intended for these site specific purposes.	Conduct further studies and provide a plan that addresses these concerns.

COMPANIES/ORGANIZATIONS COMMENTS

CO118 – Friends of Nelson and Friends of Wintergreen (cont'd)

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	and soil suitability for specific types of uses such as roads and construction.			
13	In addition to the SSURGO database, the FS acquired Order 1 Soil Surveys for the portion of ACP on NFS lands, including the MNF and the GWNF. Order 1 Soil Surveys are intended to provide more site specific soil data for the proposed project and are considered supplements to the official soil surveys, but they do not replace or change the "official" soil survey. In many cases, mapping at an Order 1 level or collecting point data may reveal inclusions within map units of soils that were not named in the official soil survey as well as use-dependent soil properties that are different from the typical soil properties listed for map units in the "official" soil survey (NRCS, 2016b).	Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226	Agree. This is critical	Just as was required for the NFS, all land, and particularly those areas that are debris-flow prone AND inhabited, such as Nelson County, should have the same level of studies conducted. The Order 1 Soil Survey, conducted on an area wide enough to adequately assess landforms throughout Nelson County, will be instrumental in providing data that could identify and avoid catastrophic debris-flow failures.
14	Based on information contained in the SSURGO database, ACP would cross about 723 individual soil map units consisting of one major soil type or complexes of two or more soil types that can contain a minor percentage (generally not more than 10 percent) of dissimilar soils. SHP would cross about 75 individual soil map units consisting of one major soil type or complexes. Our analyses focused on the major soil characteristics for the dominant soils within the map unit.	Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226	I assume on the dominant soils with the map unit? This statement represents a misunderstanding of the soil survey, and a growing amount of assumptions being made. A "Complex" soil mapping unit, by definition is dissimilar soils, and those dissimilar soils that are sufficiently different in morphology or behavior can be a much larger extent than 10% inclusion. Inclusions are different than the soils named in the complex. The ACP is a site-specific project where generalizing data that is already so aggregate for the plan is unwise.	Do not make generalities or further assumptions of the SSURGO data. Instead, conduct an Order 1 Soil Survey by licensed professionals on the entire line, particularly those areas prone to debris-flow.
15	Several soil characteristics have the potential to affect or be affected by, construction and operation of a pipeline. These include erosion potential, depth to shallow bedrock, stony and rocky soils, compaction potential, revegetation concerns, drainage patterns, hydric soils, and prime farmlands or farmlands of statewide importance.	Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226	Agree. This is the reason why accurate information is necessary.	Conduct an Order 1 Soil Survey on the entire line, particularly those areas prone to debris-flow.

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16	The majority of cumulative impacts would be temporary and minor when considered in combination with past, present, and reasonably foreseeable activities. However, some long-term cumulative impacts would occur on wetland and upland forested vegetation and associated wildlife habitats.	Vol 1. 4.13.4 VA Conclusions pp. 696	As stated in the report, extreme weather conditions, as well identified / unidentified slope stability and debris flow areas are encountered and not properly mitigated, then "long-term cumulative impacts" is a large understatement of catastrophic impacts.	Conduct further studies and provide a plan that addresses these concerns.
17	We have also determined that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur.	Vol 1. 5.3 Conclusions of the Environmental Analysis pp. 698	Agree	Conduct further studies and provide a plan that addresses these concerns.
18	Because the SAMPR only addresses the portion of ACP and SHP located in West Virginia, we have recommended that Atlantic and DTI verify that the SAMPR discussion applies to the entire ACP and SHP and not just the portions within West Virginia prior to construction.	Vol 1. 5.3.1 Geological Resources pp. 699	Agree, but the SAMPR needs to better account for the impacts to the adjacent landforms, as expressed in comment #7 above.	Apply SAMPR to entire ACP and SHP with adequate accounting of all impacts.
19	While Atlantic and DTI have implemented programs and several mitigation measures to minimize the potential for slope instabilities and landslides, the development of other slope instability, landslide, and reduction measures have not been completed or have not been adopted. Additionally, although the proposed pipelines have been sited to maximize ridgeline construction, numerous segments of pipeline would be constructed on steep slopes and in areas of high landslide potential. Considering the historic and recent landslide incidences in the immediate project area, along with the factors above, we conclude that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur.	Vol 1. 5.3.1 Geological Resources pp. 699	Agree	Conduct further studies and provide a plan that addresses these concerns.
20	ACP and SHP would traverse a variety of soil types	Vol 1. 5.3.2 Soils pp. 701	Agree. Though the variety and nature and properties of	Conduct further studies and provide a plan that

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	and conditions.		the soils are not accurately assessed for within the report.	addresses these concerns.
21	The projects would impact over 5,183 acres (10.7 percent) of soils that have a representative slope class greater than 8 percent. We analyzed the influence of slope percent as a variable factor in predicting soil erosion potential in rugged mountainous terrain. Based on this analysis, we find that construction practices would temporarily increase the erosion potential for soils crossed by ACP, but erosion rate should return to acceptable levels once final restoration has been completed. In addition, Atlantic's *Restoration and Revegetation Plan* and FERC Plan contain provisions for erosion control practices such as use of mulch and reestablishing vegetation within specific timeframes after construction is complete. Furthermore, because the construction rights/time is relatively short, we conclude that implementation of the measures in the *Restoration and Rehabilitation Plan* and FERC *Plan* should help ensure that there would not be a substantial increase in erosion potential in the project area in the long term.	Vol 1 5.1.2 Soils pp. 700	This again further generalizes data. With site specific information, one of the RUSLE would provide accurate data and probability of extreme soil loss in the steep, mountainous areas. Furthermore, revegetation in unstable areas remains insufficient to reduce the debris-flow potential once critical, scbrilizing tree roots are removed.	Conduct further studies and provide a plan that addresses these concerns.
22	Construction of ACP and SHP would affect about 7,490 acres of vegetation, including about 6,103 acres of upland forest vegetation (deciduous, coniferous, and mixed). Operation of ACP and MHP would affect about 4,206 acres of vegetation, including about 3,424 acres of upland forest vegetation (deciduous, coniferous, and mixed).	Vol 1. 5.1.1 Vegetation pp. 703	Most of western Nelson is forested, mountainous land and the removal of the trees will increase the susceptibility of landslides and erosion.	Specifically address how many acres of woodland will be lost in Nelson County and what potential impacts that loss would have on slope stability, erosion and water quality.
23	These impacts would be temporary, lasting only while construction is occurring, or short-term, lasting no more than a few years until the	Vol 1. 5.1.5 Wildlife pp. 705	Agree	Conduct further studies and provide a plan that addresses these concerns.

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	preconstruction habitat and vegetation type would be reestablished. Other impacts would be longer term such as the re-establishment of forested habitats, which could take decades.			
24	Although the creation of edge habitat could favor some species, it could also increase the risk of establishment of invasive species, modify microclimate, change vegetation species composition, or increase risk of nest parasitism.	Vol 1 5.1.5 Wildlife pp. 706	Agree.	Conduct further studies and provide a plan that addresses these concerns.
25	Based on our review of the potential impacts on wildlife habitat, we conclude that the primary impact from construction and operation would be on forested habitats crossed by ACP and SHP, including the removal of approximately 6,900 acres of forested vegetation (includes 3,000 acres of permanent impacts), fragmentation of interior forest blocks (see section 4.5.6), and contribution to the introduction and/or spread of invasive species.	Vol 1. 5.1.5 Wildlife pp. 707	Agree	Conduct further studies and provide a plan that addresses these concerns
26	To facilitate pipeline inspection, operation, and maintenance, the entire permanent right-of-way in upland areas would be maintained in an herbaceous/scrub-shrub vegetated state. This maintained right-of-way would be mowed no more than once every 3 years, but a 10-foot-wide strip centered over the pipelines may be mowed annually to facilitate operational surveys.	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	And use by the landowners and general public that are hunting/hiking in these areas. This will provide access and therefore, higher erosion potential PREVENTION IS KEY	Conduct further studies and provide a plan that addresses these concerns
27	Because timber cutters are pending, we have recommended that Atlantic and DTI file their finalized *Timber Mitigation Plans* prior to construction.	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	This should be prior to approval	Do this prior to approval.
28	We reviewed these plans and find them acceptable. However, we are encouraging the owners of each of these residences to provide us comments on the plan	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources	While many landowners are aware of specific intricacies of their land, the history of events, previous work disturbances, etc., most lay-persons are unable to	Conduct further studies and provide a plan that addresses these concerns

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	specific to their property.	pp. 713	adequately assess their land for the potential for catastrophic events and impacts to their health, safety and well-being. This responsibility should be on the applicant to provide adequate and appropriate site-specific investigations to properly characterize the concerns along the route. Unless ACP specifically addresses the landslide potential and what properties these landslides may affect, the landowners do not have the appropriate information (and some may be outside of the easement) to evaluate the effects of the pipeline on their property.	
29	Pipeline construction would result in a greater degree of visual impacts in heavily forested areas with high elevations and steep slope mountainsides. In West Virginia and northeastern Virginia, portions of the API mainline would be constructed in steep, mountainous terrain and require the removal of trees. Restoration and the establishment of vegetation in these areas to pre-utility cover several years to decades and re-planting trees in the right-of-way would be prohibited due to operational and safety concerns. The cleared and maintained permanent right-of-way in heavily forested areas would create a visual contrast more noticeable to viewers and result in a greater degree of visual impacts. Most heavily forested areas associated with the project are located in remote, less populated areas and views of the cleared right-of-way would be intermittent.	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	Nelson County is a populated area with some of the steepest and debris-flow prone sections of the proposed pipeline. Here, impacts will be evident.	Conduct further studies and provide a plan that addresses these concerns
30	ACP would cross scenic byways where mitigation for clearing the construction and operational right-of-way would be determined on a site-specific basis, depending on the assessment of the feature and the expected level of permanent visual impact this may	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	The visual impacts of the bucolic landscape in Nelson County may have significant effects on the rural and agri-tourism of Nelson County.	Accurately assess these areas prior to approval and get stakeholders from the community to provide input.

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	result from the removal for construction and operation of the pipeline facilities.			
31	Consultation with the VDCR, GWNF, and ATC are ongoing and we have recommended that Atlantic provide documentation that the FS concurs with the conclusions and determinations of effect included in its Visual Impact Assessment.	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	These same considerations should be made for the approval of the individual counties that are impacted, including the negative impacts to their tourism.	Require approval of individual counties as well as VDCR, GWNF and ATC.
32	While Atlantic identified some measures that would be implemented as part of its Public Access Plan (part of the draft Visit Plan), site-specific mitigation measures such as a detour have not yet been identified. Therefore, we have recommended that Atlantic should file an evaluation of the feasibility of using bypass or HDD crossings method for all trails and roads on the GWNF, and if a bore or HDD crossing is not feasible, file a site-specific crossing plan that identifies the location(s) of a detour, public notification, signage, and construction of avoiding days of park usage, for each trail and road affected by ACP.	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 716	Agree. That addresses limiting access to the pipeline corridor in the BPS lands, however, there is no consideration for the access and the effects on erosion, etc. on privately held lands.	Provide the same level of detail, analysis and restrictions on privately owned lands as is required for federally owned lands.
33	Construction of ACP and SHP would not have a significant adverse impact on local populations, housing, employment, or the provision of community services.	Vol 1. 5.1.9 Socioeconomics pp. 717	With all of the concerns expressed in this report and lack of site-specific studies, this statement is not accurate.	Correct the statement to reflect the real concerns to health, safety and welfare.
34	We received comments regarding the potential effect of ACP and SHP on property values. We assessed available studies regarding property values and based on the research reviewed, we find no conclusive evidence indicating that natural gas pipeline easements would have a significant negative impact on property values. Although this is not to say that any one property may or may not experience an impact on property value for either the short or long term.	Vol 1. 5.1.9 Socioeconomics pp. 717	If this assessment did not include consideration of those properties that could be effected by a catastrophic debris-flow event, then this statement is misleading.	Conduct further studies that adequately assess and evaluate catastrophic debris-flow events and then reassess the properties with this information.

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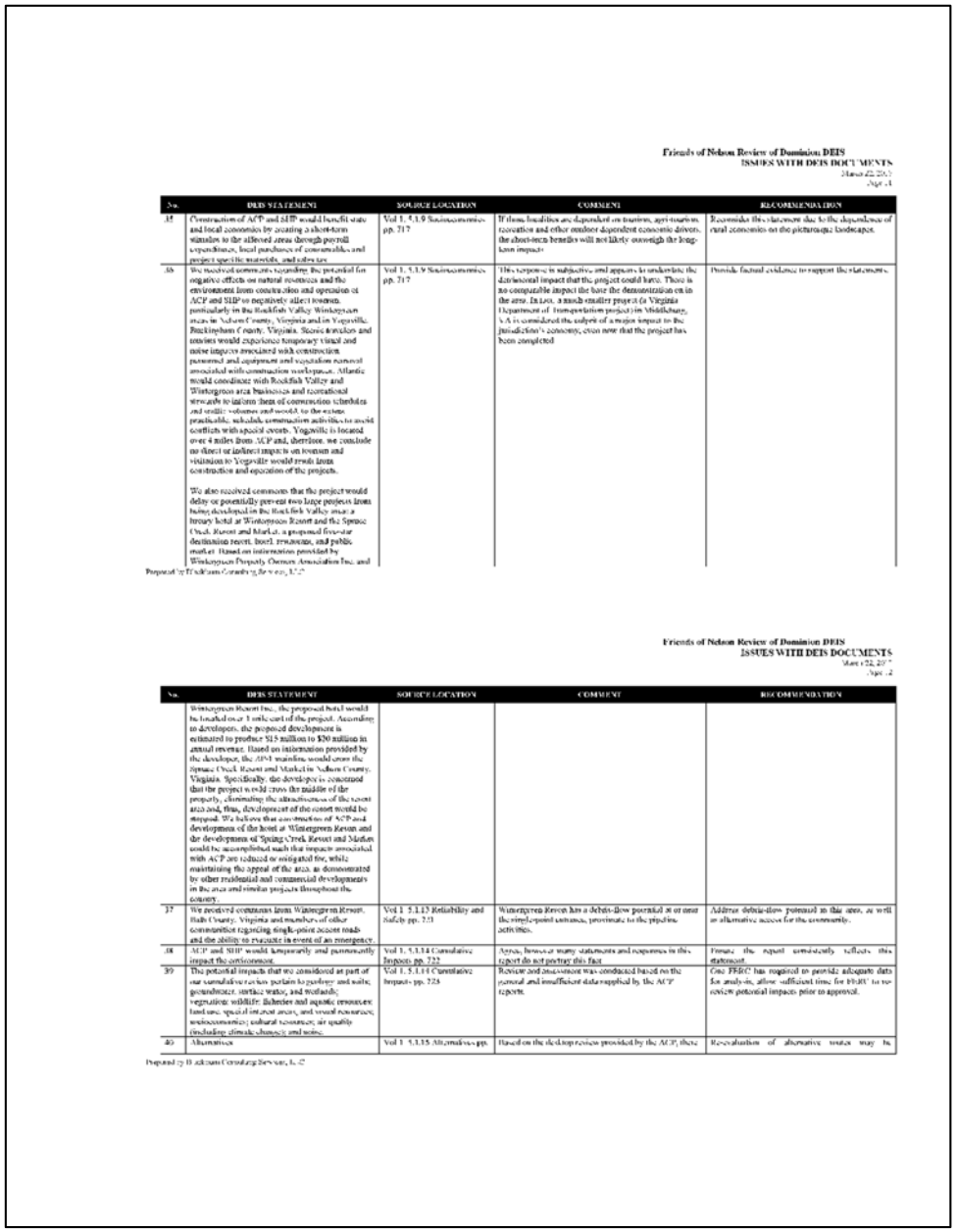

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35	Construction of ACP and SHP would benefit state and local economies by creating a short-term stimulus to the affected areas through payroll expenditures, local purchases of consumables, and project-specific materials, and sales tax	Vol 1. 4.9.9 Socioeconomics pp. 717	If these localities are dependent on tourism, agri-tourism, recreation and other outdoor dependent economic drivers, the short-term benefits will not likely outweigh the long-term impacts	Reconsider this statement due to the dependence of rural economies on the picturesque landscapes.
36	We received comments regarding the potential for negative effects on natural resources and the environment from construction and operation of ACP and SHP to negatively affect tourism, particularly in the Rockfish Valley Wintergreen area in Nelson County, Virginia and in Yogaville, Buckingham County, Virginia. Scenic travelers and tourists would experience temporary visual and noise impacts associated with construction personnel and equipment and vegetation removal associated with construction workspaces. Atlantic would coordinate with Rockfish Valley and Wintergreen area businesses and recreational stewards to inform them of construction schedules and traffic volumes and would, to the extent practicable, schedule construction activities to avoid conflicts with special events. Yogaville is located over 4 miles from ACP and, therefore, we conclude no direct or indirect impacts on tourism and visitation to Yogaville would result from construction and operation of the projects. We also received comments that the project would delay or potentially prevent two large projects from being developed in the Rockfish Valley area: a luxury hotel at Wintergreen Resort and the Spruce Creek Resort and Market, a proposed five-star destination resort, hotel, restaurant, and public market. Based on information provided by Wintergreen Property Owners Association Inc. and	Vol 1. 4.9.9 Socioeconomics pp. 717	This response is subjective and appears to underplay the detrimental impact that the project could have. There is no comparable impact the have the demonstration on in the area. In LOU, a much smaller project (a Virginia Department of Transportation project in Middlebury, VA) is considered the culprit of a major impact to the jurisdiction's economy, even now that the project has been completed	Provide factual evidence to support the statements.

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	Wintergreen Resort Inc., the proposed hotel would be located over 3 mile east of the project. According to developers, the proposed development is estimated to produce $15 million to $20 million in annual revenue. Based on information provided by the developer, the ANP transline would cross the Spruce Creek Resort and Market in Nelson County, Virginia. Specifically, the developer is concerned that the project would cross the middle of the property, eliminating the attractiveness of the resort area and, thus, development of the resort would be stopped. We believe that construction of ACP and development of the hotel at Wintergreen Resort and the development of Spruce Creek Resort and Market could be accomplished such that impacts associated with ACP are reduced or mitigated for, while maintaining the appeal of the area, as demonstrated by other residential and commercial developments in the area and similar projects throughout the country.			
37	We received comments from Wintergreen Resort, Nelson County, Virginia and members of other communities regarding single-point access roads and the ability to evacuate in event of an emergency.	Vol 1. 5.1.13 Reliability and Safety pp. 773	Wintergreen Resort has a debris-flow potential at or near the virtual-point entrance, proximate to the pipeline activities.	Address debris-flow potential in this area, as well as alternative access for the community.
38	ACP and SHP would temporarily and permanently impact the environment.	Vol 1. 5.1.14 Cumulative Impacts pp. 722	Agree, however many statements and responses in this report do not portray this fact	Ensure the report consistently reflects this statement.
39	The potential impacts that we considered as part of our cumulative review pertain to geology and soils; groundwater; surface water, and wetlands; vegetation; wildlife; fisheries and aquatic resources; land use, special interest areas, and visual resources; socioeconomics; cultural resources; air quality (including climate change); and noise.	Vol 1. 5.1.14 Cumulative Impacts pp. 728	Review and assessment was conducted based on the general and insufficient data supplied by the ACP reports.	One FERC has required to provide adequate data for analysis, allow sufficient time for FERC to review potential impacts prior to approval.
40	Alternatives	Vol 1. 3.3.15 Alternatives pp.	Based on the design review provided by the ACP, there	Reevaluation of alternative routes may be

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		723-724	does not appear to be a significant difference between the potential alternatives and the currently proposed pipeline corridor.	appropriate once better data is available.
41	b. justify each modification relative to site-specific conditions	Vol 1. 5.2 FERC Staff's Recommended Mitigation pp. 724	We believe this is one of the most critical points, and one that cannot be achieved by relying on the existing available data.	Conduct further studies and provide a plan that addresses these concerns
42	17. Prior to construction	Vol 1. 5.2 FERC Staff's Recommended Mitigation pp. 729	This should be "Prior to approval"	Revise to read "prior to approval"
43	31. Prior to the close of the **draft** EIS **comment period**, Atlantic shall identify any specific construction, restoration, and/or operation mitigation measures identified by the MNF that would be implemented to promote compatibility with the restoration and management of disjunct red spruce and spruce-hardwood communities. (Section 4.4.6.1) *Conclusion and Recommendations* 5-34 32. Prior to the close of **the draft EIS comment period**, Atlantic shall file with the Secretary and the FS a revised BE that describes vegetation communities and construction and operation impacts according to the protocols and classification systems requested by the GWNF, and based on vegetation data collected during surveys. (Section 4.4.6.2) 33. Prior to construction, Atlantic shall file with the Secretary and the FS a revised *Restoration and Rehabilitation Plan* and *COM Plan*, that incorporates the seed mixes and application techniques, developed in coordination with the MNF and GWNF, that will be used for restoration of construction workspaces on NFS lands. (Section 5.4.8) 34. Prior to the close of **the draft** EIS **comment**	Vol 1. 5.3 FERC Staff's Recommended Mitigation pp. 730-731	We believe that any study that is valuable for the appropriate assessment of the ACP through those areas controlled by the Forest Service, state agencies or otherwise, are also critical for those privately-owned and typically more populated areas as well.	Conduct further studies and provide a plan that addresses these concerns

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	period, Atlantic shall file with the Secretary, and provide to the FWS, FS, WVDNR, and VDGIF, a revised *Karst Mitigation Plan*, developed in coordination with the appropriate agencies that takes into account unknown underground features, porosity, and connectivity of these subterranean systems, and the potential implications to subterranean obligate species. Conservation measures included in the revised *Karst Mitigation Plan* shall be designed to appropriately address these potential impacts. (Section 4.5.2.4)			
44	Discuss how the creation of forest edge or fragmentation would affect habitat and wildlife, including potential impacts on federally listed threatened and endangered species and migratory birds. Describe measures that Atlantic and DTI will implement to avoid, minimize, or mitigate impacts on interior/core forest habitat. (Section 4.5.6)	Vol 1. 5.2 FERC Staff's Recommended Mitigation pp. 732	Discuss in detail how clearing for the ACP will affect the potential for landslides and specifically where those areas are and what the potential extent of the damage might be	Conduct further studies and provide a plan that addresses these concerns
45	NOTE: Applicable road construction specifications will be attached pending additional discussion with USFS.	Vol II. Appendix G 2.1.1.4 Access pp. 26	What is appropriate within the USFS lands is also appropriate on privately-owned lands.	Make specifications applicable to all land areas.
46	Locations where blasting may be required on NFS lands are identified in the Blasting Plan.	Vol II. Appendix G 2.1.4 Trenching pp. 29	If it's important on NFS lands, than it's important on private lands	This should also be done for private lands as well so that all owners near those areas are identified and notified before this pipeline is approved
47	Additionally, excavated rock may be buried within the limits of the construction right-of-way, crushed with a rock pulverizer and incorporated into fill, or used as gravel to upgrade access roads. Excavated material not required for backfill will be removed and disposed of at approved upland disposal sites.	Vol II. Appendix G 2.1.6 Lowering-in and Backfilling pp. 30	1-Burying rock will disturb more area and create a sump for water to accumulate in thereby providing more weight and lubrication in areas that may already be prone to slippage. 2-excavated material taken to other site should be mapped and documented so that future "unsuspecting" landowners do not build on uncontrolled fill. This does happen and can cause foundation failures.	Develop a more sustainable plan for the excavated rock.

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48	No water impoundment structures are proposed to be located on NFS lands.	Vol II. Appendix G 2.1.7 Hydraulic Testing pp. 31	Are there water impoundment structures proposed in Nelson County or other privately owned areas?	Identify and provide design for any water impoundment structures along the pipeline. Do not address only NFS lands.
49	Note: Does USFS designate a Fire AO that is different from the overall AO?	Vol II. Appendix G 5.3.2 ACP Project Responsibilities pp. 64	What is appropriate on USFS lands should also be executed on privately-owned lands	What is appropriate on USFS lands should also be executed on privately-owned lands
50	The FSOs will contact the USFS _____	Vol II. Appendix G 5.5 Fire Danger Ratings pp. 66	? What is the blank?	
51	If blasting occurs within 500 feet of an identified water well,	Vol II. Appendix G 6.7.1 Protection of Aboveground and Underground Structures pp. 71	The susceptibility of the wells is based on the geology.	A hydrogeologist should be consulted for all of these instances.
52	If blasting occurs within 150 feet of aboveground structures,	Vol II. Appendix G 6.7.1 Protection of Aboveground and Underground Structures pp. 75	Too close.	Recommend a minimum of 500'
53	An Order 1 Soil Survey (Survey) was performed between May 9 and June 22, 2016 along the available sections of the approximately 21.4-mile portion the route between MP 47 and MP 115. The Survey included approximately 5.2 miles of the route within the Marlinton Ranger District in the MNF, and 15 miles in the Warm Springs and North River Districts in the GWNF. Due to access restrictions associated with cultural resource clearance, a full Survey was not completed in an approximately 1.2 mile section of the route located near MP 155 and MP 156 in the GWNF Pedlar Ranger District.	Vol II. Appendix G 8.2 Soils pp. 88	This needs to be completed for the steep portions of Nelson County. This area is known to have unstable landforms particularly when combined with construction, a big storm event or both.	Conduct further studies and provide a plan that addresses these concerns
54	Atlantic developed and implemented the Slip Avoidance, Identification, Prevention, and Remediation - Policy and Procedure (SAIPR) in August of 2015 to avoid, minimize, and mitigate potential landslide issues in slip prone areas prior to,	Vol II. Appendix G 8.4 Critical Areas pp. 89	Do not see SAIPR Attachment (C)	Include attachment

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	during, and after construction. The SAIPR (Attachment C) includes considerations for slips associated with pipeline construction during routing, engineering design, preconstruction planning, construction, and post construction.			
55	Atlantic recognizes the increased risk in slips associated with pipeline construction particularly while traversing steep slopes.	Vol II. Appendix G 8.4.1 Steep Terrain pp. 89	Agree	Conduct further studies and provide a plan that addresses these concerns
56	complete a geotechnical analysis to evaluate the causes of past slope failures along its pipeline rights-of-way; identify procedures and measures to identify, prevent, contain, and remediate slope failures; and develop and implement policy and procedures to address slip prone areas.	Vol II. Appendix G 8.4.1 Steep Terrain pp. 90	These need to be done before approving the pipeline alignment. Avoidance is the only way to truly reduce the risk of construction induced failures!	Conduct further studies and provide a plan that addresses these concerns
57	This section is pending additional input and recommendations from the USFS regarding seed mixes, soil amendments, and cultural practices.	Vol II. Appendix G 10.3.3 Riparian Restoration pp. 154	What is appropriate on USFS lands should also be executed on privately-owned lands	What is appropriate on USFS lands should also be executed on privately-owned lands
58	This section is pending additional input and recommendations from the USFS regarding seed mixes, soil amendments, and cultural practices.	Vol II. Appendix G 10.3.4 Wetland Restoration pp. 155	What is appropriate on USFS lands should also be executed on privately-owned lands	What is appropriate on USFS lands should also be executed on privately-owned lands
59	2.Will avoid the removal of mature trees and landscaping within the construction work area, unless necessary for safe operation of equipment, or as specified in the landowner agreements	Vol III. Appendix J Intro pp. 8	Trees that are currently in wooded areas and then have construction around them will be highly susceptible to mortality. This may take 5-10 years but is a common occurrence, especially with older/mature trees.	Expand impact assessment to consider the damage to critical root zones of large trees that are to remain.
60	4. During landowner negotiations, identify location of septic system and avoid or develop a replacement plan with landowner during construction.	Vol III. Appendix J Intro pp. 8	Reserve areas are also important.	Identify and avoid reserve areas so that the homeowner has that area when the original septic field fails.
61	Revised Universal Soil Loss Equation	Vol III. Appendix P RUSLE pp. 276	Why was the analysis only done for Bath County?	Analyze all privately owned areas, including Nelson County.
62	Recognizing that the location of slope failures can	Attachment C. 2.0	Absolutely	Conduct further studies and provide a plan that

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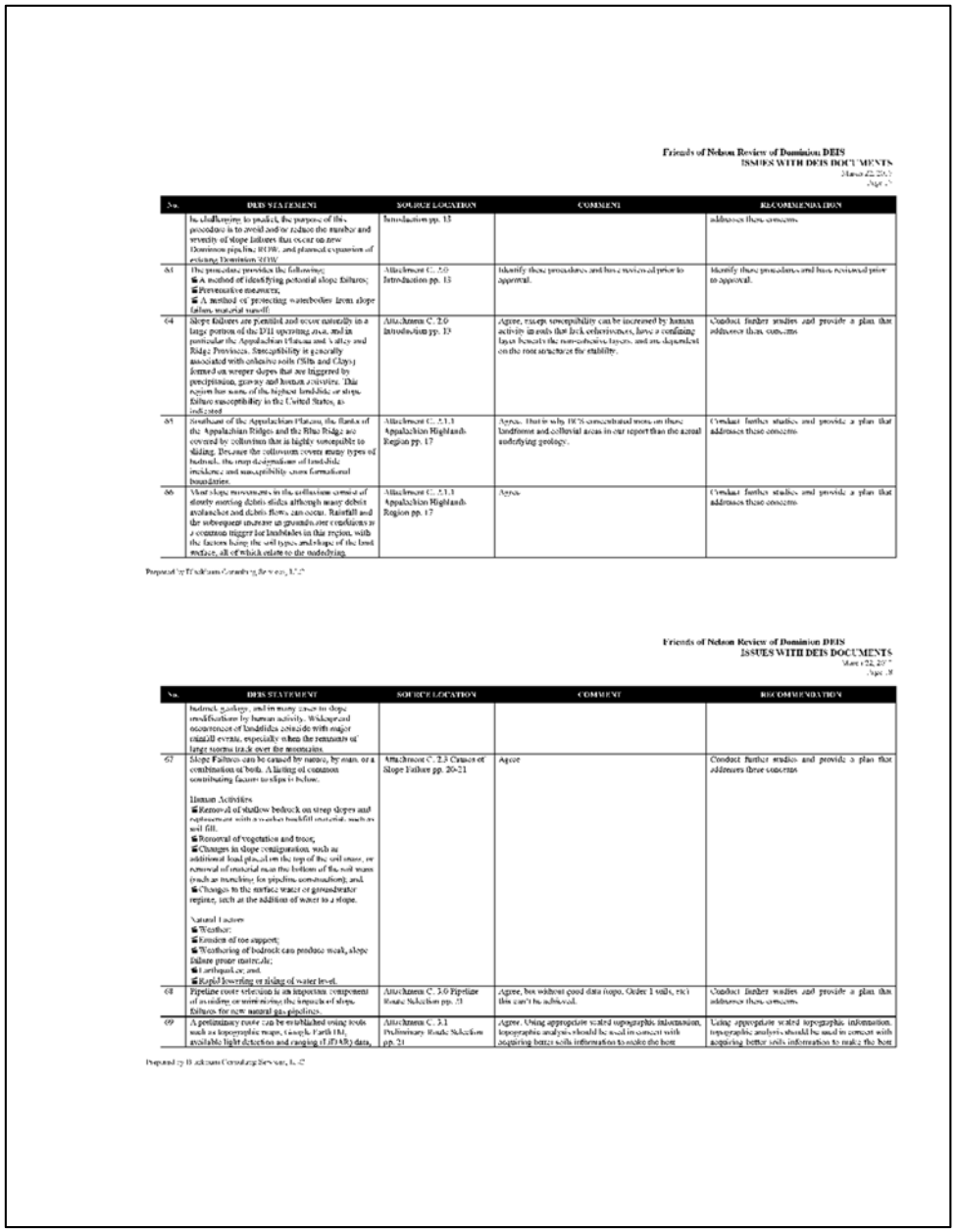

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	In challenging to predict the purpose of this procedure is to avoid and/or reduce the number and severity of slope failures that occur on new Dominion pipeline ROW, and planned expansion of existing Dominion ROW	Introduction pp. 13		addresses these concerns.
63	The procedure provides the following: ■ A method of identifying potential slope failures; ■ Preventative measures; ■ A method of protecting waterbodies from slope failure material runoff;	Attachment C. 2.0 Introduction pp. 13	Identify these procedures and have reviewed prior to approval.	Identify these procedures and have reviewed prior to approval.
64	Slope failures are plentiful and occur naturally in a large portion of the DTI upstream area, and in particular the Appalachian Plateau and Valley and Ridge Provinces. Susceptibility is generally associated with cohesive soils (Silts and Clays) formed on steeper slopes that are triggered by precipitation, runway and human activities. This region has some of the highest landslide or slope failure susceptibility in the United States, as indicated	Attachment C. 2.0 Introduction pp. 13	Agree, risk of susceptibility can be increased by human activity in soils that lack cohesiveness, have a confining layer beneath the non-cohesive layers, and are dependent on the root structure for stability.	Conduct further studies and provide a plan that addresses these concerns
65	Southeast of the Appalachian Plateau, the flanks of the Appalachian Ridges and the Blue Ridge are covered by colluvium that is highly susceptible to sliding. Because the colluvium covers many types of bedrock, the steep delineations of landslide incidence and susceptibility cross formational boundaries.	Attachment C. 5.1.1 Appalachian Highlands Region pp. 17	Agree. That is why DCS concentrated more on these landforms and colluvial areas in our report than the areal underlying geology.	Conduct further studies and provide a plan that addresses these concerns
66	Most slope movements in the colluvium consist of slowly moving debris slides although many debris avalanches and debris flows can occur. Rainfall and the subsequent increase in groundwater conditions is a common trigger for landslides in this region, with the factors being the soil types and slope of the land surface, all of which relate to the underlying	Attachment C. 5.1.1 Appalachian Highlands Region pp. 17	Agree.	Conduct further studies and provide a plan that addresses these concerns

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	bedrock geology, and in many cases to slope modification by human activity. Widespread occurrences of landslides coincide with major rainfall events, especially when the remnants of large storms track over the mountains.			
67	Slope Failures can be caused by nature, by man, or a combination of both. A listing of common contributing factors to slips is below. Human Activities ■ Removal of shallow bedrock on steep slopes and replacement with a weaker backfill material, such as soil fill; ■ Removal of vegetation and trees; ■ Changes in slope configuration, such as additional load placed on the top of the soil mass, or removal of material near the bottom of the soil mass (such as trenching for pipeline construction); and ■ Changes to the surface water or groundwater regime, such as the addition of water to a slope. Natural Factors ■ Weather; ■ Erosion of toe support; ■ Weathering of bedrock can produce weak, slope failure prone materials; ■ Earthquakes; and, ■ Rapid lowering or rising of water level.	Attachment C. 2.3 Causes of Slope Failure pp. 20-21	Agree	Conduct further studies and provide a plan that addresses these concerns
68	Pipeline route selection is an important component of avoiding or minimizing the impacts of slope failures for new natural gas pipelines.	Attachment C. 3.0 Pipeline Route Selection pp. 21	Agree, but without good data maps, Order 1 soils, this can't be achieved.	Conduct further studies and provide a plan that addresses these concerns.
69	A preliminary route can be established using tools such as topographic maps, Google Earth (tm), available light detection and ranging (LIDAR) data,	Attachment C. 3.1 Preliminary Route Selection pp. 21	Agree. Using appropriate scaled topographic information, topographic analysis should be used in concert with acquiring better soils information to make the best	Using appropriate scaled topographic information, topographic analysis should be used in concert with acquiring better soils information to make the best

Prepared by Hickman Consulting Services, LLC

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CO118 – Friends of Nelson and Friends of Wintergreen (cont'd)

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	and other computer mapping software.		decisions.	decisions.
70	During preliminary route layout, care must be taken to traverse slopes perpendicular to topographic contours, and to avoid traversing slopes greater than 30 degrees (58 percent) to the maximum extent practicable. If traversing slopes of greater than 30 degrees (58 percent) cannot be avoided, it must be minimized, and these areas will be a focus of the desktop study and further evaluation during the field reconnaissance process	Attachment C. 3.1 Preliminary Route Selection pp. 21	Agree. However, the angle of repose is not a static value of 30 degrees (58 percent) and is only one of several factors influencing slope stability.	The field reconnaissance process should happen long before this alignment is approved.
71	The minimum width of a study corridor during the desktop review phase is 1000 feet, but may be expanded if necessary based on the project specifics. Geographic information system (GIS) is the most efficient method to conduct the desktop study. A project-specific GIS database can be developed using various information sources including, but not limited to those listed below. Additional information in the GIS includes topography, residential and commercial structures, land use, geology, streams, wetlands, cultural resource sites, cultural features such as roads, railroads, public lands and cemeteries to be used during the desktop study to refine the pipeline route prior to beginning the field reconnaissance. Potential access roads must be identified during the desktop study for further evaluation during the field reconnaissance.	Attachment C. 3.2 Desktop Study pp. 22	The desktop study is a minimum of a 1000' corridor. We argue that the [recommended] topographic analysis and Order 1 Soil Survey should have a similar corridor of analysis.	Conduct further studies and provide a plan that addresses these concerns
72	The United States Geological Survey (USGS) maintains publically available GIS data for a digital compilation of landslide overview mapping of the conterminous United States at http://pubs.usgs.gov/of/1997/ofr-97-0289/ . This dataset consists of polygons enclosing areas of landslide incidence and susceptibility for the	Attachment C. 3.2.1 Existing Landslide Maps and Data pp. 22-23	Again, this is general information, but even so, it does not appear to have been used in the analysis of the pipeline location. There is also site-specific mapping of debris-flows, such as the 1969 storm event, available from USGS that should be used for Nelson County.	Use all data available.

Prepared by Blackburn Consulting Services, LLC

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	conterminous United States. The purpose of this dataset is to give the user a general indication of areas that may be susceptible to landslides, and is not suitable for local planning or site selection without further investigation on the ground.			
73	State specific information other than from USGS as discussed above are not available for Maryland, Ohio, New York, Pennsylvania or Virginia.	Attachment C. 3.2.1 Existing Landslide Maps and Data pp. 23	This is not an accurate statement. Virginia has many debris flow maps and site specific studies developed by USGS and Nelson County is one of those.	Perform the necessary research to adequately catalog existing information.
74	The maps must be used in the desktop study to identify areas of past slope failures, the slopes at the highest risk for slope failures, and the route adjusted to the extent practicable to avoid the highest hazard areas.	Attachment C. 3.2.1 Existing Landslide Maps and Data pp. 24	Agree, however all available data does not appear to have been used in the desktop review. Furthermore, the field reconnaissance and verification of the desktop results should occur prior to approval.	Use all available data and conduct field reviews prior to approval.
75	The DTI Project Team/field engineer may select a slope angle that is shallower than 30 degrees on a project-specific basis.	Attachment C. 3.2.2 Define Slopes of Greater Than 30 Degrees pp. 24	Many of the recent and historic debris flows in Nelson County are on slopes of less than 30 degrees or 58%. To rely strictly on the angle of repose is inconsistent with the other factors contributing to debris flows that are identified both in the DEIS and many reports.	The identification of steep slopes should be done prior to approval based on contemporary topographic information with final contour intervals no greater 4 feet. Identification of these areas should not be left to a field engineer to subjectively determine if the 30 degree (or 58% slope) threshold should be reduced.
76	The DTI Project Team/field engineer will review the soil survey information related to soil landscapes, soil formation, soil limitations for various land uses, and properties of the soils in the survey areas. In particular, information related to soil origin, slope steepness, drainage characteristics, typical soil profile with layer thickness, approximate depth to bedrock, and slope failure prone soils can be obtained from the soil survey.	Attachment C. 3.2.3 USDA Natural Resource Conservation Service Soil Surveys pp. 24	Again, this is improper use of the web soil survey. This information is inadequate for this study! The soil scientists that mapped Nelson County specifically, stated to us that the majority of colluvial soils and those with high debris flow potential are specifically NOT shown on these maps. Furthermore, unless the DTI Project Team/ field engineer is a Licensed Professional Soil Scientist with experience with soil mapping in the Blue Ridge, they are likely incapable of accurately evaluating the soils maps and determining failure-prone soils.	Conduct further studies and provide a plan that addresses these concerns PRIOR TO APPROVAL.
77	Therefore, soil surveys provide a broad overview of	Attachment C. 3.2.3 USDA	Agreed.	Conduct an Order 1 soil survey for the entire route.

Prepared by Blackburn Consulting Services, LLC

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CO118 – Friends of Nelson and Friends of Wintergreen (cont'd)

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	soil conditions but are not designed for site specific evaluations.	Natural Resource Conservation Service Soil Surveys pp. 24		
78	Where LiDAR data is unavailable for purchase, it may be deemed necessary to obtain project-specific LiDAR data by flying the route.	Attachment C. 3.2.4 Light Detection and Ranging (LiDAR) pp. 25	Agreed	This should be done prior to approval and not at the subjective determination of the DTI Project Team field engineer.
79	LiDAR data is analyzed by developing a digital terrain model (DTM) that can be imported to various computer aided drafting software suites. The DTM can be imported into the project GIS during the desktop study and used to identify past slope failures, steep slopes and other terrain features useful in routing the pipeline.	Attachment C. 3.2.4 Light Detection and Ranging (LiDAR) pp. 25	Agreed	Therefore this is important information to have PRIOR TO APPROVAL.
80	Following data collection through the desktop study and field reconnaissance, a desktop slope failure risk assessment will be performed using the Desktop Slope Failure Risk Assessment Matrix included in Appendix A for new pipeline projects.	Attachment C. 3.4 Desktop Slope Failure Risk Assessment pp. 27	Understanding that better soil and topographic data is realistically required for a legitimate evaluation of susceptibility to landslides, please show us where this was done for Nelson County and what additional soil data, detailed topography and/or LiDAR data was used in this analysis??	Conduct further studies and provide a plan that addresses these concerns
81	Slope failures and slope failure prone areas must be included in the project plans. The following items must be included on the Stormwater Pollution Prevention Plans (SWPPP) and the Erosion and Sediment (E&S) control plans: ▪ Slope failure areas having high risk, as determined in Section 3.4; ▪ Existing slope failures; and, ▪ Slopes steeper than 30 degrees (58 percent).	Attachment C. 4.3 Document Slope Failure Areas on Project Plans pp. 30	Please provide the map of all existing slope failures. We assume that means recent and historic failures as these, according to the experts at USGS, often reoccur in the same areas.	Provide map.
82	The project plans and specifications must include provisions for additional subsurface drainage on slopes greater than 30 degrees (58 percent). Include callouts and details in the E&S plans for location and type of drainage.	Attachment C. 4.4 Include Additional Drainage pp. 30	Please describe how this will be done without disturbing more area of the susceptible soil	Provide site-specific plans and techniques.
83	These locations will likely include areas with slopes steeper than 30 degrees (58 percent), or locations requiring pre-emptive repair of an existing slope failure in the proposed pipeline corridor	Attachment C. 4.5 Engineered Details pp. 30	Engineers are stuck on this slope range when it is only one factor and based on our experience probably not the most important factor that influences slope failure.	Not rely on only the factor of slope to determine these areas that need to be avoided or additional mitigation for debris flows.

Prepared by [illegible] Consulting Services, LLC

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84	In the event a slope failure is documented during an inspection, the following steps must be followed. Each step is discussed in detail in the following subsections and summarized in Table 2.	Attachment C. 6.2 Responding to Slope Failures pp. 42	Includes no mention as to evaluating the number and location people or property downslope that may be impacted or killed during a major storm event that without the impact of construction may not have happened. If during or after the pipeline is constructed, failure occurs and it can be tied to the removal of vegetation or land manipulation during construction who will be responsible for damage to personal, federal or state property or for loss of life?	Be honest about the potential impacts and the plans if a catastrophic failure do occur.
85	▪ Name of observer; ▪ Date; ▪ Slope failure location, including latitude and longitude; ▪ Slope failure dimensions; ▪ Site photographs; ▪ Site sketch; ▪ Evidence of preexisting slope failures; ▪ Presence of surface water or groundwater; ▪ Estimate of slope steepness; ▪ Estimate of slope failure type (i.e., rotational, translational, earthflow, etc.); and ▪ Slope failure priority based on Slope Failure Priority Guidance (Appendix D).	Attachment C. 6.2.3 Gather Data pp. 42	Again what about damages to adjacent property or persons?	Address adjacent property or persons.
86	Pipeline crossing the slope (sidehilling), but will likely be installed below top of bedrock surface	Attachment C. Appendix A Desktop Slope Failure Risk Assessment pp. 49	This practice disturbs more areas and soil and increased the susceptibility to failure.	Avoid sidehilling in Nelson County.
87	Brow Ditch Detail	Attachment C. Appendix B Select Typicals pp. 57	Is the illustration showing natural soils in place or fill?	Clarify illustration.
88	Trench Drain Detail (Trench Drain)	Attachment C. Appendix B Select Typicals pp. 59	Any time you install "Trench drains in the mountain soils/colluvial material you cause more disruption to the soil structure and therefore to the stability of the	Clarify that these are not appropriate in areas [once appropriately identified] a failure prone / debris-flow areas

Prepared by [illegible] Consulting Services, LLC

COMPANIES/ORGANIZATIONS COMMENTS

CO118 – Friends of Nelson and Friends of Wintergreen (cont'd)

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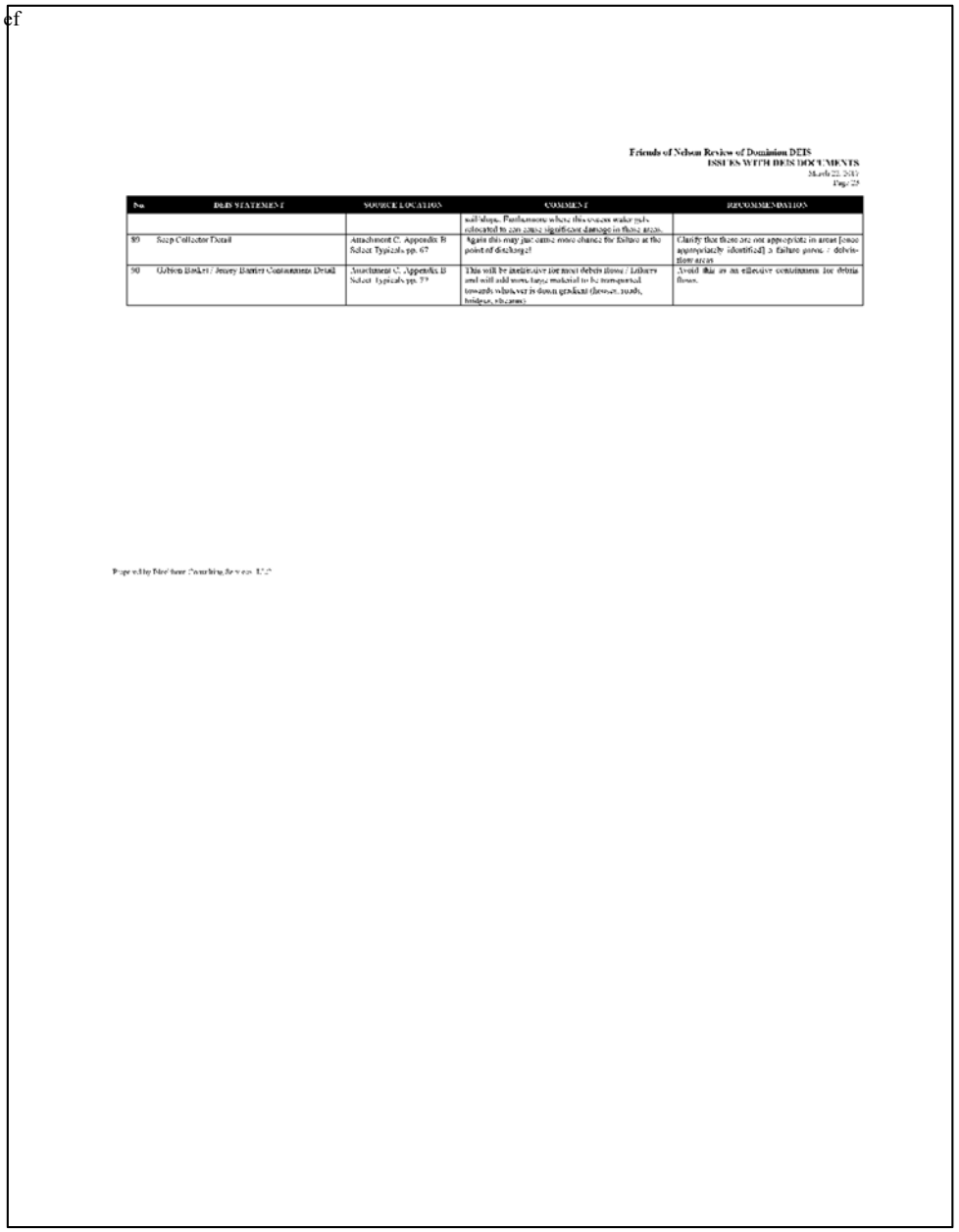

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			soil slips. Furthermore, where this occurs water will be relocated to can cause significant damage in these areas.	
89	Seep Collector Detail	Attachment C. Appendix B Select Typicals pp. 67	Again this may just cause more chance for failure at the point of discharge!	Clarify that these are not appropriate in areas [areas appropriately identified] a failure zones / debris flow areas
90	Gabion Basket / Jersey Barrier Containment Detail	Attachment C. Appendix B Select Typicals pp. 77	This will be ineffective for most debris flows / Lithaca and will add more large material to be transported towards whichever is down gradient (houses, roads, bridges, etc.etc)	Avoid this as an effective containment for debris flows.

Prepared by Blue Stone Consulting Services, LLC

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CO119 – Friends of Nelson

April 2, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

RE: Comments of Friends of Nelson and Joyce Burton, Intervenors

Re: The Draft Environmental Impact Statement for the Atlantic Coast Pipeline and Supply Header Project (Docket Nos. CP15-554-000, CP15-554-001, and CP15-555-000. FERC/EIS- 0274D)

Dear Mr. Davis and Members of the Commission,

Attached please find comments on the Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline that was prepared by Dr. W. Lee Daniels on behalf of Friends of Nelson.

CO119-1 Friends of Nelson contracted with Dr. Daniels to review the DEIS because we are concerned that over-reliance on ACP's errant research, incomplete plan submissions and unsubstantiated assertions have led FERC to inaccurate conclusions regarding the significance of the environmental impacts of the proposed project. Among the items detailed in his comments are concerns that the ACP's plan as presented to FERC:

1) does not accurately represent the extent of or adequately address the issue of disposal of excess spoil
2) "significantly understate(s)" the risks posed by acid forming materials (AFM) in the soils along the pipeline route
3) offers "totally inadequate" procedures to mitigate AFMs, and relies on identification/assessment methods that are "generally not applicable" to the stated scenarios
4) uses protocols for private forested lands that do not meet recognized best management practices and will compromise long-term reclamation success
5) understates the adverse impacts of the proposed soil disturbances on farmland productivity and does not provide adequate protocols for their protection and restoration
6) repeatedly demonstrates a "negligible understanding" of the science and techniques of soil restoration/rehabilitation

Z-2441

CO119-1 Comment noted. Section 4.2.3 has been revised to discuss disposal of excess rock and spoil. Section 4.1.4.4 discusses acid-producing rock and soils. See also the response to comment CO6-1.

CO119-1 (cont'd)

Especially given the thousands of pages of additional and ever-changing supplemental submissions that ACP has entered into the docket since the release of the DEIS, it is impossible for a small, non-profit group of impacted landowners and citizen volunteers to thoroughly catalogue and substantiate (or pay qualified professionals like Dr. Daniels to thoroughly catalogue and substantiate) ALL of the deficiencies in ACP's plans. However, it is our hope that Dr. Daniels' comments, as well as others entered into the docket by Friends of Nelson, hundreds of other stakeholders, and especially the bellwether work done by the staff of the USFS, will drive home the fact that **the cited inadequacies in the ACP's plans are not isolated aberrations, but rather constitute an underlying pattern** which should compel FERC to reconsider their conclusions about the extent of the adverse impacts that this project will cause, and **promptly rescind this hopelessly deficient DEIS.**

Sincerely,

Joyce Burton

TerraScience LLC Environmental Consulting and Training

909 Allendale Court, Blacksburg, VA 24060 540-230-2848

Evaluation of Restoration and Rehabilitation Plans for the Atlantic Coast Pipeline Project

By

W. Lee Daniels, Ph.D.

April 3, 2017

Introduction and Background

I (W. Lee Daniels) have prepared this report at the request of the Friends of Nelson County. I have performed this work as an independent consultant (as TerraScience LLC) with the prior approval of my employer, Virginia Tech. Therefore, all opinions expressed herein reflect my personal views and scientific opinion on these matters and in no way reflect those of the university, my department, or any other Virginia Tech employees.

For this report, I was asked to review the original December 2016 Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline Project (ACP) and subsequent revisions and submittals up through January 27, 2017. I was also asked to review a related consulting report prepared by Mr. Alex Blackburn entitled *Report Analysis and Field Verification of Soil and Geologic Concerns with the Atlantic Coast Pipeline (ACP) in Nelson County, VA.*

I have spent over thirty years leading a major research and outreach program at Virginia Tech focused on the rehabilitation of drastically disturbed lands including those affected by mining, highway corridor development, urbanization, waste application, wetland creation, and dredge spoil management. My primary focus has been the reclamation of lands disturbed by surface mining and on the recognition and remediation of acid-forming materials. Much of my work has concentrated on understanding and predicting the effects of the weathering of various geologic materials on subsequent reconstructed soil properties and local water quality impacts. I have spent decades developing and implementing novel soil reconstruction and revegetation strategies for the mining industry. I was also actively involved with VDOT's right-of-way (ROW) revegetation and acid forming materials management protocol development for over 15 years. Details on these collective programs and full reports and publications related to issues discussed in this report are available at http://landrehab.org/.

During my review of the full suite of documents provided by the ACP project to date, I found dozens of issues that potentially warrant a further detailed response. However, in this report I am focusing on those that I feel are most important and relevant to my core areas of expertise and that are most applicable to issues of importance for the Friends of Nelson County.

Detailed Summary of Critical Issues and Deficiencies

Failure to account for net swell of backfill materials and associated issues

First and foremost, the existing documents provided to date for the ACP fail to recognize the fact that the routine trenching and backfill operations will generate a significant amount of "excess spoil material" that will not fit back into the trench and will need to be managed within the active ROW or placed off ROW into stable fills. As mentioned above, I have worked with the rehabilitation of coal mine impacts for over thirty years and the routine industry assumption is for approximately 20 to 30% "swell" of their spoil materials that then generates the necessity for excess spoil fills. These materials are typically placed into stable head of valley fill configurations which frequently generate associated discharge water quality concerns (principally total dissolved solids – TDS; Daniels et al., 2016). Even with a conservative assumption of a 10 foot wide x 8 foot deep trench, the total bank (*in situ*) volume of excavated materials will exceed 15,000 CY per linear mile. Once the pipe and any underlayment or "padding" material are returned to the trench, the volume available for backfill will be reduced by 10% or more. Given even a low estimate of net swell (e.g. 20%), this indicates that 5000 CY or more of material will need to be disposed of in some manner other than "return to original grade" per linear mile.

The original December 2016 DEIS document (p. 4-36) does discuss the need to manage "excess spoil", but only on narrow ridgetop locales. Strikingly, the geotechnical study materials provided in the January 10 Appendix C submission (in the 12/22/16 cover letter) clearly state that "*Geosyntec* (the Dominion consultant) *has not developed a detailed mass-balance based grading design and the profile and cross-sections remain illustrative*". My personal review of the ACP documents has not uncovered evidence that cut/fill mass balance calculations have been included in the current designs. If in fact this fundamental civil engineering task has not been performed for the entire pipeline corridor, this is a critical deficiency that affects almost all aspects of the restoration and rehabilitation planning process.

Unless excess spoils are hauled completely away from the ROW, they would most likely be managed by either (A) mounding them up over the backfilled trench or (b) uniformly spreading them out over the cleared ROW. Another option would be to (C) construct above-grade fill terraces parallel to the slope. Options A and C will lead to areas of much higher slopes than pre-disturbance landforms while option B will lead to a much larger zone of heavy soil disturbance and greatly complicate soil restoration operations. All options will increase erosion hazard due to extent of disturbance and more exposed bare soils for some period of time. If the materials are hauled completely out of the ROW, they will need to be placed into stable fill configurations which will increase the overall disturbance footprint and potentially pose local water quality discharge concerns. Handling these excess spoil materials will be particularly difficult on the very steep landforms found in Nelson County and the appropriate location and development of off-site fills could greatly expand the overall disturbance footprint.

Failure to adequately recognize and treat acid forming materials

While the original DEIS (December 2016) document does recognize (in text on p. 4-21 and the table on p. 4-31) that acid forming materials (AFM) will be encountered along the pipeline corridor, the level of risk is significantly understated and the mitigation measures proposed on page 4-32 are insufficient to manage the risk. The AFM risk categorization given in Table 4.1.4-1 (for Virginia) is based on research performed by my group at Virginia Tech (Orndorff and Daniels, 2004) but the report authors obviously did not read the underlying documents sufficiently to adequately understand them. While the authors have recognized that several formations in Virginia do have well-defined and documented AFM risk, they have missed the fact that locally occurring AFM materials can and do occur throughout the Blue Ridge and Piedmont geologic provinces as well.

First of all, while not a specific risk to Nelson County, the most extensive exposure to AFM in western Virginia will be associated with the shales from the Millboro and Needmore formations. These shales tend to be quite variable in their reactive sulfur (S in pyrite – FeS_2) content, but levels as high as 2% or more have been documented by my research program and by a recent study associated with the widening of U.S. Route 220 in western Botetourt County. In the Blue Ridge materials around and in Nelson County, the Ashe formation is noted to be locally high in S (e.g. > 1%), but there are also numerous other minor occurrences of AFM that are associated with long dormant (and frequently unmapped) faults that often are associated with former gold and metal mining activity (Sweet & Lovett, 1985). Reactive S content of the Ashe formation materials are highly variable, but those associated with gold and other metal sulfide assemblages can be much higher. It is also important to note that the pipeline corridor passes through a zone of extensive sulfide enrichment and associated gold and metal mining in the western Piedmont (Sweet & Lovett, 1985) that is not recognized at all in the ACP documents.

To put these S levels into an appropriate management perspective, 1% reactive S will produce enough sulfuric acid to require 32 tons of agricultural lime requirement per 1000 tons of excavated materials. This is also equivalent to 32 tons of agricultural lime per acre incorporated six inches deep. Once these materials are excavated and exposed to surface oxygen levels and rainfall, the oxidation reactions occur quickly and materials that are typically pH 6.0 to 7.5 *in situ* before excavation can fall to pH levels less than 3.5 in weeks to months following exposure. This kills existing vegetation, prevents revegetation/restoration, and leads to significant local groundwater and surface water runoff quality issues, particularly due to high levels of dissolved metals (Al, Fe, Mn and sometimes As and Se) and TDS. In addition to their negative impacts on soils, water quality and vegetation, AFM also directly attack concrete, steel and iron materials that are allowed to come in contact with their acidified pore waters (Orndorff & Daniels, 2004). I have personally observed significant structural damage to concrete and corrosion of galvanized metal and ductile iron at Stafford Airport (Fanning et al., 2004) and surrounding localities occurring within several years of placement.

At a given location along the pipeline corridor, the site-specific AFM risk for a given S containing geologic material will be governed by the current depth of weathering. Generally, we can safely assume that the surface two to three feet or more (e.g. the weathered soil profile) has been oxidized over time and does not pose a primary risk. These soil and saprolite materials tend to be yellow, red, or brown in color due to their accumulation of weathered Fe-oxides. However,

non-oxidized (e.g. chemically reduced; often gray to black) materials can be encountered within ten feet of the current surface, particularly in tight dark shales and/or areas where saturation has prevented oxidation. Thus, the combined risk of AFM can only be assessed via a combination of (a) accurate interpretation of available geologic mapping, (b) on-site interpretation of soil and saprolite/rock color patterns and (c) proper laboratory testing of non-weathered materials. None of these procedures are specified in the current ACP documents. The indicators that are discussed in the ACP original DEIS document on page 4-31 (red seepage, Fe staining etc.) are generally not applicable to freshly exposed soil/geologic profiles, but are useful for evaluating previously disturbed materials following several weeks to months of exposure.

Furthermore, the AFM mitigation procedures described on page 4-32 are totally inadequate to offset the effects of pyrite oxidation on local groundwater (in the trench and at discharge points), in surface soils (where exposed), and in surface water runoff. Over forty years of experience with these materials in a wide array of mining and construction environments has clearly proven that there are only three viable ways to prevent or mitigate the impact of S oxidation in these materials:

1. Use appropriate *a priori* sampling and lab analytical procedures (e.g. acid-base-accounting; Skousen et al., 2002) to determine lime needs and **bulk-blend** the lime with the acid-forming materials. *Simply adding lime to the surface is not effective*.

2. Dispose of the materials below the permanent water table and eliminate the possibility of them being influenced by oxidized groundwater influx.

3. Seal the materials in an impermeable lined disposal area to prevent water and oxygen from reaching the AFM.

If one of (or combination) of these approaches is not taken, then long-term water treatment for trench and backfill discharges will be required and should be planned for. Acidic discharges from VDOT's uncontrolled AFM cuts and fills have persisted for decades.

The current proposed approach (simple backfill of AFM into the trench without lime additions or seepage barriers) will generate very low pH groundwater in the trenches where these materials occur which will then subsequently affect local groundwater and/or discharge from trench outlets on slopes. Furthermore, as discussed above, since large amounts of excess spoil will not be able to be returned to the original trench, these materials will pose a significant revegetation and local water quality challenge wherever they are eventually placed. These risks will be amplified where non-treated (by lime) AFM are placed into fills or where they are exposed at the final revegetation surface (e.g. forested private lands where topsoil is not returned). Even if limed appropriately, these materials will still generate significant TDS levels in any waters that are allowed to percolate through them (Daniels et al., 2016) which could potentially impact the biotic integrity of receiving headwater streams.

In fairness, it is recognized that these materials are not extensively exposed along the pipeline corridor when viewed in its entirely. However, where they occur, the associated risks are potentially severe. With respect to Nelson County, the relative uncertainty of the location of AFM occurrence also poses an active management challenge for contractors since these materials are frequently not noted on current geologic maps, but their local occurrence is clearly

noted by Sweet & Lovett (1985) in the region. Extensive materials on recognizing and remediation of AFM are available at http://landrehab.org/.

Inadequate topsoil recognition and soil reconstruction/seeding protocols

The combined sequence of ACP documents provided to date contains numerous different sections describing the overall restoration and rehabilitation protocols that have been proposed for both federal and private lands. Many of these sections conflict with one another or between subsequent revisions, and the rationale for many of the differences between recommendations for federal vs. private lands is not provided. Furthermore, the overall soil reconstruction and rehabilitation protocols that are recommended in various sections of both the original December 2016 and subsequent revisions (including January 10 Appendix G - Restoration and Rehabilitation Plan) are deficient in many fundamental aspects. Following is a short summary of major shortcomings that I have noted with the current procedures and protocols. There are dozens more inaccurate statements and inconsistencies across these summed documents.

1. The authors of the various sections appear to have little understanding of basic soil science and morphology. In the original December 2016 document, topsoil is referred to, but not defined. Later documents including various restoration plans define topsoil as the O plus A horizon while others (later USFS plans) include the AB and BA horizons, which in fact are subsoil layers. Nowhere in any document is the occurrence of the E horizon included. Many of our soils, particularly under intact forest cover and in deeper sandy regions of the Coastal Plain, contain significant E horizons that should be recognized and included as "topsoil". Associated with this, the contention in the original DEIS that 77% of Virginia contains topsoil deeper than 12 inches is simply false; our topsoils are typically much thinner.

2. The January 10 Appendix G document (Restoration and Rehabilitation Plan) indicates that topsoil will not be salvaged on forested lands, but no rationale is given. This will definitely have a negative impact on long-term reclamation success since topsoil salvage and re-spreading is an internationally recognized BMP for rehabilitation of disturbed lands. This will mean that a mix of various soil horizons and geologic substrates will be left at the surface for final revegetation. This will negatively affect both herbaceous and forest reestablishment efforts.

3. The ability of bulldozers etc. to salvage and re-spread topsoil on steep slopes (> 30 to 40%) is presumed in a number of documents, particularly those pertaining to federal lands. Our experience in coal mining environments is that frequently this is simply not possible and often poses an operator risk. Similar assumptions appear in other sections with respect to the ability to use seed drills and culti-packers on extremely steep slopes. It is much more likely that (a) extremely steep areas will need to rely on mixed soil and geologic materials to serve as "topsoil substitutes", and (b) many areas will need to be either hydro-seeded or mulched and broadcast seeded by hand.

4. As noted earlier, the presence of excess spoil within the ROW has not been accounted for in any of the restoration protocols. When this is combined with the possibility of these excess spoils being potentially acid-forming, the risk of major erosion losses and/or slope failures will be greatly amplified.

5

5. While the current restoration section does appropriately recognize that compaction will be a significant limitation requiring remediation, the procedures for recognizing and remediating compaction are insufficient. First of all, virtually all soil types are potentially subject to significant compaction, not just the limited groups specified on page 4-47 of the original DEIS. All replaced and regraded subsoil materials will likely be significantly compacted and will need to be loosened with a ripper etc. before topsoil placement. Subsequently, the replaced topsoil layer will need to be loosened again with a chisel-plow or other appropriate tillage implement. Simple surface disking is not adequate to loosen re-compacted topsoil layers.

6. Certain protocol sections appear to be "cut and paste" from other documents and offer directly conflicting recommendations. For example the following text appears in section 5.7.1 Seedbed Preparation, pages 7 and 8 of Appendix G (Jan 10):

   Unless otherwise specified by land managing agencies or landowners or as needed to support the establishment of pollinator habitat, the seedbed will be prepared in disturbed areas to a depth of 3 to 4 inches using appropriate equipment (e.g., cultipacker roller) to provide a seedbed that is firm, yet rough. Atlantic and DTI will imprint exposed soils with a sheepsfoot, landfill compactor, tractor with studded tires, or land imprinter equipment. Soil imprinting, or tracking, leaves divots on the ground surface that trap moisture and seeds, creating catchments for native plant material to be spread across the seeded area (West Virginia Department of Environmental Protection, 2012). In addition, a seedbed with a rough surface is conducive to the capturing or lodging of seed when broadcasted or hydroseeded, and can reduce runoff and erosion potential. The rough seedbed surface will also retain soil moisture for seedling germination and promote faster establishment of vegetation.

   This text contains directly conflicting protocols in that the first part instructs the operator to intentionally compact the surface soil but also leave it rough? Rough surfaces are definitely superior for establishing vegetation and all recent WV and VA protocols have called for this (Booze-Daniels et al., 2000). However, the use of a sheepsfoot roller or landfill compactor would generate the opposite of intended results. Whomever wrote this section did not understand the fundamentals of soil placement and revegetation protocols.

7. Similarly, Section 5.8.1 calls for lime and fertilizer applications to be mixed into upper 2 inches but gives no rationale or method for this. In this same section, the upland default fertilization rate is given as 150 lbs of 10-20-20, but the next line calls for P and K in the subsequent/same installation? The authors apparently do not understand that the 20-20 in the fertilizer ratio specifies the P_2O_5 and K_2O content of the material as applied. Overall, these sections along with many others throughout indicate that the authors had a negligible understanding of actual soil amendment and seeding practices.

8. The potential for disturbance of prime farmland along the corridor (although not an issue in Nelson County) is a significant concern. Various submissions estimate total impacts of between approximately 7,500 and 11,000 acres. Other than urbanization, the largest single impact to prime farmland in our region to date has been the recent mineral sands mining operations in southern Virginia that have disturbed approximately 3,500 acres (Schroeder et al., 2010). Despite the stated importance of prime farmlands, no detailed

protocols are provided for these lands in the current (January 10, Appendix G) document. I have worked on developing soil reconstruction protocols for these kinds of lands since the early 1990s and have found that (a) significant subsoil and surface soil ripping and tillage will be essential along with (b) large applications of lime and P to the subsoil and replaced topsoil layers. Even with these approaches, post-disturbance crop yields will be decreased by 20 to 30% in most years and this should be clearly communicated to all stakeholders.

9. The monitoring protocol as described in Section 8.1 is simply inadequate for all post-disturbance land uses. Areas returned to forest species will need to be monitored for at least five years to assure long-term survival and post-establishment productivity. Forest species are particularly sensitive to soil compaction and our experience in coal mining landscapes indicates that multiple years of monitoring are required. Similarly, rehabilitation success in areas returned to agriculture should be based on actual yield measurements taken over several growing seasons in comparison to nearby non-disturbed areas.

Review of Blackburn Report

As a part of my efforts, I have reviewed the report by Alex Blackburn and associates entitled *Report Analysis and Field Verification of Soil and Geologic Concerns with the Atlantic Coast Pipeline (ACP) in Nelson County, VA* in its entirety. I am in general agreement with his findings regarding the overall predicted effect of pipeline construction on the potential for increased landslide risk and increased soil erosion potentials. Per my detailed comments above, I also agree with his report's limited assessment of issues associated with "excess spoils" and acid-forming materials which I see as major issues with the current pipeline proposal and supporting documents.

Overall Conclusions

1. As proposed, the pipeline trenching procedures will generate significant amounts of "excess spoil" material that will adversely impact surface soil, revegetation, and erosion potentials within the right of way corridor unless properly placed and managed in stable off-site fills.

2. The ACP documents to date do not appear to document appropriate mass balance considerations for all cuts and fills and the issues associated with managing excess materials.

3. The original DEIS and subsequent revisions do not adequately address the risk, recognition protocols, or remediation strategies for potentially acid-forming materials.

4. Acid-forming materials potentially pose localized, but significant soil and water quality risks at multiple locations along the proposed corridor, including Nelson County.

5. The criteria for recognizing topsoil and subsequently reconstructing productive post-disturbance soils are in conflict in various ACP documents and the overall procedures recommended will not be effective to properly restore post-disturbance soil productivity.

6. Final soil placement, soil amendment and seeding protocols are improperly specified or incorrect in many locations across multiple documents, including the most recent January 2017 revisions.

References

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COMPANIES/ORGANIZATIONS COMMENTS

CO120 – Friends of Nelson and Friends of Wintergreen

Friends of Wintergreen, Inc.
PO Box 842
Nellysford, VA 22958

April 3, 2017

Nathaniel J. Davis, Sr.,
Deputy Secretary Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: Docket No. CP15-554-000;
Comments on the Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline and Supply Header Project

Dear Mr. Davis and Members of the Commission:

Attached please find comments by Blackburn Consulting Services for Friends of Nelson and Friends of Wintergreen, both Intervenors in the above captioned docket. Also attached is a letter submitted by Friends of Nelson summarizing many of the conclusions prepared by Blackburn, comments which Friends of Wintergreen fully supports and asks to be included in the FERC record.

CO120-1

We believe the current DEIS is deficient in numerous areas and does not meet the requirements of NEPA. The ACP will have significant adverse environmental and economic impacts on Wintergreen and Nelson County. Over numerous filings to FERC since 2015, Friends of Wintergreen has provided FERC with an extensive range of scientific and engineering studies, analyses, alternative routes, and related materials relating to the ACP. This has included a detailed analysis of the deleterious impacts the ACP will have on the environment, economy, and safety of our communities and a point-by-point listing of the deficiencies in the DEIS. The attached comments by Blackburn adds to this body of work, further confirming the inadequacy of the DEIS with respect to environmental issues such as erosion, landslide potential, etc. in Nelson County. On top of this, Dominion has submitted a substantial amount of new material after the DEIS was released, making it impossible to evaluate the DEIS in its current form.

For these and other reasons, we respectfully request that FERC:

1. Rescind the current DEIS
2. Require the ACP perform a thorough assessment of the site-specific landslide risks in Nelson and
3. Release site-20170403-5158 FERC PDF (Unofficial) 4/3/2017 6:16:39 AM specific construction/mitigation plans so that stakeholders can provide meaningful input to FERC on those plans as part of a new, NEPA-compliant, DEIS.

Until this occurs, we respectfully request that ACP's application not be allowed to proceed.

Thank you.

Sincerely,

Chairman, Board of Directors

CO120-1 See the responses to comments CO118-1 and CO66-30.

Z-2451

April 2, 2017

Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

RE: Comments of Friends of Nelson and Joyce Burton, Intervenors

Re: The Draft Environmental Impact Statement (DEIS) for the Atlantic Coast Pipeline and Supply Header Project (Docket Nos. CP15-554-000, CP15-554-001, and CP15-555-000. FERC/EIS- 0274D)

Dear Mr. Davis and Members of the Commission,

Attached please find comments prepared by Blackburn Consulting Services at the request of Friends of Nelson and Friends of Wintergreen. Both of these groups are intervenors and assert that the construction of the ACP will have significant adverse environmental and economic impacts on Nelson County.

I particularly want to draw FERC's attention to the fact that Blackburn Consulting -- nationally certified Licensed Professional Soil Scientists through the Soil Science Society of America, with over 50 years of experience in mapping and evaluating soil characteristics for a variety of purposes from agriculture/forestry to land development/environmental and wastewater disposal -- concludes that this **DEIS is flawed and insufficient because it was prepared using information that does not include the appropriate level of detail to adequately evaluate the potential for slope failures/landslides**.

Both the ACP and FERC repeatedly recognize the fact that the geography of Nelson County is particularly prone to slope failures/landslides[1]. Tables within the DEIS note that the county is ranked third of thirty-six counties along the pipeline route for having major revegetation concerns[2], and is first in acreage with slopes grater than 30 percent.[3] DTI's own Slope Stability Policy and Procedure for Pipeline Design, Construction and Right of Way Maintenance also admits that the location of slope failures can be challenging to predict[4] and that pipeline route selection is an important component of avoiding or minimizing the occurrence and impacts of these slope failures[5]. Yet despite their support of more rigorous testing in landslide-prone National Forest lands, FERC has not recommended the use of similar protocols in vulnerable, populated areas like Nelson County. Requiring ACP to conduct an Order 1 Soil Survey and use more accurate topographic data along and adjacent to the pipeline route in areas with steep slopes would help identify susceptible landforms and provide some of the additional information needed to more responsibly site the pipeline, therefore reducing the chances of slope failures/landslides, erosion and sedimentation.

FERC recognizes that "While Atlantic and DTI have implemented programs and several mitigation measures to minimize the potential for slope instabilities and landslides, the **development of other slope instability/landslide risk reduction measures have not been**

completed or have not been adopted [as of the issuance of this DEIS]"[6] (emphasis added). At the very least, the development of these measures should be completed, adopted and submitted to FERC before the production of a final EIS – though it is our contention that this should be included in a revised DEIS first, since stakeholder input is requisite for NEPA compliance – or the true risk of long-term environmental damage will be impossible to determine.

Although the proposed pipeline has been sited to "maximize ridgeline construction,"[7] FERC concedes that the risk of landslides is not limited to the areas of actual construction and that "**Changes in surface and subsurface drainage may increase pre-existing landslide hazard potential on natural slopes adjacent to the pipeline and access roads, and may create or contribute to failure of the natural slopes adjacent to the pipeline and access roads"** and cause a "project-induced landslide"[8] (emphasis added). When you combine this with potential downslope water impacts, and the fact that landslide damage would also "lead to additional disturbance of land and environmental resources in order to stabilize the landslide and replace pipeline or reroute sections of the pipeline that cannot be stabilized,"[9] the effects of this increase in landslide risk – which is not limited to the ROW itself – can hardly be deemed "insignificant".

Given the above facts, **we believe that, lacking the additional information and subsequent analysis called for in the Soil Foundations' *Report Analysis and Field Verification of Soil and Geologic Concerns with the Atlantic Coast Pipeline (ACP) in Nelson County, VA*[10] the DEIS cannot be considered anything but deficient and, we believe, negligent.** How can FERC conclude that the ACP's impact on landslide risk will be adequately mitigated when sufficient information has not even been collected to perform a responsible analysis of the risks in the first place?

This additional information would help identify concave colluvial landforms along and adjacent to the pipeline route that are at the greatest risk for slope failures and would

- enable the ACP to identify and route around failure-prone areas
- enable the ACP to avoid diverting surface and subsurface drainage onto/into vulnerable slopes therefore decreasing the potential for slope failures/landslides
- enable the ACP to avoid increasing surface loads adjacent to vulnerable slopes thus decreasing the likelihood of landslides and their associated environmental damage
- enable FERC to more accurately predict the likelihood of slope failures, erosion and sedimentation of waterways, and to weigh the adverse impacts of this project accordingly.

Given the multiple steep-slope related deficiencies in the DEIS noted by Blackburn and others, we ask FERC to rescind the current DEIS. We demand that ACP perform a more thorough assessment of the site-specific landslide risks in Nelson, as well as release site-

specific construction/mitigation plans so that stakeholders can provide meaningful input to FERC on those plans as part of a new, and NEPA-compliant, DEIS process. Until this occurs, ACP's application must not be allowed to proceed further.

Sincerely,

Joyce Burton

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[1] *Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement,* Volume I, Section 4.1.4.2 (Environmental Analysis, Landslides). Published by FERC, December 30, 2016

[2] *Resource Report 7 (Soils),* Table 7.4.1-1, "Acres of Soil Characteristics Affected by the Proposed Pipelines for the Atlantic Coast Pipeline and Supply Header Project", originally submitted to FERC by Dominion/ACP in September 2015, and updated in Appendix I of their July 18, 2016 Supplemental Filing.

[3] Ibid. Table 7.4.1-2 "Topsoil Depths Along the Proposed Pipeline Routes for the Atlantic Coast Pipeline and Supply Header Project".

[4] *Slope Stability Policy and Procedure for Pipeline Design, Construction and Right of Way Maintenance* (Section 2.0). Dominion Transmission Inc, 9/28/2016. Submitted to FERC by ACP January 27, 2017. FERC Docket # CP15-554-000, Accession No. 20170127-5202. Appendix C, Attachment C.

[5] Ibid., (Section 3.0).

[6] *Atlantic Coast Pipeline and Supply Header Project Draft Environmental Impact Statement,* Volume I, Section 5.1.1 (Conclusions and Recommendations, Geological Resources). Published by FERC, December 30, 2016.

[7] Ibid.

[8] Ibid., Volume I, Section 4.1.4.2 (Environmental Analysis, Slope Stability).

[9] Ibid.

[10] Released March, 2017. Submitted to FERC by Friends of Nelson 3/27/2017. FERC Docket # CP15-554-000, Accession No. 20170327-5096.

SoilFoundations
Blackburn Consulting Services, LLC

Soil | Foundations

Friends of Nelson
Attn: Randy Whiting and Joyce Burton
96 Old Turtle Place
Nelly's Ford, VA 22958

March 23, 2017

Dear Friends of Nelson and Friends of Wintergreen:

Re: Nelson County issues resulting from a review of the DEIS

Blackburn Consulting Services, LLC prepared a report for the Friends of Nelson and Friends of Wintergreen, evaluating the submissions to FERC through December 1 of 2016. http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170327-5096 As part of that review we conducted field verification of our analysis. We identified several issues with the studies for the Atlantic Coastal Pipeline (ACP), prepared and submitted to FERC. Issues identified in our report were related to, but not limited to, slope stability and landslide potential, erosion and water quality. After the release of the Draft Environmental Impact Statement (DEIS) late December 2016, we have reviewed comments made by ACP and FERC's review/analysis. Because we have too many comments on various portions of the report and FERC's DEIS, for the purpose of this review we will restrict our analysis to soils, slope stability and erosion/water quality. Below is a summary of our limited review of the DEIS.

I. Basic Soil and Topographic Information Used

Among our biggest concerns with the reports and the DEIS is the data used to make critical decisions on alignment, contingencies and risk:

What data was used in the ACP evaluation of this proposed route?

USGS topographic 20' contour-interval data used as base data for mapping.

NRCS Soil Surveys and the computerized SSURGO database FERC staff states "SSURGO provides the most detailed level of information of soil mapping done by the NRCS" **Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226**

While the statements in the DEIS are true, that this is the most detailed level of information currently available, this soils mapping was done for the "once over mapping of the US as part of the National Cooperative Soil Survey Program". However, USDA/NRCS also has guidelines for site specific "order 1" soils surveys where more detailed information is needed. Due to this fact, the US Forest Service (abbreviated FS in the DEIS) required order 1 soil surveys to be completed

on all their property proposed to be impacted prior to any approval. It is unfathomable why this is critical for remote, sparsely populated Forest Service land, yet not a consideration in populated, privately owned, and in many cases, failure prone, areas. An order 1 soil survey is an excellent idea and should be required for all impacted lands including private properties. The USGS topographic data is 1:24,000 scale with a 20' contour interval. During our field visit, we found the use of this data to be inadequate and incapable of illustrating much of the critical landforms and micro relief.

Use of the USGS topo and the NRCS soil surveys "web soil survey" simply does not include sufficient detail to adequately evaluate the alignment and potential for slope failures/landslides. Our field observations confirmed that USGS's 20'contour intervals do not adequately show many of the concave landforms high on these mountain slopes and the mapping in web soil survey does not show the extent of the colluvial soils that we observed in these concave landforms. This is further verified by the following statement; "Therefore, soil surveys provide a broad overview of soil conditions but are not designed for site-specific evaluations." **Attachment C. 3.2.3 USDA Natural Resource Conservation Service Soil Surveys pp. 24**

As stated in the DEIS; "ACP and SHP would traverse a variety of soil types and conditions." This is true even with the use of the "web soil survey," which is designed as a regional planning tool. By conducting an order 1 soil survey, the number of mapping units could easily double.

Order 1 soil surveys are intended to provide more site specific soil data for proposed projects. In many cases, mapping at an order 1 level may reveal landforms or inclusions within map units of soils that were not named or were not able to be delineated at the scale of the official soil survey. The order 1 soil survey can also identify use-dependent soil properties that are different from the typical soil properties listed for map units in the "official" soil survey (paraphrased from NRCS, 2016b).

II. Slope Stability and Landslide Potential –

ACP and FERC both repeatedly recognize that there is a high potential for landslides in portions of the Appalachian and Blue Ridge Physiographic provinces. Furthermore, both entities accept that land clearing and installation of the pipeline increase that potential as well as the potential to cause damage to the pipeline itself. Some examples are as follows:

> "We have also determined that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur."
> **Vol 1. 5.1 Conclusions of the Environmental Analysis pp. 698**

> "During construction of the pipeline facilities, activities on steep slopes could initiate localized slope movement. In addition, during operation, a naturally occurring landslide could damage the proposed facilities and create a potential safety hazard to nearby residents."
> **Vol 1. 4.1.4.2 Slope Stability pp. 209**

Soil Foundations

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"Landslide damage would lead to additional disturbance of land and environmental resources in order to stabilize the landslide and replace pipeline or to reroute sections of the pipeline that cannot be stabilized."
Vol 1. 4.1.4.2 Slope Stability pp. 208

Project-induced landslides, such as failures of cut slopes or fill slopes, may result from the construction, operation, and maintenance of the pipelines and access roads. Project-induced landslides can create risks to public safety, environmental resources, and infrastructure on lands upslope and downslope as well as within the access roads and pipeline corridors. Fill slopes, especially inadequately constructed and maintained fill slopes, are a source of debris flows in mountainous terrain (Collins, 2008; Wooten et al., 2009; Latham et al., 2009; Wooten et al., 2014; Wooten et al., 2015).
Vol 1. 4.1.4.2 Slope Stability pp. 208

Another type of project-induced landslide may result from the projects' alteration of the surface and subsurface drainage in the areas of construction, and in adjacent natural slopes along the pipeline and access roads. Changes in surface and subsurface drainage may increase pre-existing landslide hazard potential on natural slopes adjacent to the pipeline and access roads, and may create or contribute to failure of the natural slopes adjacent to the pipeline and access roads.
Vol 1. 4.1.4.2 Slope Stability pp. 208

While Atlantic and DTI have implemented programs and several mitigation measures to minimize the potential for slope instabilities and landslides, the development of other slope instability/landslide risk reduction measures have not been completed or have not been adopted. Additionally, although the proposed pipelines have been cited to maximize ridgeline construction, numerous segment of pipeline would be constructed on steep slopes and in areas of high landslide potential. Considering the historic and recent landslide incidences in the immediate project area, along with the factors above, we conclude that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur.
Vol 1. 5.1.1 Geological Resources pp. 699

Southeast of the Appalachian Plateau, the flanks of the Appalachian Ridges and the Blue Ridge are covered by colluvium that is highly susceptible to sliding. Because the colluvium covers many types of bedrock, the map designations of landslide incidence and susceptibility cross formational boundaries.
Attachment C. 2.1.1 Appalachian Highlands Region pp. 17

ACP supplied diagrams detailing the cut and fill construction for steep slopes. These diagrams do not provide any examples of installation on steep, narrow ridges, where the ridgetop is 50-75' wide with very steep slopes and mapped debris-flows on either side.
Attachment C. Diagram C-33

III. Erosion Control and Impact to Water Quality/Sediment in Waterways

ACP identifies numerous times that Nelson County is one of the counties where they have significant concerns regarding adequate revegetation. According to ACP's own submission to FERC, Nelson County ranks third of thirty six counties in the entire proposed pipeline ROW (PA, WV, VA and NC) for having major revegetation concerns, and ranks first in acreage with slopes >30%.

As evidenced in our limited field studies, we concur that the combination of a non-cohesive sandy surface textures in, often, excessively drained soil, with steep to very steep slopes will result in both very difficult revegetation efforts and erosion. High volumes of sediment are expected to impact the local streams and waterways. This will result in significant erosion and water quality problems both immediately and for many years in the future.

Increases in stormwater runoff volume and velocity due to the removal of trees appears to be inadequately addressed. According to the VA DCR Erosion and Sediment Control Handbook, roughness coefficients used to calculate the runoff are dramatically different for wooded areas vs. those that are in grass. When the pipeline is installed directly up and down the slope, runoff on those areas will certainly be increased. The potential for flash flooding will also be increased during heavy storms and as mentioned in the DEIS:

> "Flash flooding can also increase landslide potential within the project area by scouring steep slopes and eroding bedrock." Vol 1. 4.1.4.3 Flash Flooding pp. 212.

IV. Conclusions and Recommendations

Slope stability in western Nelson County is tenuous in its current state even with the stabilizing effects of mature forests. Removal of vegetation and human manipulation of the soils and landforms are primary factors associated with increasing the potential for landslides. We believe that clearing these steep, potentially unstable areas of Nelson County and installing the 42' Pipeline will eventually result in failure during, or at some point after, installation. These failures are likely to impact properties not managed by, or within the easement of, ACP. Furthermore we do not believe the stability will ever return to the existing level of protection that is currently provided with the mature forests.

ACP should be required to acquire site specific data in order to more accurately determine where the potential for landslides are in Nelson County. Additionally, we recommend determining how many/which properties would be affected if such landslides would occur in these particularly unstable locations. Furthermore FERC should require this to be completed prior to approving the alignment and construction. That site specific data should include the following:

- Specifically map all historic and recent debris flows/landslides within Nelson County that occur within 1000' of the proposed pipeline. Since the pipeline is mostly proposed to be installed along the top of the ridges, most of the debris/landslides will start at or near the ridges and move down the slope away from the pipeline. Understanding that the USGS

states that the potential for future failure is higher in areas where previous landslides have occurred, evaluate the potential extent of landslides and who or what properties may be affected if this does occur.

- FERC should require ACP to conduct an Order 1 Soil Survey of the alignment through Nelson County specifically identifying concave/colluvial landforms and soils. Any amount of colluvium indicates that water will also be accumulating there. This should be combined with obtaining the currently-available-better topographic data and preforming topographic analysis to assist in analyzing landscape position (shape) and verify the soil mapping. In order to effectively address slope stability influenced by the ACP, this study should include a wide enough area (minimum of 200') either side of the proposed 125' ROW, access roads, and additional work areas.

- ACP has not adequately identified where or what they will do with excess soil material that will be left over after installing the pipe and gravel. Neither do they specify where they plan to disperse the excess water that they plan to remove from the construction site or by means of French drains. Spreading excess construction material in inappropriate areas will surcharge unstable soils and landforms as well as diverting or even trapping the natural flow of stormwater thereby increasing the risk of landslides to occur. Likewise, dispersal of water from "French drains" or pumped from trenches during construction into inappropriate areas will also add to the potential for slope failure/landslides.

- Erosion problems are to be expected during and after the construction of this pipeline through the very steep and highly erodible soils in Nelson County. Specific plans as to how this will be alleviated should be required by FERC prior to approval. Furthermore, access to the cleared pipeline with any types of vehicles even on private lands should be restricted as continual use will increase erosion, potentially causing future slope failures and certainly increasing the sediment loads in local waterways.

- Finally, many site characteristics and challenges that are able to be identified by virtue of the studies and information we mention in this letter are, instead, bestowed as responsibilities of the Project Team/field engineer. Aside from avoiding the analysis and review of diversely qualified professionals, by including these site specific challenges in the DEIS, this practice also places an enormous responsibility on the Project Team/field engineer to have the knowledge, skills and abilities to halt a time-dependent construction process when further studies, avoidable hazards, and future instability are encountered. Therefore, it is imperative that these vulnerable areas be specifically identified and measures be proposed before this alignment is approved.

Soil Foundations

COMPANIES/ORGANIZATIONS COMMENTS

CO120 – Friends of Nelson and Friends of Wintergreen (cont'd)

Attached is a matrix of our review with specific sections, comments and recommendations of the DEIS. We appreciate the opportunity to review this document and being of service. If you have any questions with regard to the information in this letter, or the attached matrix, please call or e-mail either of the undersigned.

Respectfully,

BCS, LLC

Alex Blackburn, LPSS

Ryan Reed, LPSS

Attachment: DEIS Review Matrix

Z-2460

COMPANIES/ORGANIZATIONS COMMENTS

CO120 – Friends of Nelson and Friends of Wintergreen (cont'd)

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
3	General	Vol. 1	Prior to close of the Draft EIS comment Period there are significant requirements to evaluate and protect endangered or proposed endangered species. However, even though Nelson County is known to be a hot spot for landslides and that over 100 lives were lost there in a single event in 1969, FERC nor the ACP put seem to address that REAL potential problem. Multiple times both have indicated that the installation of this pipeline could increase the chance for landslide both immediately and in the future but there are no real plans or requirements to first evaluate that danger (by preparing an order 1 soils survey, conduct topo analysis and map all historic and recent landslides within 500 feet of the pipeline) nor have they established a disaster plan should another major event like the 1969 storm happen again. The impact to human lives, health, safety and welfare cannot be understated.	
5	A landslide is defined as the movement of a mass of rock, debris, or earth materials down a slope. Landslides can be initiated by heavy rainfall, earthquakes, changes in groundwater conditions (i.e., seasonal high water tables), and/or slope disturbance resulting from construction activity. Information on landslide incidence and susceptibility was provided by a digitally compiled USGS Landslide Overview Map of the Conterminous United States (Radbruch-Hall et al., 1982), as well as remote sensing review including aerial imagery, LiDAR data, and field surveys. Very few steep slopes along ACP and SHP were found to contain landslides. Where colluvium accumulation was observed on most of the steep slopes, the colluvium was thin and overlying bedrock. Signs of creep were often observed in the colluvium. Slope creep in colluvium is not found to	Vol 1: 4.1.4.2 Slope Stability pp. 207	Agree with these statements	Properly address these concern with adequate field studies and pre-construction plans.

Prepared by Tetra Tech Consulting Services, LLC

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	conjunction with naturally occurring landslides, but it can be an indication that slope instability could be induced during pipeline construction activities.			
5	Landslide damage would lead to additional disturbance of land and environmental resources in order to stabilize the landslide and replace pipeline or to remove segments of the pipeline that cannot be stabilized.	Vol 1: 4.1.4.2 Slope Stability pp. 208	So, just how extensive is this in Nelson County? We believe that it is fairly extensive in the Western portion of the County and combined with the right weather could also be in portions of eastern Nelson County.	Based on better data, address specifically where landslide potential is within Nelson County.
4	Project-induced landslides, such as failures of cut slopes or fill slopes, may result from the construction, operation, and maintenance of the pipelines and access roads. Project-induced landslides can create risks to public safety, environmental resources, and infrastructure on lands upslope and downslope as well as within the access roads and pipeline corridors. Fill slopes, especially inadequately constructed and maintained fill slopes, are a source of debris flows in mountainous terrain (Collins, 2008; Wooton et al., 2009; Latham et al., 2009; Wooton et al., 2011; Wooton et al., 2015). Another type of project-induced landslide may result from the projects' alteration of the surface and subsurface drainage in the areas of construction and on adjacent natural slopes along the pipeline and access roads. Changes in surface and subsurface drainage may increase pre-existing landslide hazard potential on natural slopes adjacent to the pipeline and access roads, and may create or contribute to failure of the natural slopes adjacent to the pipeline and access roads. The stability of cut slopes and fill slopes during the construction period and in the decades of operation	Vol 1 4.1.4.2 Slope Stability pp. 209	Agree	Properly address these concern with adequate field studies and pre-construction plans.

Prepared by Tetra Tech Consulting Services, LLC

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No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	and maintenance will depend on many engineering geologic or geotechnical factors, such as slope gradient or inclination; the bedrock structure (orientation and distribution of bedrock fractures or discontinuities); the mass strength properties of in-place bedrock and surficial materials including soils and colluvium; the mass strength properties of excavated bedrock fragments and surficial materials used as fill, as well as fill imported from off-site; the nature of the contact between in-place bedrock and surficial materials including soils and colluvium (transitional or sharp; planarity); the nature of the contact between in-place bedrock and fills (transitional or sharp; planarity); rainfall quantity and intensity; and surface and subsurface drainage including near-surface groundwater and springs.			
5	During construction of the pipeline facilities, activities on steep slopes could initiate localized slope movement. In addition, during operation, a naturally occurring landslide could damage the proposed facilities and create a potential safety hazard to nearby residents.	Vol 1, 4.1.4.2 Slope Stability pp. 209	This is admitted and we agree, but there is no further study proposed to determine where these may occur or how they plan to protect lives and property.	Conduct further studies and provide a plan that addresses these concerns.
6	Slopes are classified in both degrees and percentages.	Vol. 1, 4.1.4.2 Slope Stability pp. 209	Measuring slopes in degrees versus percentages are two very different units. Use of both creates confusion for an average reader.	Chose one unit. Percentage is preferable for field personnel.
7	Categories for the RIC Teams to identify hazard conditions and preparing a set of standard mitigation designs.	Vol 1, 4.1.4.2 Slope Stability pp. 210	What about concave landforms/slopes that may have well drained soils but are known to have accumulation of laterally moving water during storms and wet periods.	Landscape position is critical in identifying debris-flow areas and failure prone sites. The angle will repose is lowered in these areas as well. Adequately address concave landforms along the corridor.
8	Slip Avoidance, Indentification, Prevention and Remediation Policy and Procedure to minimize,	Vol 1 4.1.4.2 Slope Stability pp. 210	Measures that are proposed that may help stabilize the trench and immediate excavation will create concentrated	Once adequately identified, use site specific information to avoid concentrating flow and

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	and mitigate potential landslide issues…		water (ex. outlet pipes) in areas that may trigger other failure issues as a result	directing it to failure-prone areas.
9	Flash flooding has the potential to occur along waterbodies within the project area, particularly in areas with narrow river valleys, steep slopes, and rock bottoms. Flash flooding can also increase landslide potential within the project area by scouring steep slopes and eroding bedrock. Past coal strip-mining has also increased the anthropogenic impacts on flooding potential by over-steepening of slopes and disturbing and removing of overburden.	Vol 1, 4.1.4.3 Flash Flooding pp. 217	Agree	Conduct further studies and provide a plan that addresses these concerns.
10	Acid producing rocks and soils are found in areas where sulfide minerals (including iron pyrite, marcasite, and pyrrhotite) are present.	Vol 1, 4.1.4.4 Acid Producing Rock and Soils	Agree	Conduct further studies and provide a plan that addresses these concerns.
11	The Northern Blue Ridge MLRA (130A) consists of rugged mountains with steep slopes, sharp crests, and narrow valleys. Major streams flow through gorges and gaps in the mountains. Broad valleys and basins and rolling hills are also prevalent in this MLRA. The soils in this MLRA are commonly moderately deep to very deep, sandy-skeletal to clayey soils that have a mesic temperature regime, an udic moisture regime, and mixed mineralogy. About 14.9 miles (3 percent) of ACP pipeline facilities would be within MLRA 130A.	Vol 1, 4.2.1 Existing Soil Resources pp	Agree, but this is a very general assessment, not intended for these site specific purposes.	Conduct further studies and provide a plan that addresses these concerns.
12	We identified the types and characteristics of soils crossed by ACP and SHP using NRCS Soil Surveys and the computerized SSURGO database for each county affected by the projects. SSURGO provides the most detailed level of information of soil mapping done by the NRCS. The Web Soil Survey was also reviewed to provide interpretations of the sensitivity of soils to specific types of disturbance	Vol 1, 4.2.2 Soil Characteristics and Limitations pp. 226	Agree, but this is a very general assessment, not intended for these site specific purposes.	Conduct further studies and provide a plan that addresses these concerns.

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	and soil suitability for specific types of uses such as roads and excavations.			
13	In addition to the SSURGO databases, the FS required Order 1 Soil Surveys for the portion of ACP on NFS lands, including the MNF and the GWNF. Order 1 Soil Surveys are intended to provide more site specific soil data for the proposed project and are considered supplements to the official soil survey, but they do not replace or change the "official" soil survey. In many cases, mapping at an Order 1 level or collecting point data may reveal inclusions within map units of soils that were not named in the official soil survey as well as use-dependent soil properties that are different from the typical soil properties listed for map units in the "official" soil survey (NRCS, 2016b).	Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226	Agree. This is critical	Just as was required for the NFS, all land, and particularly those areas that are debris-flow prone AND inhabited, such as Nelson County, should have the same level of studies conducted. The Order 1 Soil Survey, conducted on an area wide enough to adequately assess landforms, throughout Nelson County, will be instrumental in providing data that could identify and avoid catastrophic debris-flow failures.
14	Based on information contained in the SSURGO database, ACP would cross about 723 individual soil map units consisting of one major soil type or complexes of two or more soil types that can contain a minor percentage (generally not more than 10 percent) of dissimilar soils. SHP would cross about 73 individual soil map units consisting of one major soil type or complexes. Our analyses focused on the major soil characteristics for the dominant soils within the map unit.	Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226	Focusing on the dominant soils with the map unit? This statement represents a misunderstanding of the soil survey, and a growing amount of assumptions being made. A "Complex" soil mapping unit, by definition is dissimilar soils, and those dissimilar soils that are sufficiently different in morphology or behavior can be a much larger extent than 10% inclusions. Inclusions are different than the soils named in the complex. The ACP is a site-specific project where generalizing data that is already to appropriate for the plan is errant	Do not make generalities or further assumptions of the SSURGO data. Instead, conduct an Order 1 Soil Survey by licensed professionals on the entire line, particularly those areas prone to debris-flow.
15	Several soil characteristics have the potential to affect, or be affected by, construction and operation of a pipeline. These include erosion potential, depth to shallow bedrock, stony and rocky soils, compaction potential, revegetation concerns, drainage patterns, hydric soils, and prime farmland or farmlands of statewide importance.	Vol 1. 4.2.2 Soil Characteristics and Limitations pp. 226	Agree. This is the reason why accurate information is necessary.	Conduct an Order 1 Soil Survey on the entire line, particularly those areas prone to debris-flow.

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16	The majority of cumulative impacts would be temporary and minor when considered in combination with past, present, and reasonably foreseeable activities. However, some long-term cumulative impacts would occur on wetland and upland forested vegetation and associated wildlife habitats.	Vol 1. 4.13.8.15 Conclusion pp. 696	As stated in the report, extreme weather conditions, as misidentified / unidentified slope stability and debris flow areas are encountered and not properly mitigated, then "long-term cumulative impacts" is a large understatement of catastrophic impacts.	Conduct further studies and provide a plan that addresses these concerns.
17	We have also determined that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur.	Vol 1. 5.1 Conclusions of the Environmental Analysis pp. 698	Agree	Conduct further studies and provide a plan that addresses these concerns.
18	Because the SAIPR only addresses the portion of ACP and SHP located in West Virginia, we have recommended that Atlantic and DTI verify that the SAIPR document applies to the entire ACP and SHP and not just the portions within West Virginia prior to construction.	Vol 1. 5.1.1 Geological Resources pp. 699	Agree, but the SAIPR needs to better account for the impacts to the adjacent landforms, as expressed in comment #7 above.	Apply SAIPR to entire ACP and SHP with adequate accounting of all impacts.
19	While Atlantic and DTI have implemented programs and several mitigation measures to minimize the potential for slope instabilities and landslides, the development of other slope instability/landslide risk reduction measures have not been completed or have not been adopted. Additionally, although the proposed pipelines have been sited to maximize ridgeline construction, numerous segments of pipeline would be constructed on steep slopes and in areas of high landslide potential. Considering the historic and recent landslide incidences in the immediate project area, along with the factors above, we conclude that constructing the pipelines in steep terrain or high landslide incidence areas could increase the potential for landslides to occur.	Vol 1. 5.1.1 Geological Resources pp. 699	Agree	Conduct further studies and provide a plan that addresses these concerns.
20	ACP and SHP would traverse a variety of soil types	Vol 1. 5.1.2 Soils pp. 700	Agree. Though the variety and nature and properties of	Conduct further studies and provide a plan that

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	and conditions.		the soils are not accurately accounted for within the report.	addresses these concerns.
21	The projects would impact over 5,183 acres (0.7 percent) of soils that have a representative slope class greater than 8 percent. We analyzed the influence of slope percent as a variable factor in predicting soil erosion potential in rugged mountainous terrain. Based on this analysis, we find that construction practices would temporarily increase the erosion potential for soils crossed by ACP, but erosion rates should return to acceptable levels once final restoration has been completed. In addition, Atlantic's *Restoration and Revegetation Plan* and FERC Plan contain provisions for erosion control practices such as use of mulch and reestablishing vegetation within specific timeframes after construction is complete. Furthermore, because the construction disturbance is relatively short, we conclude that implementation of the measures in the *Restoration and Rehabilitation Plan* and FERC *Plan* should help ensure that there would not be a substantial increase in erosion potential in the project area in the long term.	Vol 1 3.1.2 Soils pp. 706	This again further generalizes data. With site specific information, use of the RUSLE would provide accurate data and probability of extreme soil loss in the steep, mountainous areas. Furthermore, revegetation in instable areas remains insufficient to reduce the debris-flow potential once critical, solidifying tree roots are removed.	Conduct further studies and provide a plan that addresses these concerns.
22	Construction of ACP and SHP would affect about 7,490 acres of vegetation, including about 6,103 acres of upland forest vegetation (deciduous, coniferous, and mixed). Operation of ACP and SHP would affect about 4,206 acres of vegetation, including about 3,424 acres of upland forest vegetation (deciduous, coniferous, and mixed).	Vol 1, 5.1.4 Vegetation pp. 705	Most of western Nelson is forested, mountainous land and the removal of the trees will increase the susceptibility of landslides and erosion.	Specifically address how many acres of woodland will be lost in Nelson County and what potential impacts that loss would have on slope stability, erosion and water quality.
23	These impacts would be temporary, lasting only while construction is occurring, or short-term, lasting no more than a few years until the	Vol 1, 5.1.5 Wildlife pp. 705	Agree	Conduct further studies and provide a plan that addresses these concerns.

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	preconstruction habitat and vegetation type would be reestablished. Other impacts would be long-term such as the re-establishment of forested habitats, which could take decades.			
24	Although the creation of edge habitat could favor some species, it could also increase the risk of establishment of invasive species, modify interspecific, change vegetation species composition, or increase risk of nest parasitism.	Vol 1 5.1.5 Wildlife pp. 706	Agree.	Conduct further studies and provide a plan that addresses these concerns.
25	Based on our review of the potential impacts on wildlife habitat, we conclude that the primary impact from construction and operation would be on forested habitats crossed by ACP and SHP, including the removal of approximately 6,900 acres of forested vegetation (includes 3,800 acres of permanent impacts). Fragmentation of interior forest blocks (see section 4.5.6), and contribution to the introduction and/or spread of invasive species.	Vol 1, 5.1.5 Wildlife pp. 705	Agree	Conduct further studies and provide a plan that addresses these concerns
26	To facilitate pipeline inspection, operation, and maintenance, the entire permanent right-of-way in upland areas would be maintained in an herbaceous/scrub-shrub vegetated state. This maintained right-of-way would be mowed no more than once every 3 years, but a 10-foot-wide strip centered over the pipelines may be mowed annually to facilitate operational surveys.	Vol 1 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	And use by the landowners and general public that are hunting/hiking in these areas. This will provide access and therefore, higher erosion potential PERMANENTLY	Conduct further studies and provide a plan that addresses these concerns
27	Because timber cutters are pending, we have recommended that Atlantic and DTI file their finalized *Timber Extraction Plans* prior to construction.	Vol 1 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	This should be prior to approval	Do this prior to approval.
28	We reviewed these plans and find them acceptable. However, we are encouraging the owners of each of these residences to provide us comments on the plans	Vol 1, 5.1.8.1 and 1.se. Recreation, Special Interest Areas, and Visual Resources	While many landowners are aware of specific intricacies of their land, the history of events, previous uses, disturbances, etc., most lay-persons are unable to	Conduct further studies and provide a plan that addresses these concerns

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	specific to their property.	pp. 713	adequately assess their land for the potential for catastrophic events and impacts to their health, safety and well-being. This responsibility should be on the applicant to provide adequate and appropriate site-specific investigations to properly characterize the concerns along the route. Unless ACP specifically addresses the landslide potential and what properties these landslides may affect, the landowners do not have the appropriate information (and some may be outside of the easement) to evaluate the effects of the pipeline on their property.	
29	Pipeline construction would result in a greater degree of visual impacts in heavily forested areas with high elevations and steep slope mountainsides. In West Virginia and northeastern Virginia, portions of the AP-1 mainline would be constructed in steep, mountainous terrain and require the removal of trees. Restoration and the establishment of vegetation in these areas typically takes several years to decades and no pipeline trees in the right-of-way would be prohibited due to operational and safety concerns. The cleared and maintained permanent right-of-way in heavily forested areas would create a visual contrast more noticeable to viewers and result in a greater degree of visual impacts. Most heavily forested areas associated with the project are located in remote, less populated areas and views of the cleared right-of-way would be intermittent.	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	Nelson County is a populated area with some of the steepest and debris-flow prone sections of the proposed pipeline. These impacts will be evident.	Conduct further studies and provide a plan that addresses these concerns
30	ACP would cross scenic byways where mitigation for clearing the construction and operational right-of-way would be determined on a site-specific basis, depending on the assessment of the feature and the expected level of permanent visual impact that may	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 713	The visual impacts of the bucolic landscape in Nelson County may have significant effects on the eco- and agri-tourism of Nelson County.	Accurately assess these areas prior to approval and get stakeholders from the community to provide input.

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	result from the removal for construction and operation of the pipeline facilities.			
31	Consultation with the MNF, GWNF, and ATC are ongoing and we have recommended that Atlantic provide documentation that the FS concurs with the conclusions and determinations of effect included in its Visual Impact Assessment.	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 715	These same considerations should be made for the approval of the individual counties that are impacted, including the negative impacts to their tourism.	Require approval of individual counties as well as MNF, GWNF and ATC.
32	While Atlantic identified some measures that would be implemented as part of its Public Access Plan (part of the draft ECP Plan), site-specific mitigation measures such as a detour have not yet been identified. Therefore, we have recommended that Atlantic should file an evaluation of the feasibility of using, by bore or HDD crossing, method for all trails and roads on the GWNF, and if a bore or HDD crossing is not feasible, file a site-specific crossing plan that identifies the location(s) of a detour, public notification, signage, and consideration of avoiding days of peak usage for each trail and road affected by ACP.	Vol 1. 5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources pp. 716	Agree. The addresses limiting access to the pipeline corridor in the NFS lands, however, there is no consideration for the access and the effects on eco-tourism, etc. on privately held lands.	Provide the same level of detail, analysis and restrictions on privately owned lands as is required for federally owned lands.
33	Construction of ACP and SHP would not have a significant adverse impact on local populations, housing, employment, or the provision of community services.	Vol 1. 5.1.9 Socioeconomics pp. 717	With all of the concerns expressed in this report and lack of site-specific studies, this statement is not accurate.	Correct the statement to reflect the real concerns to health, safety and welfare.
34	We received comments regarding the potential effect of ACP and SHP on property values. We assessed available studies regarding property values and based on the research reviewed, we find no conclusive evidence indicating that natural gas pipeline easements would have a significant negative impact on property values. Although this is not to say that any one property may or may not experience an impact on property value but rather the short or long term.	Vol 1. 5.1.9 Socioeconomics pp. 717	If this assessment did not include consideration of those properties that could be effected by a catastrophic debris-flow event, then this statement is misleading.	Conduct further studies that adequately assess and evaluate catastrophic debris-flow events and then reassess the properties with this information.

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35	Construction of ACP and SHP would benefit state and local economies by creating a short-term stimulus to the affected areas through payroll expenditures, local purchases of consumables, and project specific materials, and sales tax	Vol 1. 5.1.9 Socioeconomics pp. 717	If these localities are dependent on tourism, agri-tourism, recreation and other outdoor dependent economic drivers, the short-term benefits will not likely outweigh the long-term impacts	Reconsider this statement due to the dependence of rural economies on the picturesque landscapes.
36	We received comments regarding the potential for negative effects on natural resources and the environment from construction and operation of ACP and SHP to negatively affect tourism, particularly in the Rockfish Valley Wintergreen area in Nelson County, Virginia and in Yogaville, Buckingham County, Virginia. Scenic travelers and tourists would experience temporary visual and noise impacts associated with construction personnel and equipment and vegetation removal associated with construction workspaces. Atlantic would coordinate with Rockfish Valley and Wintergreen area businesses and recreational stewards to inform them of construction schedules and traffic volumes and would, to the extent practicable, schedule construction activities to avoid conflicts with special events. Yogaville is located over 4 miles from ACP and, therefore, we conclude no direct or indirect impacts on tourism and visitation to Yogaville would result from construction and operation of the projects. We also received comments that the project would delay or potentially prevent two large projects from being developed in the Rockfish Valley area: a luxury hotel at Wintergreen Resort and the Spruce Creek Resort and Market, a proposed five-star destination resort, hotel, restaurants, and public market. Based on information provided by Wintergreen Property Owners Association Inc. and	Vol 1. 5.1.9 Socioeconomics pp. 717	This response is subjective and appears to underplay the detrimental impact that the project could have. There is no comparable impact the base the demonstration on in the area. In Lexington, a much smaller project (a Virginia Department of Transportation project) in Middlebrook, VA is considered the culprit of a major impact to the jurisdiction's economy, even now that the project has been completed	Provide factual evidence to support the statements.

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	Wintergreen Resort Inc., the proposed hotel would be located over 3 miles east of the project. According to developers, the proposed development is estimated to produce $15 million to $20 million in annual revenue. Based on information provided by the developer, the ABM mainline would cross the Spruce Creek Resort and Market in Nelson County, Virginia. Specifically, the developer is concerned that the project would cross the middle of the property, diminishing the attractiveness of the resort area and, thus, development of the resort would be stopped. We believe that construction of ACP and development of the hotel at Wintergreen Resort and the development of Spruce Creek Resort and Market could be accomplished such that impacts associated with ACP are reduced or mitigated for, while maintaining the appeal of the area as demonstrated by other residential and commercial developments in the area and similar projects throughout the county.			
37	We received comments from Wintergreen Resort, Nelson County, Virginia and members of other communities regarding single-point access roads and the ability to evacuate in event of an emergency.	Vol 1. 5.1.13 Reliability and Safety pp. 723	Wintergreen Resort has a debris-flow potential at or near the river's point entrance, proximate to the pipeline activities.	Address debris-flow potential in this area, as well as alternative access for the community.
38	ACP and SHP would temporarily and permanently impact the environment.	Vol 1. 5.3.14 Cumulative Impacts pp. 722	Agree, however many statements and responses in this report do not portray this fact.	Ensure the report consistently reflects this statement.
39	The potential impacts that we considered as part of our cumulative review pertain to geology and soils; groundwater, surface water, and wetlands; vegetation; wildlife; fisheries and aquatic resources; land use; special interest areas; and visual resources; socioeconomics; cultural resources; air quality (including climate change); and noise.	Vol 1. 5.1.14 Cumulative Impacts pp. 728	Review and assessment was conducted based on the general and insufficient data supplied by the ACP reports.	Once FERC has required to provide adequate data for analysis, allow sufficient time for FERC to re-review potential impacts prior to approval.
40	Alternatives	Vol 1 5.3.15 Alternatives pp.	Based on the desktop review provided by the ACP, there	Re-evaluation of alternative routes may be

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		723-724	does not appear to be a significant difference between the potential alternatives and the currently proposed pipeline corridor.	appropriate once better data is available.
41	h. justify each modification relative to site-specific conditions	Vol 1. 5.2 FERC Staff's Recommended Mitigation pp. 724	We believe this is one of the most critical points, and one that cannot be achieved by relying on the existing available data.	Conduct further studies and provide a plan that addresses these concerns
42	17. Prior to construction	Vol 1. 5.2 FERC Staff's Recommended Mitigation pp. 729	This should be "Prior to approval"	Revise to read "prior to approval"
43	31. **Prior to the close of the draft EIS comment period,** Atlantic shall identify any specific construction, restoration, and/or operation mitigation measures identified by the MNF that would be implemented to promote compatibility with the restoration and management of disjunct red spruce and spruce-hardwood communities. (Section 4.4.6.1) *Conclusions and Recommendations* 5-34 32. **Prior to the close of the draft EIS comment period,** Atlantic shall file with the Secretary and the FS a revised BF that describes vegetation communities and construction and operation impacts according to the protocols and classification systems requested by the GWNF, and based on vegetation data collected during surveys. (Section 4.4.6.7) 33. **Prior to construction,** Atlantic shall file with the Secretary and the FS a revised *Restoration and Rehabilitation Plan* and *COM Plan*, that incorporates the seed mixes and application techniques, developed in coordination with the MNF and GWNF, that will be used for restoration of construction workspaces on NFS lands. (Section 4.4.8) 34. **Prior to the close of the draft EIS comment**	Vol 1. 5.7 FERC Staff's Recommended Mitigation pp. 730-731	We believe that any study that is valuable for the appropriate assessment of the ACP through those areas controlled by the Forest Service, state agencies or otherwise, are also critical for those privately-owned and typically more populated areas as well.	Conduct further studies and provide a plan that addresses these concerns

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	period, Atlantic shall file with the Secretary, and provide to the FWS, FS, WVDNR, and VDGIF, a revised *Karst Mitigation Plan*, developed in coordination with the appropriate agencies that takes into account unknown underground features, porosity, and connectivity of these subterranean systems, and the potential implications to subterranean obligate species. Conservation measures included in the revised *Karst Mitigation Plan* shall be designed to appropriately address these potential impacts. (Section 4.5.2.4)			
44	Discuss how the creation of forest edge or fragmentation would affect habitat and wildlife, including potential impacts on federally listed threatened and endangered species and migratory birds. Describe measures that Atlantic and DTI will implement to avoid, minimize, or mitigate impacts on interior/core forest habitat. (Section 4.5.6)	Vol 1. 5.2 FERC Staff's Recommended Mitigation pp. 732	Discuss in detail how clearing for the ACP will affect the potential for landslides and specifically where those areas are and what the potential extent of the damage might be	Conduct further studies and provide a plan that addresses these concerns
45	NOTE: Applicable road construction specifications will be attached pending additional discussion with USFS.	Vol II. Appendix G 2.1.1.4 Access pp. 26	What is appropriate within the USFS lands is also appropriate on privately-owned lands.	Make specifications applicable to all land areas.
46	Locations where blasting may be required on NFS lands are identified in the Blasting Plan.	Vol II. Appendix G 2.1.4 Trenching pp. 29	If it's important on NFS lands, then it's important on private lands	This should also be done for private lands as well so that all owners near these areas are identified and notified before this pipeline is approved
47	Additionally, excavated rock may be buried within the limits of the construction right-of-way, crushed with a rock pulverizer and incorporated into fill, or used as gravel to upgrade access roads. Excavated material not required for backfill will be removed and disposed of at approved upland disposal sites.	Vol II. Appendix G 2.1.6 Lowering-in and Backfilling pp. 30	1-Burying rock will disturb more area and create a sump for water to accumulate in thereby providing more weight and lubrication in areas that may already be prone to slippage. 2-excavated material taken to other site should be mapped and documented so that future "unsuspecting" landowners do not build on uncontrolled fill. This does happen and can cause foundation failures.	Develop a more sustainable plan for the excavated rock.

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48	No water impoundment structures are proposed to be located on NFS lands.	Vol II. Appendix G 2.1.7 Hydraulic Testing pp. 31	Are there water impoundment structures proposed in Nelson County or other privately owned areas?	Identify and provide design for any water impoundment structures along the pipeline. Do not address only NFS lands.
49	Note: Does USFS designate a Fire AO that is different from the overall AO?	Vol II. Appendix G 5.3.2 ACP Project Responsibilities pp. 64	What is appropriate on USFS lands should also be executed on privately-owned lands	What is appropriate on USFS lands should also be executed on privately-owned lands
50	The FSOs will contact the USFS _____	Vol II. Appendix G 5.5 Fire Danger Ratings pp. 66	? What is the blank?	
51	If blasting occurs within 500 feet of an identified water well,	Vol II. Appendix G 6.7.1 Protection of Aboveground and Underground Structures pp. 71	The susceptibility of the wells is based on the geology.	A hydrogeologist should be consulted for all of these instances.
52	If blasting occurs within 150 feet of aboveground structures,	Vol II. Appendix G 6.7.1 Protection of Aboveground and Underground Structures pp. 75	Too close.	Recommend a minimum of 500'
53	An Order 1 Soil Survey (Survey) was performed between May 9 and June 22, 2016 along the available sections of the approximately 21.4-mile portion the route between MP 47 and MP 115. The Survey included approximately 5.2 miles of the route within the Marlinton Ranger District in the MNF, and 15 miles in the Warm Springs and North River Districts in the GWNF. Due to access restrictions associated with cultural resource clearance, a full Survey was not completed in an approximately 1.2 mile section of the route located near MP 155 and MP 156 in the GWNF Pedlar Ranger District.	Vol II. Appendix G 8.2 Soils pp. 88	This needs to be completed for the steep portions of Nelson County. This area is known to have unstable landforms particularly when combined with construction, a big storm event or both.	Conduct further studies and provide a plan that addresses these concerns
54	Atlantic developed and implemented the Slip Avoidance, Identification, Prevention, and Remediation - Policy and Procedure (SAIPR) in August of 2015 to avoid, minimize, and mitigate potential landslide issues in slip prone areas prior to,	Vol II. Appendix G 8.4 Critical Areas pp. 89	Do not see SAIPR Attachment (C)	Include attachment

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	during, and after construction. The SAIPR (Attachment C) includes considerations for slips associated with pipeline construction during routing, engineering design, preconstruction planning, construction, and post construction.			
55	Atlantic recognizes the increased risk in slips associated with pipeline construction particularly while traversing steep slopes.	Vol II. Appendix G 8.4.1 Steep Terrain pp. 89	Agree	Conduct further studies and provide a plan that addresses these concerns
56	complete a geotechnical analysis to evaluate the causes of past slope failures along its pipeline rights-of-way; identify procedures and measures to identify, prevent, contain, and remediate slope failures; and develop and implement policy and procedures to address slip prone areas.	Vol II. Appendix G 8.4.1 Steep Terrain pp. 90	These need to be done before approving the pipeline alignment. Avoidance is the only way to truly reduce the risk of construction induced failures!	Conduct further studies and provide a plan that addresses these concerns
57	This section is pending additional input and recommendations from the USFS regarding seed mixes, soil amendments, and cultural practices.	Vol II. Appendix G 10.3.3 Riparian Restoration pp. 154	What is appropriate on USFS lands should also be executed on privately-owned lands	What is appropriate on USFS lands should also be executed on privately-owned lands
58	This section is pending additional input and recommendations from the USFS regarding seed mixes, soil amendments, and cultural practices.	Vol II. Appendix G 10.3.4 Wetland Restoration pp. 155	What is appropriate on USFS lands should also be executed on privately-owned lands	What is appropriate on USFS lands should also be executed on privately-owned lands
59	2.Will avoid the removal of mature trees and landscaping within the construction work area, unless necessary for safe operation of equipment, or as specified in the landowner agreements	Vol III. Appendix J Intro pp. 8	Trees that are currently in wooded areas and then have construction around them will be highly susceptible to mortality. This may take 5-10 years but is a common occurrence, especially with older/mature trees.	Expand impact assessment to consider the damage to critical root zones of large trees that are to remain.
60	4. During landowner negotiations, identify location of septic system and avoid or develop a replacement plan with landowner during construction.	Vol III. Appendix J Intro pp. 8	Reserve areas are also important.	Identify and avoid reserve areas so that the homeowner has that area when the original septic field fails.
61	**Revised Universal Soil Loss Equation**	Vol III. Appendix P RUSLE pp. 276	Why was the analysis only done for Bath County?	Analyze all privately owned areas, including Nelson County.
62	Recognizing that the location of slope failures can	Attachment C. 2.0	Absolutely	Conduct further studies and provide a plan that

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COMPANIES/ORGANIZATIONS COMMENTS

CO120 – Friends of Nelson and Friends of Wintergreen (cont'd)

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	be challenging to predict, the purpose of this procedure is to avoid and/or reduce the number and severity of slope failures that occur on new Dominion pipeline ROW, and planned expansion of existing Dominion ROW.	Introduction pp. 13		addresses these concerns.
63	The procedure provides the following: ▪ A method of identifying potential slope failures; ▪ Preventative measures; ▪ A method of protecting waterbodies from slope failure, material runoff;	Attachment C. 2.0 Introduction pp. 13	Identify these procedures and have reviewed prior to approval.	Identify these procedures and have reviewed prior to approval.
64	Slope failures are permitted and occur naturally in a large portion of the DEIS operating area, and in particular the Appalachian Plateau and Valley and Ridge Provinces. Susceptibility is generally associated with cohesive soils (Silts and Clays) formed on steeper slopes that are triggered by precipitation, gravity and human activities. This region has some of the highest landslide or slope failure susceptibility in the United States, as indicated	Attachment C. 2.0 Introduction pp. 13	Agree, steep susceptibility can be increased by human activity in soils that lack cohesiveness, have a confining layer beneath the non-cohesive layers, and are dependent on the root structure for stability.	Conduct further studies and provide a plan that addresses these concerns
65	Southeast of the Appalachian Plateau, the flanks of the Appalachian Ridges and the Blue Ridge are covered by colluvium that is highly susceptible to sliding. Because the colluvium covers many types of bedrock, the steep declivities of landslide incidence and susceptibility cross formational boundaries.	Attachment C. 2.1.1 Appalachian Highlands Region pp. 17	Agree. That is why DEIS concentrated more on these landforms and colluvial areas in our report than the actual underlying geology.	Conduct further studies and provide a plan that addresses these concerns
66	Most slope movements in the colluvium consist of slowly moving debris slides although many debris avalanches and debris flows can occur. Rainfall and the subsequent increase in groundwater conditions is a common trigger for landslides in this region, with the factors being the soil types and slope of the land surface, all of which relate to the underlying	Attachment C. 2.1.1 Appalachian Highlands Region pp. 17	Agree.	Conduct further studies and provide a plan that addresses these concerns

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	bedrock geology, and in many cases to slope modifications by human activity. Widespread occurrences of landslides coincide with major rainfall events, especially when the remnants of large storms track over the mountains.			
67	Slope Failures can be caused by nature, by man, or a combination of both. A listing of common contributing factors to slips is below. Human Activities ▪ Removal of shallow bedrock on steep slopes and replacement with a weaker backfill material, such as soil fill. ▪ Removal of vegetation and trees; ▪ Changes in slope configuration, such as additional load placed on the top of the soil mass, or removal of material near the bottom of the soil mass (such as trenching for pipeline construction); and ▪ Changes to the surface water or groundwater regime, such as the addition of water to a slope. Natural Factors ▪ Weather; ▪ Erosion of toe support; ▪ Weathering of bedrock can produce weak, slope failure prone materials; ▪ Earthquakes; and, ▪ Rapid lowering or rising of water level.	Attachment C. 2.3 Causes of Slope Failure pp. 20-21	Agree	Conduct further studies and provide a plan that addresses these concerns
68	Pipeline route selection is an important component of avoiding or minimizing the impacts of slope failures for new natural gas pipelines.	Attachment C. 3.0 Pipeline Route Selection pp. 23	Agree, but without good data maps, Order 1 soils, etc. this can't be achieved.	Conduct further studies and provide a plan that addresses these concerns.
69	A preliminary route can be established using tools such as topographic maps, Google Earth HI, available light detection and ranging (LIDAR) data,	Attachment C. 3.1 Preliminary Route Selection pp. 23	Agree. Using appropriate scaled topographic information, topographic analysis should be used in concert with acquiring better soils information to make the best	Using appropriate scaled topographic information, topographic analysis should be used in concert with acquiring better soils information to make the best

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COMPANIES/ORGANIZATIONS COMMENTS

CO120 – Friends of Nelson and Friends of Wintergreen (cont'd)

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	and other computer mapping software.		decisions.	decisions.
70	During preliminary route layout, care must be taken to traverse slopes perpendicular to topographic contours, and to avoid traversing slopes greater than 30 degrees (58 percent) to the maximum extent practicable. If traversing slopes of greater than 30 degrees (58 percent) cannot be avoided, it must be minimized, and these areas will be a focus of the desktop study and further evaluation during the field reconnaissance process	Attachment C. 3.1 Preliminary Route Selection pp. 21	Agree. However, the angle of repose is not a static value of 30 degrees (58 percent) and is only one of several factors influencing slope stability.	The field reconnaissance process should happen long before this alignment is approved.
71	The minimum width of a study corridor during the desktop review phase is 1000 feet, but may be expanded if necessary based on the project specifics. Geographic information system (GIS) is the most efficient method to conduct the desktop study. A project-specific GIS database can be developed using various information sources including, but not limited to those listed below. Additional information in the GIS includes topography, residential and commercial structures, land use, geology, streams, wetlands, cultural resource sites, cultural features such as roads, railroads, public lands and cemeteries to be used during the desktop study to refine the pipeline route prior to beginning the field reconnaissance. Potential access roads must be identified during the desktop study for further evaluation during the field reconnaissance.	Attachment C. 3.2 Desktop Study pp. 22	The desktop study is a minimum of a 1000' corridor. We argue that the [recommended] topographic analysis and Order 1 Soil Survey should have a similar corridor of analysis.	Conduct further studies and provide a plan that addresses these concerns
72	The United States Geological Survey (USGS) maintains publically available GIS data for a digital compilation of landslide overview mapping of the conterminous United States at http://pubs.usgs.gov/of/1997/ofr-97-0289/ . This dataset consists of polygons enclosing areas of landslide incidence and susceptibility for the	Attachment C. 3.2.1 Existing Landslide Maps and Data pp. 22-23	Again, this is general information, but even so, it does not appear to have been used in the analysis of the pipeline location. There is also site-specific mapping of debris-flows, such as the 1969 storm event, available from USGS that should be used for Nelson County.	Use all data available.

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No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
	conterminous United States. The purpose of this dataset is to give the user a general indication of areas that may be susceptible to landslides, and is not suitable for local planning or site selection without further investigation on the ground.			
73	State specific information other than from USGS as discussed above are not available for Maryland, Ohio, New York, Pennsylvania or Virginia.	Attachment C. 3.2.1 Existing Landslide Maps and Data pp. 23	This is not an accurate statement. Virginia has many debris flow maps and site specific studies developed by USGS and Nelson County is one of them!	Perform the necessary research to adequately catalog existing information.
74	The maps must be used in the desktop study to identify areas of past slope failures, the slopes at the highest risk for slope failures, and the route adjusted to the extent practicable to avoid the highest hazard areas.	Attachment C. 3.2.1 Existing Landslide Maps and Data pp. 24	Agree, however all available data does not appear to have been used in the desktop review. Furthermore, the field reconnaissance and verification of the desktop results should occur prior to approval.	Use all available data and conduct field reviews prior to approval.
75	The DTI Project Team/field engineer may select a slope angle that is shallower than 30 degrees on a project-specific bases.	Attachment C. 3.2.2 Define Slopes of Greater Than 30 Degrees pp. 24	Many of the recent and historic debris flows in Nelson County are on slopes of less than 30 degrees or 58%. To rely strictly on the angle of repose is inconsistent with the other factors contributing to debris flows that are identified both in the DEIS and many reports.	The identification of steep slopes should be done prior to approval based on contemporary topographic information with final contour intervals are greater 4 feet. Identification of these areas should not be left to a field engineer to subjectively determine if the 30 degree (or 58% slope) threshold should be reduced.
76	The DTI Project Team/field engineer will review the soil survey information related to soil landscapes, soil formation, soil limitations for various land uses, and properties of the soils in the survey areas. In particular, information related to soil origin, slope steepness, drainage characteristics, typical soil profile with layer thickness, approximate depth to bedrock, and slope failure prone soils can be obtained from the soil survey.	Attachment C. 3.2.3 USDA Natural Resource Conservation Service Soil Surveys pp. 24	Again, this is improper use of the web soil survey. This information is inadequate for this study! The soil scientists that mapped Nelson County specifically stated to us that the majority of colluvial soils and those with high debris flow potential are specifically NOT shown on these maps. Furthermore, unless the DTI Project Team/ field engineer is a Licensed Professional Soil Scientist with experience with soil mapping in the Blue Ridge, they are likely incapable of accurately evaluating the soils maps and determining failure-prone soils.	Conduct further studies and provide a plan that addresses these concerns PRIOR TO APPROVAL.
77	Therefore, soil surveys provide a broad overview of	Attachment C. 3.2.3 USDA	Agreed.	Conduct an Order 1 soil survey for the entire route.

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CO120 – Friends of Nelson and Friends of Wintergreen (cont'd)

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	soil conditions but are not designed for site specific evaluations.	Natural Resource Conservation Service Soil Surveys pp. 24		
78	Where LiDAR data is unavailable for purchase, it may be deemed necessary to obtain project-specific LiDAR data by flying the route.	Attachment C. 3.2.4 Light Detection and Ranging (LiDAR) pp. 25	Agreed	This should be done prior to approval and not at the subjective determination of the DTI Project Team/field engineer.
79	LiDAR data is analyzed by developing a digital terrain model (DTM) that can be imported to various computer aided drafting software suites. The DTM can be imported into the project GIS during the desktop study and used to identify past slope failures, steep slopes and other terrain features useful in routing the pipeline.	Attachment C. 3.2.4 Light Detection and Ranging (LiDAR) pp. 25	Agreed	Therefore this is important information to have PRIOR TO APPROVAL.
80	Following data collection through the desktop study and field reconnaissance, a desktop slope failure risk assessment will be performed using the Desktop Slope Failure Risk Assessment Matrix included in Appendix A for new pipeline projects.	Attachment C. 3.4 Desktop Slope Failure Risk Assessment pp. 27	Understanding that better soil and topographic data is realistically required for a legitimate evaluation of susceptibility to landslides, please show us where this was done for Nelson County and what additional soil data, detailed topography and/or LiDAR data was used in this analysis??	Conduct further studies and provide a plan that addresses these concerns
81	Slope failures and slope failure prone areas must be included in the project plans. The following items must be included on the Stormwater Pollution Prevention Plans (SWPPP) and the Erosion and Sediment (E&S) control plans: ■Slope failure areas having high risk, as determined in Section 3.4; ■Existing slope failures; and. ■Slopes steeper than 30 degrees (58 percent).	Attachment C. 4.2 Document Slope Failure Areas on Project Plans pp. 30	Please provide the map of all existing slope failures. We assume that recent and historic failures as these, according to the experts at USGS, often reoccur in the same areas.	Provide map.
82	The project plans and specifications must include provisions for additional subsurface drainage on slopes greater than 30 degrees (58 percent). Include callouts and details in the E&S plans for location and type of drainage.	Attachment C. 4.4 Include Additional Drainage pp. 30	Please describe how this will be done without disturbing more area of the susceptible soil	Provide site-specific plans and techniques.
83	These locations will likely include areas with slopes	Attachment C. 4.5	Engineers are stuck on this slope range when it is only	Not rely on only the factor of slope to determine

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	steeper than 30 degrees (58 percent), or locations requiring pre-emptive repair of an existing slope failure in the proposed pipeline corridor	Engineered Details pp. 30	one factor and based on our experience probably not the most important factor that influences slope failure.	those areas that need to be avoided or additional mitigation for debris flows.
84	In the event a slope failure is documented during an inspection, the following steps must be followed. Each step is discussed in detail in the following subsections and summarized in Table 2.	Attachment C. 6.2 Responding to Slope Failures pp. 42	Includes no mention as to evaluating the number and location people or property downslope that may be impacted or killed during a major storm event that without the impact of construction may not have happened. If during or after the pipeline is constructed, failure occurs and it can be tied to the removal of vegetation or land manipulation during construction who will be responsible for damage to personal, federal or state property or for loss of life?	Be honest about the potential impacts and the plans if a catastrophic failure do occur.
85	■Name of observer; ■Date; ■Slope failure location, including latitude and longitude; ■Slope failure dimensions; ■Site photographs; ■Site sketch; ■Evidence of preexisting slope failures; ■Presence of surface water or groundwater; ■Estimate of slope steepness; ■Estimate of slope failure type (i.e., rotational, translational, earthflow, etc.); and ■ Slope failure priority based on Slope Failure Priority Guidance (Appendix D).	Attachment C. 6.2.5 Gather Data pp. 42	Again what about damages to adjacent property or persons?	Address adjacent property or persons.
86	Pipeline crossing the slope (sidehilling), but will likely be installed below top of bedrock surface	Attachment C. Appendix A Desktop Slope Failure Risk Assessment pp. 49	This practice disturbs more areas and soil and increases the susceptibility to failure.	Avoid sidehilling in Nelson County.
87	Brow Ditch Detail	Attachment C. Appendix B Select Typicals pp. 52	Is the illustration showing natural soils in place or fill?	Clarify illustration.
88	Trench Drain Detail (French Drain)	Attachment C. Appendix B Select Typicals pp. 59	Any time you install "French drains in the mountain soils/colluvial material you cause more disruption to the soil structure and therefore to the stability of the	Clarify that these are not appropriate in areas [once appropriately identified] a failure prone / debris-flow areas

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CO120 – Friends of Nelson and Friends of Wintergreen (cont'd)

No.	DEIS STATEMENT	SOURCE LOCATION	COMMENT	RECOMMENDATION
			soil slope. Furthermore where this excess water gets relocated to can cause significant damage in those areas.	
89	Seep Collector Detail	Attachment C. Appendix B Select Typicals pp. 67	Again this may just cause more chance for failure at the point of discharge!	Clarify that these are not appropriate in areas [once appropriately identified] a failure prone / debris-flow areas
90	Gabion Basket / Jersey Barrier Containment Detail	Attachment C. Appendix B Select Typicals pp. 77	This will be ineffective for most debris flows / Lahars and will add more large material to be transported towards whatever is down gradient (houses, roads, bridges, streams)	Avoid this as an effective containment for debris flows.

COMPANIES/ORGANIZATIONS COMMENTS

CO121 – Public Interest Groups (representing 12 separate groups)

UNITED STATES OF AMERICA
BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

In the matter of:	)	
	)	
Atlantic Coast Pipeline, LLC	)	
Docket Nos. CP15-554-000	)	
PF15-6-000	)	
	)	April 5, 2017
Dominion Transmission, Inc.	)	
Docket Nos. CP15-555-000	)	
PF15-5-000	)	
	)	
Atlantic Coast Pipeline, LLC and	)	
Piedmont Natural Gas Company	)	
Docket No. CP15-556-000	)	
	)	

JOINT COMMENTS BY PUBLIC INTEREST GROUPS
ON DRAFT ENVIRONMENTAL IMPACT STATEMENT

PURSUANT to the National Environmental Policy Act ("NEPA") at 42 U.S.C. § 4332, and 40 C.F.R. § 1502.9, now come the North Carolina Waste Awareness and Reduction Network ("NC WARN"); Clean Water for North Carolina; the Blue Ridge Environmental Defense League ("BREDL"), and its chapters: Protect Our Water! (Faber, VA), Concern for the New Generation (Buckingham, VA), Halifax & Northampton Concerned Stewards (Halifax and Northampton, NC), Nash Stop the Pipeline (Spring Hope, NC); Wilson County No Pipeline (Kenly, NC), Sampson County Citizens for a Safe Environment (Faison, NC), Cumberland County Caring Voices (Eastover, NC), EnvironmentaLEE (Sanford, NC), Pee Dee WALL (Wadesboro, NC) and No Fracking In Stokes (Walnut Cove, NC); Clean Air Carolina; The Climate Times; Climate Voices U.S.; Chatham Research Group; Winyah Rivers Foundation; Haw River Assembly; River Guardian

Foundation; 350.org Triangle; and EcoRobeson (together "the Public Interest Groups"), with comments on the Draft Environmental Impact Statement ("DEIS") for the Atlantic Coast Pipeline ("ACP").

The Public Interest Groups are not-for-profit corporations under the laws of North Carolina and Virginia law acting in the public interest and/or community groups organized to protect the family and property of their members. Several of the Public Interest Groups, including but not limited to NC WARN and BREDL, are intervenors in this proceeding pursuant to Commission Notice Granting Late Interventions, November 8, 2016. Although the interests of the intervenors are more clearly stated in their respective motions to intervene, those same interests are held by each of the Public Interest Groups.[1] The Public Interest Groups and their members will be significantly affected by the proposed ACP.

These comments are in response to the application filed with FERC for a $5.622 billion[2] pipeline project proposed by ACP, LLC, consisting of Dominion Power, Duke Energy, Piedmont Natural Gas ("Piedmont") (a wholly-owned subsidiary of Duke Energy) and others (altogether "Dominion"), in FERC Docket Nos. CP15-554, CP15-555, and CP15-556. Dominion seeks a Certificate of Public Convenience and Necessity ("certificate") from FERC under Section 7(c) of the Natural Gas Act ("NGA") and other regulations to build the ACP.

[1] http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20160411-5055
http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20151109-5041

[2] Total projected costs are $5.622 billion ($5.136 billion for the ACP, plus $486.4 million for Dominion's Supply Header.

The DEIS is fatally flawed as it does not contain relevant and significant information about the environmental, socioeconomic, and cultural impacts of the pipeline project. Subsequent to the issuance of the DEIS, Dominion has supplemented its original application with thousands of pages of additional information and this requires FERC to rescind the DEIS and supplement it.

OUTLINE OF COMMENTS

The joint comments begin on page 17, following sections on the Process and the NEPA analysis. The following is the outline of those comments:

I. The DEIS fails to determine the need for the proposed project.

A. The DEIS does not sufficiently consider the need for the project and the no action alternative.

B. FERC did not rigorously explore or objectively evaluate reasonable alternatives.

C. Dominion failed to include relevant financial information on the need for the ACP.

1. Affiliate transactions require higher levels of scrutiny.

2. Risk is shifted from shareholders to ratepayers when ratepayers provide revenues.

D. Natural gas companies have a history of overearning on pipelines.

E. Natural gas companies have a history of overbuilding pipelines.

F. Existing pipelines are underutilized.

G. Reliance on the Clean Power Plan ("CPP") as an indicator of need is not reasonable.

II. The DEIS fails to consider the reasonably foreseeable decline of shale gas supply for the ACP.

A. Future U.S. natural gas supplies are overestimated, which could result in stranded assets.

B. EIA has overestimated future U.S. natural gas supplies by 50% or more.

C. U.S. natural gas production peaked in February 2016.

D. Future shale production in the Marcellus and Haynesville plays is overestimated.

E. Total U.S. natural gas production is in decline.

F. Shale gas economics are not rational.

G. Ratepayers could be stuck with stranded assets.

III. The DEIS fails to include critical environmental analysis necessary to determine environmental and socioeconomic impacts.

A. The DEIS does not adequately assess safety concerns.

B. The DEIS is inadequate in its analysis of cultural resources, including those of Native Americans.

C. The DEIS does not adequately address economic impacts from the proposed pipeline.

D. The DEIS does not adequately address sociological and demographic issues related to environmental justice.

E. The DEIS provides insufficient and inaccurate information on land impacts and land use concerns.

F. The DEIS presents an inadequate analysis of the impacts of erosion and sedimentation from pipeline construction.

G. The DEIS fails to properly address the impacts of the proposed pipeline on groundwater resources and safety of well users.

H. The DEIS does not address water quality impacts from the proposed ACP or provide any information on mitigation.

IV. The DEIS fails to adequately assess greenhouse gas emissions and climate change impacts.

A. FERC utilizes an outdated methane global warming potential in the ACP DEIS.

B. FERC fails to adequately assess the emissions and impacts resulting from the ACP.

C. Information on compressor, meter and regulating, and valve control stations is incomplete.

D. Compressor stations release excessive emissions, resulting in excessive environmental impacts.

E. The DEIS provides little information on "upgrades" to existing compressor stations.

F. FERC's proposed mitigation to offset GHG emissions is inadequate.

G. FERC failed to fully evaluate lifecycle GHG emissions.

H. FERC Failed to meaningfully evaluate the impacts of GHG emissions.

V. The DEIS fails to adequately consider all reasonable direct and indirect impacts and cumulative impacts, including those impacts associated with gas development.

A. There is a clear causal connection between the proposed ACP and shale gas development.

B. The impacts of shale gas development are reasonably foreseeable.

C. The DEIS fails to adequately consider cumulative impacts, including those impacts associated with gas development.

VI. The DEIS ignored the environmental and socioeconomic impacts of the Piedmont Pipeline.

PROCESS

On September 18, 2015, the ACP, LLC filed an application under section 7(c) of the Natural Gas Act, requesting authorization to construct, own, and operate the ACP, including three compressor stations and at least 564 miles of pipeline across West Virginia, Virginia, and North Carolina. The ACP is a joint venture of Dominion Resources, Inc., Duke Energy Corporation, Piedmont Natural Gas Company, Inc. (a wholly owned subsidiary of Duke Energy), and AGL Resources, Inc. (collectively, "Dominion"). The purpose of the proposed ACP is to deliver up to 1.5 billion cubic feet per day of fracked natural gas to customers in Virginia and North Carolina. On October 2, 2015, the Commission filed its Notice of Application, providing additional details about the application and outlining the review process, and opportunities for public comment.

The Commission has authority under Section 7 of the Interstate Natural Gas Pipelines and Storage Facilities Act ("NGA") to issue a certificate to construct a natural gas pipeline. As described in the Commission guidance manuals, environmental documents are required to describe the purpose and commercial need for the project, the transportation rate to be charged to customers, proposed project facilities, and how the company will comply with all applicable regulatory requirements.[3] The applicants must evaluate project alternatives, identify a preferred route, and complete a thorough environmental analysis – including consultation with appropriate regulatory agencies, data reviews, and field surveys. The Commission is required to analyze the information

[3] February 2017 Draft Guidelines: https://www.ferc.gov/industries/gas/enviro/guidelines/guidance-manual-volume-1.pdf ; August 2002 Guidelines: https://www.ferc.gov/industries/gas/enviro/guidelines/guidance-manual-volume-1.pdf

provided by Dominion and the other applicants to determine if the project is one of public convenience and necessity. The purpose of the Commission's review is to reduce overbuilding of pipeline capacity in order to protect consumers and property owners.

As part of its review process, the Commission prepares environmental documents, and in this case, a DEIS was prepared and released on December 30, 2016. As part of the release, the Commission provided a public comment period until April 6, 2017. Subsequently, the Commission scheduled "public comment sessions" in ten locations along the ACP route to allow for public comments.[4]

On January 10, 2017, January 17, 2017, January 23, 2017, January 27, 2017, February 23, 2017, and March 24, 2017, Dominion filed additional documents supplementing its original application.[5] These filings contain thousands of new pages of information, voluminous appendices, and attachments on environmental issues directly relevant to the DEIS. The contents of the new supplemental filings include, but are not limited to: historic properties in West Virginia, Virginia, and North Carolina; supplemental updates on compressor stations, metering and regulation stations; geological considerations; archaeological sites; impacts of forest fragmentation on bird species; maps of non-jurisdictional facilities; engineering updates on horizontal directional drilling and hydrofracture risk; cultural resources; restoration plans for wetlands; considerations

[4] The Public Interest Groups agree with criticism of the failure to have open session public hearings made by the Society of Environmental Journalists in its February 23, 2017, letter to FERC. www.abralliance.org/wp-content/uploads/2017/02/SoEJ_letter_to_FERC_Chair_LaFleur_20170223.pdf

[5] http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170110-5142
http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20170123-5110
http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20170119-5180
http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170224-5149
http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170127-5202
http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170324-5283

of soil, erosion, steep slopes, and river crossings; direct impacts on forested sites in West Virginia, Virginia, and North Carolina; impacts on streams and biotic resources; removal and relocation of aquatic species; and correspondence with state agencies and between state and federal agencies on water quality, air quality, wildlife resources, threatened and endangered species, and mitigation.

In response, the Public Interest Groups filed Joint Motion to Rescind or Supplement DEIS on January 23, 2017, and Supplement to Joint Motion to Rescind or Supplement DEIS Based on New Filings on February 15, 2017.[6] Even though the Public Interest Groups have not submitted similar motions to rescind or supplement the DEIS based on the latest Dominion filings, the arguments in those motions for the need of a supplemental DEIS have only grown more compelling. The motions to supplement the DEIS are incorporated herein by reference.

CO121-1

NEPA ANALYSIS

The Commission's decision to grant a certificate to construct the ACP is a "major Federal action" within the meaning of the National Environmental Policy Act ("NEPA"), and any consideration of the certificate must be preceded by the preparation of an Environmental Impact Statement ("EIS"). Pursuant to 42 U.S.C. § 4332, environmental documents, including the DEIS under consideration, must address:

> "(i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between the local short-term uses of the project as compared to the long term use of the land, and (v) any irreversible and irretrievable commitments of

[6] Joint Motion to Rescind or Supplement DEIS, January 23, 2017, FERC Accession No. 20170124-5017. Supplement to Joint Motion to Rescind or Supplement DEIS Based On New Filings, February 15, 2017.

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CO121-1 See the response to comment CO6-1.

CO121-1 (cont'd)

> resources which would be involved in the proposed action should it be implemented."

The principal case on the adequacy of environmental documents, *Marsh v. Oregon Natural Resources Council*, provides that under NEPA, "agencies [must] take a 'hard look' at the environmental effects of their planned action."[7] As discussed throughout these comments, FERC's analysis in the DEIS for the proposed ACP fails to meet NEPA's standards in numerous ways.

Of immediate concern, new and significant information was added by Dominion to the applications subsequent to the date the DEIS was filed.[8] This new information clearly supplements the information in the original application, the information supplied to FERC staff for their review, and any information readily available to intervenors and the public. As such, the Commission is required to supplement the DEIS after receiving the new filings.

Rules promulgated by the Council on Environmental Quality pursuant to NEPA provide mandatory guidance to all Federal agencies on the preparation of environmental statements. Because the DEIS was issued without sufficient information and allows the applicants to later submit necessary materials, "it appears that the EIS is a 'rolling' document providing just a snapshot in time . . . creat[ing] a considerable challenge for stakeholders and members of the public to follow the documentation provided, or know which material is most current in order to provide the most relevant comments."[9] To

[7] 490 U.S. 360, 374, 109 S.Ct. 1851, 104 L.Ed.2d 377 (1989).

[8] See footnote 5.

[9] EPA Comments on Mountain Valley Pipeline, December 20, 2016, Accession No. 20161221-5087.

CO121-1 (cont'd)

remedy those NEPA violations, FERC must prepare a revised DEIS that fully assesses the need for, impacts of, and alternatives to the proposed action.

40 C.F.R. 1502.9(c)(1)(ii) specifically addresses the obligation of the agencies to supplement the environmental statements, stating:

> (c) Agencies:
>
> (1) Shall prepare supplements to either draft or final environmental impact statements if:
>
> (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
>
> (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

As shown above, the new filings by Dominion are squarely within the requirements of this rule. The information is significant and directly relevant to environmental concerns and impacts addressed in the DEIS and, after review by the agency and public review, the information in the new filings is likely to have a bearing on the Commission's action.[10]

Case law on the agency's requirement to supplement an environmental document is clear. New information causes environmental documents to be supplemented, even after the environmental document has been completed and the agency action taken. In its review of one action, the Court found there "are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."[11] Of course, not all new information is significant or

[10] See Joint Motions to Supplement DEIS in footnote 6.

[11] *Norton v. Southern Utah Wilderness Alliance*, 542 U.S. 55 (2004) (new study of use of park lands).

CO121-1 (cont'd)

relevant; but according to the requirements of *Marsh v. Oregon Natural Resources Council*, the Commission is required to take a "hard look" at the new information and, after review, incorporate it into environmental documents. In addition to requiring a "hard look" at all information, the Court specifically endorsed the "hard look" at new information even after a proposal had received its initial approval, and permit, from the agency. "When new information is presented, the agency is obligated to consider and evaluate it and to make a reasoned decision as to whether it shows that any proposed action will affect the environment in a significant manner not already considered."[12]

In addition to case law and statutory requirements, the Commission has promulgated a series of guidance documents for the preparation of environmental documents. The August 2002 guidelines were adopted by the Commission, while the 2015 guidelines remained in draft. Subsequent to the issuance of the ACP DEIS, citations to these guidance documents were removed from the FERC website, and replaced with a citation to the 2017 guidance document. The 2017 guidance documents recommend that a developer assess its project's resilience to hazards associated with climate change, such as storm surges and rising sea levels. The agency emphasized that the book is guidance only and "imposes no new legal obligations." This is consistent with a directive issued by the Obama administration in August, asking federal agencies to incorporate climate change impacts into their environmental reviews.[13] Further, the

[12] *Id.*, 490 U.S. at 374; also endorsed by the Court in *Arkansas Wildlife v. U.S. Army Corps*, 431 F.3d 1096 (Fed. 8th Cir., 2005).

[13] The White House Council on Environmental Quality, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*: www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance_.pdf

CO121-1 (cont'd)

2017 document lists information that is often missing from project applications and not mentioned in the previous iterations, including local climate information, air quality modeling and data on emissions from pipelines. It is unclear under which of the guidance documents FERC staff used or is using on the present DEIS.

NEPA's EIS requirement "guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision."[14] Information must be provided in a timely manner to ensure that the public can meaningfully participate in the decision-making process.[15] An agency must "not act on incomplete information, only to regret its decision after it is too late to correct." As noted above, the new supplemental filings by Dominion subsequent to the issuance of the DEIS contains information vitally important to the analysis of the ACP's environmental impacts. When an agency publishes a draft EIS, it "must fulfill and satisfy to the fullest extent possible the requirements established for final statements in section 102(2)(C) of the Act. … If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion." The agency shall make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action."

Courts have explained that, when performing an EIS, an agency "should take to the public the full facts in its draft EIS and not change them after the comment period

[14] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

[15] *League of Wilderness Defenders/Blue Mountain Biodiversity Project v. Connaughton*, 752 F.3d 755, 761 (9th Cir. 2014) ("Informed public participation in reviewing environmental impacts is essential to the proper functioning of NEPA.").

CO121-1 (cont'd)

unless, of course, the project itself is changed."[16] NEPA "expressly places the burden of compiling information on the agency" so that the public and other governmental bodies can evaluate and critique the agency's action.[17] "The now traditional avenue of independent comment on decision-making by public interest organizations would be narrowed if interested parties did not have presented in the EIS the analysis and data supporting an agency's decision." Such information must be included in the draft EIS, as opposed to supplied in the final EIS following public comments because "*the purpose of the final EIS is to respond to comments rather than to complete the environmental analysis (which should have been completed before the draft was released).*"[18]

As the CEQ's regulations and case law make clear, a draft EIS that fails to provide the public a meaningful opportunity to review and understand the agency's proposal, methodology, and analysis of potential environmental impacts violates NEPA.[19] The information regarding environmental impacts that is missing from the DEIS and will not be provided by the applicants in a manner that facilitates meaningful public disclosure and participation includes critical information, which the applicants either provided after the issuance of the DEIS or might provide after the comment period on the DEIS is over – or even after the conclusion of the entire NEPA process. That

[16] *Burkey v. Ellis*, 483 F. Supp. 897, 915 (N.D. Ala. 1979).

[17] *Grazing Fields Farm v. Goldschmidt*, 626 F.2d 1068, 1073 (1st Cir. 1980).

[18] *Habitat Educ. Ctr. v. U.S. Forest Servs.*, 680 F. Supp. 2d 996, 1005 (E.D. Wis. 2010) (emphasis added), aff'd sub nom. *Habitat Educ. Ctr., Inc. v. U.S. Forest Serv.*, 673 F.3d 518 (7th Cir. 2012).

[19] *California ex rel. Lockyer v. U.S. Forest Service*, 465 F. Supp. 2d 942, 948-50 (N.D. Cal. 2006); see also *Idaho ex rel. Kempthorne v. U.S. Forest Service*, 142 F. Supp. 2d 1248, 1261 (D. Idaho 2001) ("NEPA requires full disclosure of all relevant information before there is meaningful public debate and oversight.").

CO121-1 (cont'd)

information is necessary for FERC to take the required hard look at the environmental impacts of the proposed projects and to allow the public to evaluate and meaningfully participate in the NEPA process.

FERC's failure to require such voluminous and significant information to be evaluated and included in the DEIS for public review and comment clearly demonstrates that the agency has not made "every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action."[20] FERC is required to "guarantee…that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision."[21]

FERC's failure to include significant amounts of critical environmental information in the DEIS seems to be part of a recent trend in draft statements prepared by FERC for major greenfield pipelines. For example, in comments on the DEIS for the Constitution Pipeline, EPA stated that a substantial amount of information was omitted from the DEIS, including information regarding impacts to geology and soils, waterbodies, wetlands, wildlife and vegetation, air emissions, and cumulative impacts.[22] EPA repeatedly explained that the lack of information prevented other agencies and the public from meaningfully participating in the NEPA process.[23] Likewise, in comments on

[20] 40 C.F.R. § 1502.9(a) (emphasis added).

[21] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

[22] EPA, *Comments on the Constitution Pipeline DEIS* p. 3-9 (Apr. 9, 2014) (Docket No. CP13499-000, Accession No. 20140409-5120).

[23] *Id* at 3 (The lack of information "negates the ability of agency specialists and the public to review the analysis and comment on it.")

CO121-1 (cont'd)

the DEIS for the Sabal Pipeline, EPA said that it had "very significant concerns over the FERC's process and full and objective compliance with the NEPA regulations at 40 CFR Part 1500."[24] EPA even suggested that FERC "appear[ed] to be justifying decisions made prior to implementing the NEPA process." In comments on the DEIS for the PennEast Pipeline, the EPA said it had "significant concerns regarding the alternatives analysis, a number of important topics for which information is incomplete, and the direct, indirect and cumulative impacts of the proposed action on the environment and public health, including impacts to terrestrial resources, including interior forests, aquatic resources, and rare, threatened and endangered species."[25] EPA emphasized that "[a] significant amount of information is omitted from the DEIS and is proposed to be filed by the project proponent at a future date." EPA stressed that "[f]ailing to consider this information in the DEIS leads to gaps in the data and lack of potentially important information for the decision maker."[26] As it did in comments on the Atlantic Sunrise DEIS, EPA specifically requested that FERC prepare a "revised DEIS" for the PennEast Pipeline to account for these significant deficiencies.

As noted in the sections on environmental and socioeconomic impacts, much of the DEIS is inadequate, failing to provide relevant information or containing unsubstantiated conclusions. In order to cure the glaring deficiencies in the DEIS and allow the public to review and meaningfully comment on the impacts of the proposed

[24] EPA Comments on the Southeast Market Pipeline Project DEIS p. 1, October 26, 2015, Docket No. CP15-17-000, Accession No. 20151102-0219.

[25] EPA Comments on the PennEast Pipeline DEIS p. 1, September 16, 2016, Docket No. CP15558-000, Accession No. 20160916-0013. (emphasis added)

[26] 40 C.F.R. § 1502.9(a).

CO121-1 (cont'd)

project, FERC must wait until it has gathered the information described above (and the other missing information identified elsewhere in these comments and in the numerous other similar comments submitted to FERC) and then issue a revised and supplemental DEIS with a new public comment period. If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion."[27]

Only the issuance of a revised DEIS that thoroughly analyzes this missing information and incomplete analysis will satisfy NEPA's public comment procedures, which "[encourage] public participation in the development of information during the decision making process."[28] Simply adding this missing information to the final EIS is insufficient, as it does not allow the same degree of meaningful public participation.[29]

As discussed below, the current DEIS contains many substantial deficiencies, including the failure to fully evaluate the need for the ACP and the failure to fully evaluate water resources, wetlands, cultural resources, socioeconomic factors, threatened and endangered species, risks associated with the reliance on natural gas, air emissions, and climate change implications. Although the Public Interest Groups have addressed these issues in depth below, it is not their burden to ensure environmental documents are complete; that duty is clearly on the agency. It is FERC's responsibility to address each of the relevant and significant issues in the DEIS, and

[27] *Id.*

[28] *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 508 (9th Cir. 1988).

[29] *Id.* (citing *California v. Block*, 690 F.2d 753, 770-71 (9th Cir. 1982)) ("It is only at the stage when the Draft EIS is circulated that the public and outside agencies have the opportunity to evaluate and comment on the proposal… No such right exists upon issuance of a final EIS."). See also 40 C.F.R. § 1500.1(b).

CO121-1 (cont'd) correct the deficiencies. Given the DEIS as it stands today, the Public Interest Groups are not confident FERC is willing or capable of taking a hard look at the environmental effects of its planned action.

COMMENTS

CO121-2 I. The DEIS fails to determine the need for the proposed project.

The Council on Environmental Quality's ("CEQ") regulations for implementing the NEPA require that an environmental document "specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."[30] The CEQ regulations also require the Commission to consider and evaluate the no action alternative.[31] Courts have determined the alternatives analysis "is the heart of the environmental impact statement." A properly drafted purpose and need statement is critical to "inform the agency's review of alternatives to the proposed action and guide its final selection."[32] A purpose and need statement "will fail if it unreasonably narrows the agency's consideration of alternatives so that the out-come is preordained."[33] Where, as here, a federal agency is reviewing an applicant-sponsored project, it "cannot restrict its analysis to those 'alternative means by which a particular

[30] 40 C.F.R. § 1502.13; see also FERC's NEPA regulations at 18 C.F.R. Part 380.

[31] 40 C.F.R. § 1502.14.

[32] *Protect Our Cmtys. Found. v. Jewell*, 825 F.3d 571, 579 (9th Cir. 2016).

[33] *Id.* (quoting *Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1084 (9th Cir. 2013)); see also *Citizens Against Burlington v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991).

CO121-2 See the response to comment CO46-1.

CO121-2 (cont'd)

applicant can reach his goals.'"[34] An agency must "exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the project."[35]

Despite the clear requirement to "specify the purpose and need" for the ACP, the DEIS "does not address in detail the need or public benefits" of the ACP.[36] According to FERC, it "will more fully explain its opinion on project benefits and need *in its Orders* for the ACP and the EEP" (emphasis added). FERC has made similar statements in other recent DEIS documents for major greenfield pipelines.[37] Without assessing the need for the project in the DEIS, FERC undermines the development of alternatives to the proposed project, which is a "critical component of the NEPA process." EPA noted that without this information in the DEIS, FERC failed to "provide transparency in the decision-making process," thereby frustrating obstructing the public's "opportunity to provide comment" on the DEIS.

The ACP DEIS suffers from the same lack of transparency. The public's right to weigh in on the assessment of need is particularly critical for a project such as the ACP, which would impact both state and federal public lands and require the use of eminent domain for a private project over the objections of numerous landowners along the

[34] *Simmons* v. *U.S. Army Corps of Eng's*, 120 F.3d 664, 669 (7th Cir. 1997) (quoting *Van Abbema v. Fornell*, 807 F.2d 633, 638 (7th Cir. 1986)); see also *Nat'l Parks & Cons. Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1072 (9th Cir. 2009).

[35] *Simmons*, 120 F.3d at 669 (7th Cir. 1997) (quoting *Citizens Against Burlington*, 938 F.2d at 209 (D.C. Cir. 1991) (Buckley, J., dissenting)).

[36] DEIS p. 1-9.

[37] Draft Environmental Impact Statement for the Atlantic Sunrise Project at 1-2, Docket No. CP15-138-000. ("While this EIS briefly describes Transco's stated purpose, it will not determine whether the need for the Project exists, because this will later be determined by the Commission.").

CO121-2 (cont'd) proposed route. In such instances, there must be even greater scrutiny of project need in the DEIS.

The procedures of the Natural Gas Act cannot replace the full and fair public participation in the decision-making process that NEPA mandates. Due to FERC's failure to determine the need for the project in the DEIS, commenters must assume that FERC will rely on precedent agreements in order to assess the need for the ACP in its proceedings under the Natural Gas Act. However, as detailed below, the precedent agreements contracting for capacity on the ACP raise several concerns that call into question the market need for the project. The DEIS should have considered these issues and more fully addressed the "no action" alternative in the DEIS. These concerns speak to the appropriate division of risk between ratepayers and shareholders and go to the crux of the Commission's primary obligation under the Natural Gas Act to protect consumers. For all of these reasons, the Commission should look behind the precedent agreements supporting the ACP project and adjudicate whether the shipper commitments represent genuine growth in market demand as to warrant the construction of a $5.6 billion greenfield pipeline.

CO121-3 A. The DEIS does not sufficiently consider the need for the project and the no action alternative.

The DEIS briefly discusses the purpose and need of the ACP project in Section 1.2, mentioning that ACP has entered into a series of precedent agreements and that the project is fully subscribed. However, the DEIS omits several critical facts regarding the timing, terms, and circumstances surrounding the precedent agreements

CO121-3 See the response to comment CO55-63.

CO121-3 (cont'd)

underpinning the ACP project. These concerns—further detailed below—call into question whether a *bona fide* market need exists for the project.

The primary purpose of the NGA is to protect consumers of gas from excessive costs.[38] When gas consumers are captive ratepayers who provide essentially guaranteed revenues for a project, risk is shifted from shareholders to ratepayers. Self-dealing occurs when contracts with subsidiaries and other corporate entities are directly linked to the parent companies. FERC has expressed concern over this type of risk-shifting.[39] In addition, establishing "need" is an essential requirement for FERC to approve a permit for the ACP. A certificate cannot be approved by FERC unless the applicant can demonstrate "need" in the marketplace for increased amounts of natural gas. In this case, market need is established by shippers that are also owners, which calls into question whether a *bona fide* market need exists.

A recent West Virginia court decision on the Mountain Valley Pipeline ("MVP") found "no definitive evidence that any West Virginia consumers or non-MVP affiliated natural gas producers would benefit from MVP's pipeline."[40] Likewise, the present DEIS provides no evidence that any consumers would benefit from the ACP.

[38] http://naturalgas.org/regulation/history/

[39] Comments on the Draft Environmental Impact Statement for the Proposed Mountain Valley Pipeline and Equitrans Expansion Project, pp. 20-23: http://www.appalmad.org/wp-content/uploads/2016/12/2016-12-22-MVP-Comments-1.pdf

[40] *Mountain Valley Pipeline, LLC v. McCurdy*, Case No. 15-0919 (W. Va. 2016), *available at* http://www.courtswv.gov/supreme-court/docs/fall2016/15-0919.pdf , p. 2.

CO121-4

B. FERC did not rigorously explore or objectively evaluate reasonable alternatives.

As stated above, the alternatives section "is the heart of the environmental impact statement." FERC must "[r]igorously explore and objectively evaluate all reasonable alternatives."[41] This includes "reasonable alternatives not within the jurisdiction of the lead agency."

By relying almost exclusively on ACP's ambitions for the project to frame its statement of purpose, FERC impermissibly "restrict[ed] its analysis to just those 'alternative means by which a particular applicant can reach his goals.'"[42] For example, FERC says that the purpose of the ACP is to transport natural gas, but alternatives that do not transport natural gas "are not considered or evaluated further in this analysis."[43] As a result, FERC excluded consideration of meeting any of the project's purpose from the generation of electricity from renewable energy sources or the gains realized from increased energy efficiency and conservation.[44]

FERC's categorical refusal to consider alternative energy sources and increased energy efficiency is at odds with other recent statements by FERC. For example, in the Constitution Pipeline DEIS, FERC considered energy conservation/efficiency and renewable energy alternatives.[45] While FERC ultimately decided against considering

[41] 40 C.F.R. § 1502.14.

[42] *Simmons*, 120 F.3d at 669 (quoting *Citizens Against Burlington*, 938 F.2d at 209 (Buckley, J., dissenting)); see also *Nat'l Parks & Cons. Ass'n*, 606 F.3d at 1072.

[43] DEIS p. 3-2.

[44] Commenters' Motion to Intervene and Protest at 43-50, November 27, 2015 https://www.bloomberg.com/news/articles/2016-1215/world-energy-hits-a-turning-point-solar-that-s-cheaper-than-wind (". . . now unsubsidized solar is beginning to outcompete coal and natural gas on a larger scale[.]").

[45] Constitution Pipeline DEIS pp. 3-3 – 3-12, Docket CP13-499-000.

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CO121-4 See the responses to comments CO55-63, CO55-6, and CO66-2.

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CO121-4 (cont'd)

these alternatives in greater detail, it at least considered them in some detail. That is in stark contrast to the ACP DEIS where alternatives that would not transport Marcellus and Utica shale gas were excluded from any analysis. Effectively, this means energy conservation and renewable energy alternatives will never be considered, even if they are economically and technologically feasible, serve the broader public interest, and can be reasonably expected to eliminate some of the need for the proposed pipeline.

In the ACP DEIS, FERC also did not adequately consider alternative pipeline routes. In rejecting further consideration of two alternative routes, FERC generally stated that because they would involve construction similar to or greater than what is proposed by ACP, they were not considered in greater detail. This rationale, however, does not at all take into consideration the relative values of the areas and resources being impacted, and the wide range of environmental and socioeconomic impacts on people and places.

The central flaw in FERC's consideration of these alternatives is the fact that FERC simply assumed that all of the gas proposed for transport on these pipelines is actually needed. Without looking behind the precedent agreements supporting the ACP, FERC cannot determine whether the shipper commitments represent genuine growth in market demand as to warrant construction. Because the ACP application presents a questionable demonstration regarding market need, FERC should have given greater weight to the no action alternative. The recent Synapse report supports this and concludes that "given existing pipeline capacity, existing natural gas storage, the expected reversal of the direction of flow on the existing Transco pipeline, and the expected upgrade of an existing Columbia pipeline, the supply capacity of the Virginia-

CO121-4 (cont'd)

Carolinas region's existing natural gas infrastructure is more than sufficient to meet expected future peak demand." Thus, the no action alternative would not result in greater environmental impacts, as suggested by the DEIS.[46]

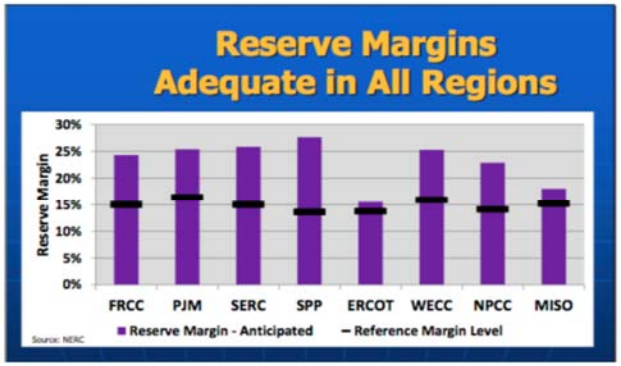
One of the most significant alternatives to the ACP and its use in electricity generation is regional sharing of resources in the southeastern U.S. Relevant and glaring examples, Resource Report 10 on Alternatives, and the April 2016 update, are incomplete, misleading and inadequate because the reports ignore the glut of power in the southeastern U.S. and North Carolina and the current low costs of clean energy. For example, the DEIS "no action" alternative does not mention that Duke Energy's most recent IRP reports very high reserve margins -- between 17% and 27% over the next fifteen years. An update given to FERC Commissioners by staff on May 19, 2016[47] shows that SERC, the Southeast Electricity Reliability Corporation, has a reserve margin of 25%, well over the 12-15% that's recommended by the North American Reliability Council.[48]

[46] www.southernenvironment.org/uploads/words_docs/2016_09_12_Synapse_Report_-_Are_the_ACP_and_MVP_Necessary__FINAL.PDF

[47] https://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2016/05-19-16.pdf

[48] http://www.nerc.com/files/2012SRA.pdf, p. 1.

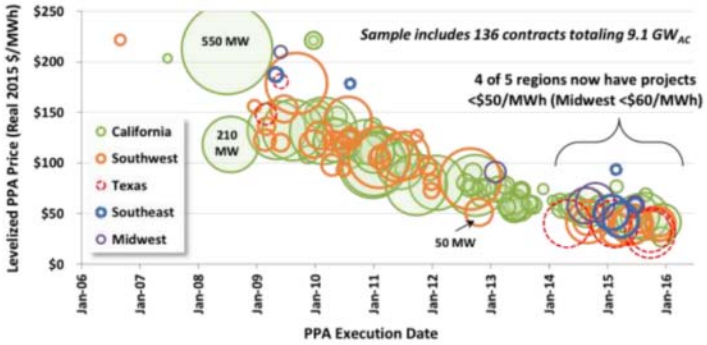
CO121-4 (cont'd)



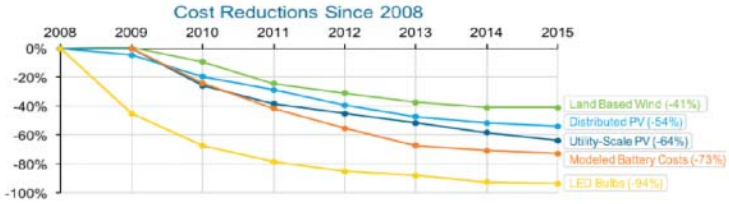
In addition, DEIS Report 10 erroneously states that clean energy alternatives would provide inadequate amounts of electricity and are not cost-effective, ignoring the fact that utility-scale wind power currently costs an average of 2.5 cents/kWh in the U.S., and that utility-scale solar contracts for 5-7 cents/kWh have been signed in the southeastern U.S. The cost of solar is down dramatically in recent years, even in the southeastern U.S., as demonstrated by the chart below from Lawrence Berkeley Labs, issued August 2016:[49]

[49] http://newscenter.lbl.gov/2016/08/24/median-installed-price-solar-united-states-fell-5-12-2015/

CO121-4 (cont'd)



The graph below illustrates the following cost reductions since 2008: land-based wind down 41%; distributed solar photovoltaic (PV) down 54%; utility-scale PV down 64%; modeled battery costs down 73%; and LED bulbs down 94%.[50]



Duke Energy and Dominion, the utilities that own the ACP, each have very low usage of clean energy, less than 3% of their load is generated by wind, solar, and hydropower.[51] The DEIS ignores the fact that Duke Energy's current energy efficiency

[50] https://thinkprogress.org/clean-energy-revolution-now-81a8e61134c7#.asksofmf2

[51] www.utilitydive.com/news/utility-clean-energy-rankings-reveal-unprecedented-shift-in-power-sector/421978/

CO121-4 (cont'd) goals are extremely low and could be increased significantly at a lower cost than the pipeline and new gas power plants. Over the past decade, North Carolina has lost ground on energy efficiency, and is now 30th in the U.S., at only 0.62% of total retail electricity MWh used for efficiency programs. On gas, North Carolina is even worse, at 0.11% of total natural gas retail sales spent on energy efficiency programs.[52] A thorough DEIS would evaluate these renewable energy and efficiency alternatives and compare their environmental impacts to the proposed project.

As demonstrated above, FERC's failure to establish the true market need for the proposed projects completely undermines its analysis of reasonable alternatives. Without knowing how much, if any, new infrastructure is needed to satisfy public demand – not just applicants' desires for profits – FERC cannot reasonably determine what alternative actions, including the no action alternative, would satisfy the underlying need. FERC's purpose and need statement and resulting alternatives analysis thus fails to comply with the requirements of NEPA.

CO121-5 C. Dominion failed to include relevant financial information on the need for the ACP.

In order to analyze the need for the ACP, FERC is required to fully analyze financial information from the applicant. In the present application, Dominion failed to provide necessary information, particularly in its affiliate transactions and impacts on ratepayers from unnecessary pipelines.

[52] http://aceee.org/sites/default/files/publications/researchreports/u1606.pdf

CO121-5 See response to comment CO117-2.

CO121-5 (cont'd)

1. Affiliate transactions require higher levels of scrutiny.

Both the Natural Gas Act and FERC precedent require heightened scrutiny of affiliate agreements.[53] In this case, 96% of the pipeline capacity will be sold to owners/affiliates Duke Energy (now merged with Piedmont) and Dominion using 20-year contracts.[54] These 20-year contracts are known as "take-or-pay," which are usually unlawful, except within the oil and gas industry.[55] Under take-or-pay contracts, entities that contract for gas delivery must either take delivery, or pay a penalty. According to a June 23, 2016, filing with the Federal Trade Commission, Dominion ratepayers will likely be paying far more per therm for gas delivered by the ACP than under previous contracts.[56] Much of this increase is likely due to take-or-pay contracts with high fixed charges. These 20-year "firm" contracts obligate ratepayers to pay for firm transportation service every hour of every day for the next 20 years, regardless of whether the service is actually used. Take-or-pay contracts also impose barriers for new entrants, such as clean energy, and raise prices for consumers due to a lack of competition.

Affiliate agreements, such as the contracts Duke Energy and Dominion have with their affiliate ACP, also imply self-dealing. Self-dealing is more likely when affiliates depend on the expertise of regulated utility holding companies to help manage pipeline investments, since utility holding companies have far more assets and are thus less risky than pipeline companies.

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[53] See footnote 23.

[54] Per the application, 1.44MMDth/d (96%) of the capacity for the ACP is under 20 year contracts with Dominion (21%), Duke Energy (50%), Piedmont (11%), Virginia Natural Gas NG (11%), and Unaffiliated (7%).

[55] https://www.ferc.gov/market-oversight/guide/energy-primer.pdf, p. 162.

[56] http://wp.vasierraclub.org/LetterInFull.pdf

CO121-5 (cont'd)

Therefore, from its inception, the market need for the ACP project has been established by the very same corporate interests that also own the project. The fact that the additional shippers of the project also took an ownership interest calls into question whether a bona fide market need exists. The precedent agreements that followed after the expiration of the open season appear to be indicative of utility holding companies seeking to convert ratepayer transportation costs into shareholder return, as the basis for their taking on affiliate equity interests as developers. Other motivations, including the opportunity to recover a generous return on equity, should be considered by the Commission as a critical driver for the project. As it has done in the past, the Commission should view, with skepticism, precedent agreements that are not connected to the open season process.[57]

2. Risk is shifted from shareholders to ratepayers when ratepayers provide revenues.

When utility holding companies Duke Energy and Dominion invest in pipelines, ratepayer transportation costs are converted into shareholder returns. Duke Energy and Dominion are taking on affiliate equity interests as pipeline developers, with each utility's holding company getting higher rates of return on pipeline projects (estimated 14%) than allowed by state commissions (usually 10%). This provides excessive benefits to shareholders at the expense of ratepayers. The stock market's projected rate of return for the next five years is 4-7%. A recent FERC filing on the proposed Mountain Valley

[57] *Millennium Pipeline Co., L.P.*, 100 FERC ¶ 61,277 at p. 62,141 (2002) (citing *Independence Pipeline Co.*, 89 FERC ¶ 61,283 at p. 61,840 (1999)) ("The proffered precedent agreement was not the result of, or related to, Independence's open season. For this reason, we found that the DirectLink agreement did not constitute reliable evidence of market need to support a finding that the proposal was required by the public convenience and necessity.") DEIS p. ES-1, n.1.

CO121-5 (cont'd)

Pipeline also involves long-term gas contracts with utilities that are subsidiaries of the parent company. In that case, expert Dr. Steve Issuer states:

> "Where pipelines are financed through long-term contracts with LDCs [Local Distribution Companies] or utilities that are subsidiaries of the parent company building the pipeline, the efficiency of the pipeline cannot be presumed by a full subscription to its capacity. *Cross-subsidization can be accomplished by risk shifting as well as direct side payments. An uneconomic project that creates excess capacity can be financed in this manner by guaranteeing the income stream at the expense of alternative transport options*."[58]

(emphasis added). A filing by the Virginia Chapter of the Sierra Club on the MVP, dated June 23, 2016, further found: (a) the annual cost of service for the ACP would be in excess of $1 billion annually; (b) the annual unavoidable reservation charges for the ACP would cost ratepayers an additional $1 billion annually; and (c) Dominion's affiliate has a 20-year contract obligating it to pay annual fixed charges of $208 million, plus variable charges, including fuel/loss charges.[59]

Dominion's share of the ACP is now 48%, Duke Energy (including the portion previously owned by Piedmont, now a wholly owned Duke Energy subsidiary) is 47%, and the Southern Company owns 5%.[60] Duke Energy, like Dominion, will likely realize more profits from sales of natural gas electricity once it owns the ACP, rather than simply purchase the natural gas and count it as an expense as it has done for the past decade.

[58] See footnote 23.

[59] http://wp.vasierraclub.org/LetterInFull.pdf, p. 9.

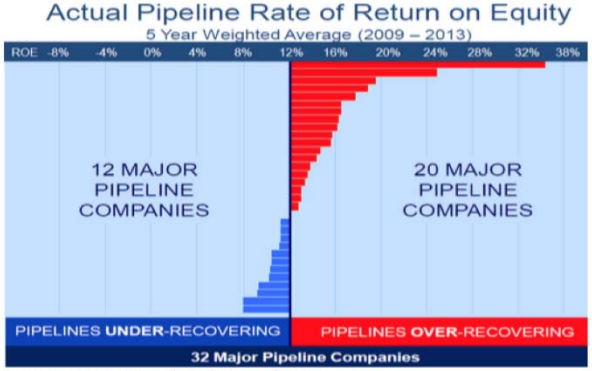
[60] http://www.bizjournals.com/charlotte/blog/energy/2015/10/duke-energy-won-t-be-dominant-atlantic-coast.html

CO121-5 (cont'd)

D. Natural gas companies have a history of overearning on pipelines.

A report by the Institute for Energy Economics and Financial Analysis (IEEFA) on the risks associated with overbuilding pipelines states: "FERC facilitates overbuilding by allowing very high rates of return on equity for pipeline companies (allowable rates of up to 14%), along with the lack of a comprehensive planning process for natural gas infrastructure, thus attracting more capital into pipeline development than is necessary." According to the Natural Gas Supply Association, the majority of pipeline companies earned returns in excess of 12% from 2009-2013.[61]

Figure 2. The Majority of Major Pipeline Companies Earned Returns In Excess of 12% For 2009-2013.



Source: Natural Gas Supply Association

The figure above represents the returns on equity from 32 major natural gas pipeline companies, comprising 75% of interstate natural gas market capacity. Only 40% of the companies earned 8-12%, while the majority earned over 12%, and two companies

[61] http://ieefa.org/wp-content/uploads/2016/04/Risks-Associated-With-Natural-Gas-Pipeline-Expansion-in-Appalachia-_April-2016.pdf, pp. 1, 9.

CO121-5 (cont'd)

earned returns on equity in excess of 24%. In fact, we do not yet know what the negotiated rate of return will be for the ACP since these do not need to be filed with FERC until 60-90 days before the pipeline is in service.[62]

The IEEFA report points out that there is no regional analysis of the need for new pipelines, as there is with electric transmission. Since FERC does not provide either a regional or long-term assessment of the need for more pipelines, overbuilding is likely. As the IEEFA report states, overbuilding pipelines:

a. Puts ratepayers at risk for paying for excess capacity,

b. Puts landowners at risk of sacrificing property to unnecessary projects, and

c. Puts investors other than Duke Energy and Dominion at risk of loss if shipping contracts are not renewed and pipelines are underused.

Thus, while ratepayers provide the capital and bear the risk, Dominion and Duke Energy will earn higher profits on pipelines (up to 14%) than they are allowed to earn on generation, usually 10%. The financial benefits to the pipeline builders do not necessarily align with the interests of ratepayers and citizens. Duke Energy and Dominion have a vested interest in over building pipelines, and competition from lower-priced renewables over the next 10, 20 and 30 years will likely be ignored.

E. Natural gas companies have a history of overbuilding pipelines.

Dominion appears to ignore solid evidence that pipeline capacity from the Marcellus and Utica shale plays are overbuilt, in other words, there are "too many straws in the milkshake." Approval of the ACP depends on 20-year affiliate-backed contracts to

[62] http://ieefa.org/wp-content/uploads/2016/04/Risks-Associated-With-Natural-Gas-Pipeline-Expansion-in-Appalachia-_April-2016.pdf

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CO121-5 (cont'd)

support the new pipeline capacity. A September 2016 study by Synapse Energy Economics[63] points out the huge market distortion due to Duke Energy's massive build-out of natural gas power plants, increasing the current 10,000 MW of gas plants in Duke Energy Carolinas (DEC) and Duke Energy Progress (DEP) territory by another 7,900 MW from 2017 through 2031, locking ratepayers into paying for these plants for 30 years or more.[64] Even industry insiders like Kelcy Warren, CEO of Energy Transfer Partners, recognize that pipeline builders are likely to overbuild.[65] Other industry leaders, such as natural gas consultant Rusty Braziel, recognize and acknowledge that current expansion plans will likely result in overbuilding. Braziel reports that gas pipeline capacity will exceed the gas production in Appalachia starting in late 2017.[66]

The $5.6 billion cost for the ACP will not be worth much without adequate supplies for the power plants, or if the gas is so expensive that customers flee to cheaper renewable energy, which has zero fuel costs and zero risk of fuel cost increases. Many billions of dollars sunk into pipelines and power plants could become stranded assets. A recent report shows this could easily happen in the Northeastern U.S., where overbuilt pipelines could cost ratepayers an additional $277 million over its lifetime.[67]

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[63] https://www.southernenvironment.org/uploads/words_docs/2016_09_12_Synapse_Report_-_Are_the_ACP_and_MVP_Necessary__FINAL.PDF

[64] Direct Testimony of Swati V. Daji, February 16, 2017, North Carolina Utilities Commission Docket No. E-100 Sub 147: www.ncuc.net

[65] http://ieefa.org/wp-content/uploads/2016/04/Risks-Associated-With-Natural-Gas-Pipeline-Expansion-in-Appalachia-_April-2016.pdf, p. 1.

[66] https://about.bgov.com/blog/new-barrier-pipelines-path-brutal-economics/

[67] http://www.utilitydive.com/news/new-report-questions-need-cost-of-access-northeast-gas-pipeline-project/436228/

CO121-5 (cont'd)

F. Existing pipelines are underutilized.

Existing pipelines should be utilized more efficiently. The Synapse Energy Economics study shows existing pipeline capacity, gas storage, along with the expected reversal of flow of gas from the Transco pipeline in North Carolina will provide more than enough gas to cover needs in the Carolinas.[68] Jonathan Peress of the Environmental Defense Fund ("EDF") points out that there are signs that a gas pipeline bubble is forming. This bubble would impose unnecessary costs on consumers, and constrain the development of cleaner, cheaper sources of electricity such as wind and solar. IEEFA reports that current utilization of pipelines for gas flowing into North Carolina is 37%.[69] The U.S. Department of Energy ("DOE") reports average capacity utilization for gas interstate pipelines from 1998-2013 was only 54%.[70]

Peress also points out that there is a big difference between market participants and captive ratepayers financing these huge, expensive projects. When market participants finance expensive pipelines, they understand the risk, whereas ratepayers have no choice but to pay. The environmental damages from drilling and shipping

[68] https://www.southernenvironment.org/uploads/words_docs/2016_09_12_Synapse_Report_-_Are_the_ACP_and_MVP_Necessary__FINAL.PDF

[69] http://ieefa.org/wp-content/uploads/2016/04/Risks-Associated-With-Natural-Gas-Pipeline-Expansion-in-Appalachia-_April-2016.pdf, p.13
http://www.eia.gov/dnav/ng/ng_move_ist_a2dcu_nus_a.htm
http://www.eia.gov/naturalgas/pipelines/EIA-_StatetoStateCapacity.xls
http://southeastenergynews.com/2016/11/14/advocates-ratepayers-will-be-on-the-hook-for-unnecessary-pipelines/

[70] Testimony of N. Jonathon Peress at 2, June 14, 2016, Before the State Energy and Natural Resources Committee: http://wp.vasierraclub.org/LetterInFull.pdf

CO121-5 (cont'd)

fracked gas are also borne by citizens, and are not even considered by pipeline builders Duke Energy and Dominion. In summary, Mr. Peress concludes:

a. Per unit (per dekatherm or per million BTU), transportation costs for new greenfield capacity are almost as much as the current commodity price for natural gas;

b. Before a proposed pipeline can apply for a certificate with FERC, it must show executed contracts to provide enough revenue to pay for the full cost of the project, including construction, return on equity, depreciation, taxes, maintenance and operations;

c. These contracts are 'take-or-pay,' whereby daily pipeline delivery capacity is reserved and paid for by shippers every day over the term of the transportation service agreements -- whether or not those services are used;

d. Because the cost of constructing a new pipeline (particularly a greenfield project) are so great, these contracts must be of long duration, typically 20 years.

e. Normally, new pipelines are financed over 35 to 40 years in order to spread the costs so that per unit transportation services can be reasonably affordable;

f. Shippers entering into long term agreements with capacity developers must have a high degree of confidence that the market conditions signaling the need for new pipeline capacity will persist for many years into the future;

g. In the absence of a voluntary transaction between capacity developers and market participants risking their own capital, further capacity expansion would only occur in the event policymakers impose long term financial obligations on captive ratepayers for costly long-lived infrastructure. And should they do so, they are going outside of the price signals sent by a rational market. Any such government-induced incursion into the market is highly risky and if pursued, is likely to impose costs on the obligors in excess of putative benefits, while enriching those who benefit without them bearing risk in proportion to the investment;

h. There is a "disturbing" trend of utilities imposing transportation contract costs on state-regulated retail utility ratepayers so that affiliates of those same utilities can earn shareholder returns as pipeline developers;

i. The essence of this financing structure is that transportation fees are paid to an affiliate, so that ratepayer costs which may not be justified by ratepayer demand are converted into shareholder return.

CO121-5 (cont'd)

The costs and risks of pipeline overbuilding are being borne by ratepayers, while shareholders increase their returns. State regulators, as well as FERC, appear to be complicit, as they refuse to ask hard questions of pipeline developers.

These conclusions are supported by out-going FERC Chairman Norman Bay who stepped down from his position on February 3, 2017.[71] The same day, Bay issued a separate statement on an order involving shale gas and U.S. markets.[72] In that statement, Bay notes the "public benefits" that might be shown in order to determine need for a pipeline, including but not limited to: meeting unserved demand; lowering costs to customers; providing competitive alternatives; increasing electric reliability; or advancing clean air objectives. Bay notes that although these factors are included in the Natural Gas Act, FERC largely relies on contracts with shippers to establish need in practice.

The problem arises when the same affiliated party -- i.e. Duke Energy and Dominion -- are on both sides of the equation. In other words, Duke Energy and Dominion subsidiaries have contracts with Duke Energy and Dominion. Bay points out that the danger in affiliate-signed contracts is that anticipated markets "may fail to materialize." He compares this danger with the huge build-out of LNG terminals built during the early 2000s that became stranded assets.

[71] http://www.platts.com/latest-news/natural-gas/washington/former-chairman-norman-bay-to-resign-from-us-21720960

[72] Order Granting Abandonment and Issuing Certificates (Separate Statement by Commissioner Bay) at 89-95, Docket Nos. CP15-115-000 and CP15-115-001: https://www.ferc.gov/CalendarFiles/20170203194955-CP15-115-000.pdf

CO121-5 (cont'd)

Bay states that it's in the public interest to ensure that pipelines are not overbuilt, contributing to boom-and-bust cycles, as they are "capital intensive and long-lived assets." Bay observes that:

> It is in the public interest to foster competition for pipeline capacity but also to ensure that the industry remains a healthy one, not subject to costly boom-and-bust cycles. *Pipelines are capital intensive and long-lived assets. It is inefficient to build pipelines that may not be needed over the long term and that become stranded assets. Overbuilding may subject ratepayers to increased costs of shipping gas on legacy systems.* If a new pipeline takes customers from a legacy system, the remaining captive customers on the system may pay higher rates. *Under such circumstances, a cost-benefit analysis may not support building the pipeline.*

(emphasis added). That could be exactly the situation with the ACP; gas that is currently transported via the Transco pipeline may simply be shunted to the ACP, so that the Transco will be underutilized. Who will pay for the stranded capacity from the Transco pipeline that currently serves North Carolina?

G. Reliance on the Clean Power Plan ("CPP") as an indicator of need is not reasonable.

Dominion asserts that implementation of the CPP would increase coal-fired electric generation plant retirements and coal-to-gas switching, thus supporting the need for the pipeline. However the Supreme Court has stayed implementation of the CPP pending disposition of ongoing litigation.[73] The current Administration has vowed to backtrack on the goals in the CPP. As a result of court and executive actions, states have suspended the planning process, so the details of states' plans – including specific emissions reduction measures and the schedule for implementing them – remain largely unknown. However, state plans can be expected to be responsive to the CPP's

[73] *Chamber of Commerce v. EPA*, No. 15A787 (U.S., Feb. 9, 2016) (order granting stay).

CO121-5 (cont'd)

incentives for renewable generation over gas-fired generation. Because gas-fired plants emit significant amounts of carbon dioxide, states will be able to achieve compliance more easily by relying on greater renewable generation as compared to coal-to-gas switching. As a result, EPA modeling shows that gas-fired generation is expected to decline by the end of the compliance period, as compared to the base case.[74] The CPP is thus not a significant driver of need for additional natural gas transmission infrastructure.

While studies show carbon dioxide emissions have decreased over the past few years in the United States, greenhouse gas emissions have increased. The huge increase of fracking is driving a spike in methane emissions, and according to the most recent report by the Intergovernmental Panel on Climate Change ("IPCC") issued in 2013, methane's effect on the climate is 86 times that of carbon dioxide over 20 years. Decisions about the use of natural gas and its impacts on the climate should use the shorter time frame, which has the result of making natural gas, including fracked gas, appear to be more climate-friendly than it actually is.[75]

[74] EPA Regulatory Impact Analysis for the Clean Power Plan Final Rule at 3-27: https://www.epa.gov/sites/production/files/2015-08/documents/cpp-final-ruleria.pdf.

[75] https://thinkprogress.org/how-the-epa-and-new-york-times-are-getting-methane-all-wrong-eba3397ce9e5#.s5zcjd205

CO121-6 II. The DEIS fails to consider the reasonably foreseeable decline of shale gas supply for the ACP.

A. Future U.S. natural gas supplies are overestimated, which could result in stranded assets.

Without sufficient natural gas, both the pipelines and gas-fired power plants could become too expensive to operate, especially in an era of ever-decreasing costs for wind and solar power. Since 2009, some 5,000 miles of pipelines have been approved by FERC, with an additional 3,500 miles in process. According to Bloomberg, these pipelines represent a $35 billion investment.[76] At least twice that amount could easily be spent on gas-fired power plants planned around the U.S. North Carolina and Virginia alone have $6 billion in proposed pipelines, with an estimated $20-plus billion in gas-fired power plants proposed by Duke Energy Carolinas ("DEC") and Duke Energy Progress ("DEP") in their most recent Integrated Resource Plans (IRP).[77] Duke Energy currently generates electricity from 10,000 MW of gas plants in DEP and DEC territories; and has plans to add 7,900 additional MW of gas-fired generation capacity by 2031.[78]

A critical issue the utilities proposing the ACP refuse to consider is that the supply of natural gas in the U.S. is seriously overestimated, putting ratepayers at risk of rising prices at best, or stranded assets at worst. Their assumption of endless supply is based on the unrealistic forecasts by the U.S. Energy Information Administration (EIA). The graph below shows the EIA's 2016 estimate of future natural gas supplies out to 2040. The EIA expects natural gas production to continue to rise decades into the future,

[76] https://about.bgov.com/blog/new-barrier-pipelines-path-brutal-economics/

[77] North Carolina Utilities Commission Docket No. E-100 Sub 147: www.ncuc.net

[78] Direct Testimony of Swati V. Daji, February 16, 2017, North Carolina Utilities Commission Docket No. E-100 Sub 147: www.ncuc.net

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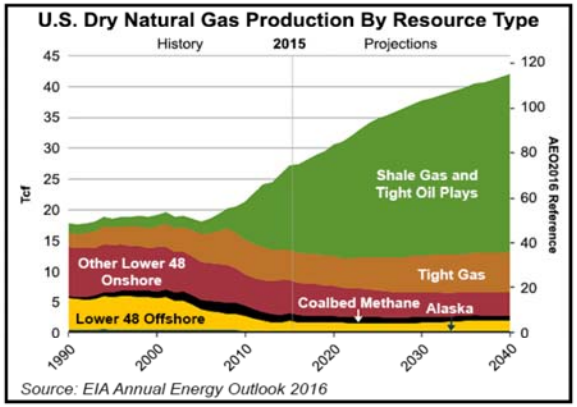
CO121-6 See the response to comment CO46-1.

CO121-6 (cont'd)

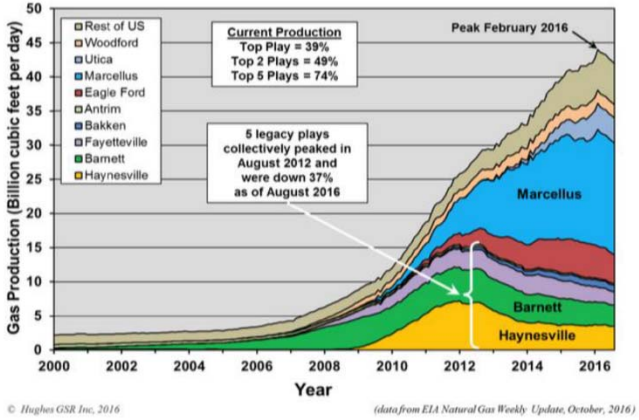
utterly ignoring the fact that shale gas wells decline very quickly over the first three years, and that the oldest U.S. shale gas plays, which have been producing for less than 20 years, are in the advanced stages of decline.



The next graph shows the production of each shale play up to August 2016, and notes that the top two plays, the Marcellus and the Haynesville, account for 49% of total U.S. shale gas production. As shown below, this should raise red flags for FERC, state commissions and the participating utilities. As a result, the Public Interest Groups urge regulators to scrutinize EIA's potentially overblown claims of future shale gas production.[79]

[79] The most recent historical data from EIA's Natural Gas Weekly shows that annual U.S. natural gas production for 2016 was down 2.2% overall from 2015 levels. While a 2.2% reduction for 2016 is an improvement over the 4.7% decrease from the Hughes study, it is still cause for concern, and shows that future shale gas production is hardly guaranteed. See http://www.eia.gov/naturalgas/weekly/

CO121-6 (cont'd)



B. EIA has overestimated future U.S. natural gas supplies by 50% or more.

The "shale gas revolution" has changed electricity generation in the U.S., and shale gas now provides two-thirds of U.S. natural gas.[80] However, what is much less discussed, but critically important, is that U.S. shale gas "plays" (focused areas with drilling activity) have very high decline rates, with the average well declining 75 - 85% over the first three years of production. This means that 30 - 45% of a play's production must be replaced each year by more drilling.[81] Compounding the problem is that high productivity "sweet spots" account for only 10-20% of the geographic area of most shale plays, but comprise the most productive wells. After sweet spots are exhausted, more wells must be drilled to maintain current production. In some areas of the U.S., spacing

[80] www.eia.gov/todayinenergy/detail.php?id=26112

[81] www.postcarbon.org/wp-content/uploads/2014/10/Drilling-Deeper_FULL.pdf

CO121-6 (cont'd)

of gas wells has dropped from 1 well pad per 240 acres to 1 well pad per 10 acres.[82] As sweet spots are used up, and there are fewer locations left to drill, more low-producing wells will need to be drilled just to keep production even. If more and more wells are not drilled, production will likely decline steeply. Less-productive wells require more money invested per unit of gas produced, so that the price of gas must rise if these wells are to be drilled at a profit.

Earth scientist David Hughes has studied energy resources for four decades, spending 32 years with the Geological Survey of Canada as a scientist and research manager. Hughes developed Canada's National Coal Inventory to determine availability and environmental constraints, and is uniquely qualified to assess future supplies of shale gas. Over the past decade, Hughes has researched, published and lectured widely on global energy and sustainability issues in North America and internationally, starting with a 2011 report on U.S. natural gas supplies.[83] Hughes' work includes many reports analyzing the EIA data. Hughes has analyzed EIA reports in depth, and authored major studies on shale gas and oil in 2013, 2014 and 2015. The analysis below is from Hughes' December 2016 update on U.S. shale gas plays, which compares EIA's most recent 2016 forecast with the EIA's forecasts in 2015 and 2014, as well as Hughes' own analysis from *Drilling Deeper* (2014).[84] Hughes' analysis shows:

a. Actual shale gas production has declined 4.7% since its peak in February 2016.

[82] http://endocrinedisruption.org/chemicals-in-natural-gas-operations/introduction

[83] http://www.postcarbon.org/publications/will-natural-gas-fuel-america/

[84] http://www.postcarbon.org/wp-content/uploads/2014/10/Drilling-Deeper_FULL.pdf
http://www.postcarbon.org/publications/drill-baby-drill/
http://www.postcarbon.org/publications/shale-gas-reality-check/
http://www.postcarbon.org/2016-shale-gas-reality-check/

CO121-6 (cont'd)

b. All shale plays appear to have peaked.

c. Production from the Haynesville shale play (located in Louisiana) is down 52%, despite a heavy increase in drilling.

d. Despite these decreases in production over a short time frame, the U.S. EIA's estimates of *future* production of natural gas have increased dramatically; in other words, the EIA's estimates are 22% higher in the 2016 analysis than its 2015 analysis.

e. High-producing shale plays such as the Marcellus are relatively rare, and the top five U.S. shale plays (Marcellus, Ford, Utica, Haynesville, and Barnett), account for 74% of August 2016 production.

f. The EIA's drilling rates from the Annual Energy Outlook 2015 (AEO2015) require over 1 million wells to be drilled between 2015 and 2040, at a cost of approximately $6 million each, for a total required investment of $6 trillion.[85]

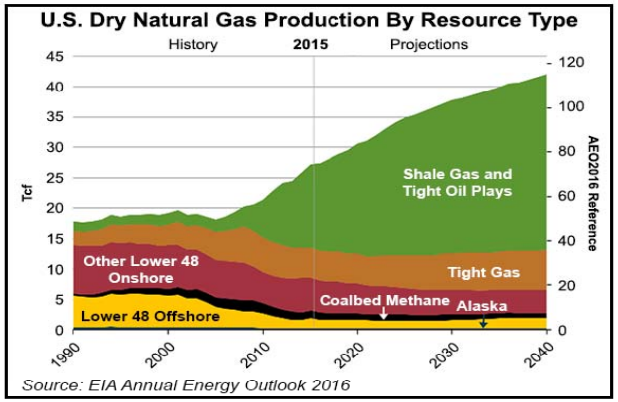
Hughes demonstrates there is no reason given for the new, highly optimistic increase in total production. In fact, much of the natural gas supply expected by the EIA to materialize by 2040 (and by 2050 in the most recent AEO) does not appear to be grounded in geologic reality. The graphic below shows the EIA's estimates that natural gas production will continue to rise decade after decade, utterly ignoring the fact that shale gas wells decline very quickly.

Remarkably, the EIA's 2016 report assumes that natural gas prices will remain at or below $5/MMBTU through 2040. This is 20% below its Annual Energy Outlook (AEO2015) price forecast over the 2015-2040 period. Gas prices in 2016 were $2.50-3.00/MMBTU, but ballooned to over $12.00/MMBTU as recently as 2008.[86] EIA expects

[85] http://www.resilience.org/stories/2016-12-16/2016-shale-gas-reality-check/
[86] http://www.postcarbon.org/2016-shale-gas-reality-check/, p. 3.

CO121-6 (cont'd)

the cost of natural gas to somehow remain at $5.00/MMBTU from 2025 through 2040, despite the fact that the cost of natural gas has been extremely volatile since 2000.



C. U.S. natural gas production peaked in February 2016.

The Hughes 2016 analysis on the production from the U.S. shale gas plays focus on historic data and then compares EIA's 2016 forecast with its earlier forecasts. Hughes' analysis shows:

a. Actual shale gas production as of August 2016 declined 4.7% since peaking in February 2016;

b. All shale plays appear to have peaked;

c. Production from the Haynesville shale play (located in Louisiana), is down 52% since peaking in January 2012, despite a heavy increase in drilling; and

CO121-6 (cont'd)

d. High-producing shale plays such as the Marcellus are relatively rare, and the top five U.S. shale plays (Marcellus, Ford, Utica, Haynesville and Barnett), account for 74% of August 2016 production.

Despite these decreases in shale gas production over a few years, EIA's estimates of future production of natural gas have increased dramatically; in other words, EIA's 2016 estimates are 22% higher than its own 2015 analysis. There is no reason given for the big increase in possible future shale gas supplies and no data to back up such a conclusion.

D. Future shale production in the Marcellus and Haynesville plays is overestimated.

The future development of the Marcellus and Haynesville shale plays are fundamental to the future of the proposed ACP. The Marcellus is the shale play that is the basis of the EIA's huge projection in future shale gas supplies, while the Haynesville shows us what the future actually looks like, since that play is down by over half since peaking in January 2012. As part of his recent statement, former FERC Chairman Bay notes that the early-producing shale plays have already seen output decline and, further, nearly all U.S. shale plays are in decline. Bay also notes the "growing importance" of the Marcellus and Utica, and asks why FERC has never conducted a "comprehensive study of the environmental consequences of increased production from that region. Nor has the Commission performed a programmatic review of gas production in the different shale formations."

The Marcellus provides more shale gas than any other shale gas play, providing over a third of total U.S. shale gas. The Marcellus is mainly concentrated in Pennsylvania, but also includes eastern Ohio, northern West Virginia, and southern New

CO121-6 (cont'd)

York. The top five shale-producing counties in Pennsylvania have accounted for 65% of cumulative production from the Marcellus play, demonstrating the fact that most gas is produced from a few "sweet spots."

The chart below, Figure 1 from Hughes' 2016 study, shows the estimated recovery for several plays from the EIA's Annual Energy Outlook (AEO) for 2014, 2015 and 2016. The 2016 estimate for the Marcellus play, in red, shoots up higher than any other play in the U.S., and is in fact *76% higher than the AEO2014 estimate*. Note that the short black bar on the right is actual gas recovery. The AEO2016 estimate is also triple the estimate by the U.S. Geological Survey.[87]

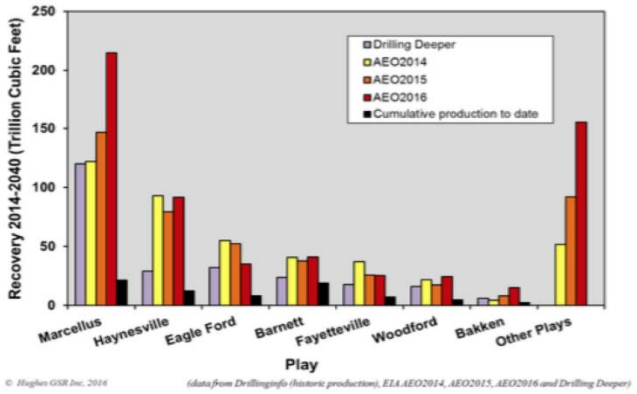


Figure 1. Cumulative recovery by play from 2014 to 2040 comparing AEO2014, AEO2015, AEO2016, and *Drilling Deeper* "Most Likely" projections.
The most significant increases occur in the Marcellus and "other" plays, although all plays are revised upward in AEO2016 compared to AEO2015 except the Eagle Ford and Fayetteville. All plays are below peak production. Also shown is cumulative production to date, per Drillinginfo.[8]

[87] http://www.postcarbon.org/2016-shale-gas-reality-check/, pp. 11-12.

CO121-6 (cont'd)

The other glaring omission in the EIA's ambitious forecast is geological: many of the sweet spots have so many wells that it's impossible to drill more wells without draining shale gas from wells nearby, and there is simply no more land left to drill, known as "well saturation." In January 2012, the Marcellus had 143 active drilling rigs, which was down to 34 in October 2016. Greater rig efficiencies and technology have allowed the Marcellus to continue to produce at a high rate, although overall gas production in the Marcellus declined 5% from February 2016 to August 2016.[88]

The figure below compares EIA's 2014, 2015, and 2016 projections for total gas production from the Marcellus shale play. In 2014, the EIA estimated that a total of 120 trillion cubic feet ("TCF") of gas would be recovered from the Marcellus (from 2014 until 2040). In 2015, the EIA increased that estimate from 120 TCF to 147 TCF and, in 2016, increased it again to 215 TCF, 76% higher than its estimate in 2014.

[88] http://www.postcarbon.org/2016-shale-gas-reality-check/, pp.11-13.

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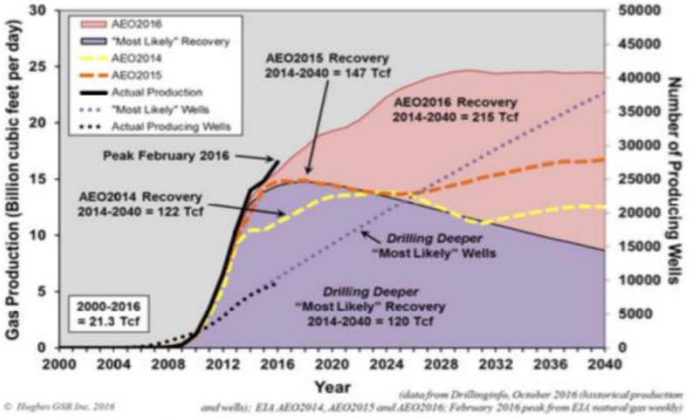


Figure 7. Marcellus Play production for the "Most Likely" drilling rate forecast from *Drilling Deeper* compared to the EIA's AEO2014, AEO2015 and AEO2016 forecasts.

Also shown are actual production, actual cumulative producing wells, and the cumulative wells that would have to be drilled for the "Most Likely" drilling rate. Cumulative production through mid-2016 was 21.3 Tcf. AEO2016 estimates cumulative recovery over the 2014-2040 period of 215 Tcf, compared to 120 Tcf in *Drilling Deeper*. The February 2016 production peak is not reflected as data in this figure are in 1-year intervals.

Again, there is no reason given for the new, highly optimistic increase in total production and it appears to disregard actual production potential. Similarly, there is no reason for the highly optimistic increase in total production from the Haynesville. The rapid growth and subsequent decline in the Haynesville shale play is the likely future of the Marcellus shale play. The chart below shows the following regarding the Haynesville play:[89]

a. Actual gas production, starting with near-zero output in 2006, peaked only 6 years later in January 2012

b. AEO2014 projected 92.3 TCF total shale gas recovery from 2014-2040

[89] http://www.postcarbon.org/2016-shale-gas-reality-check/

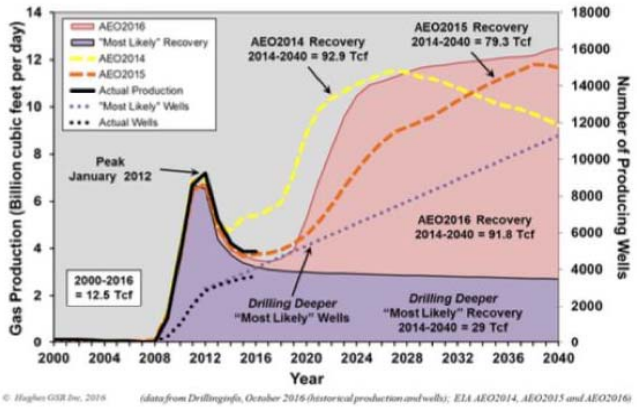
CO121-6 (cont'd)

c. AEO2015 projected 79.3 TCF total shale gas recovery from 2014-2040

d. AEO2016 projects 91.8 TCF total shale gas recovery from 2014-2040

e. Hughes' *Drilling Deeper* projects 29 TCF as the "most likely" recovery scenario from 2014-2040

f. Actual production from 2000-2016 was only 12.5 TCF



© Hughes GSR Inc, 2016 (data from Drillinginfo, October 2016 (historical production and wells); EIA AEO2014, AEO2015 and AEO2016)

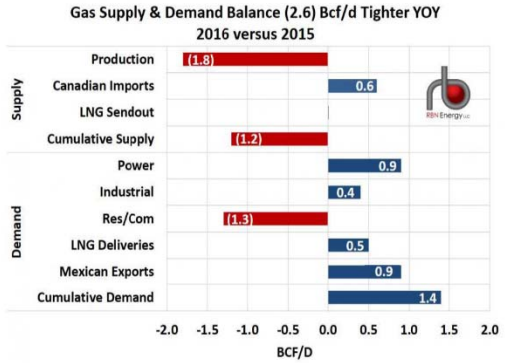
Figure 9. Haynesville Play production for the "Most Likely" drilling rate forecast from *Drilling Deeper* compared to the EIA's AEO2014, AEO2015 and AEO2016 forecasts.
Also shown are actual production, actual cumulative producing wells, and the cumulative wells that would have to be drilled for the "Most Likely" drilling rate. Cumulative production through mid-2016 was 12.5 Tcf. AEO2016 estimates cumulative recovery over the 2014-2040 period of 92 Tcf, compared to 29 Tcf in *Drilling Deeper*.

In other words, the EIA has revised the total amount of projected gas production from the Haynesville shale play up and down over the past three years. Meanwhile, *actual recovery from the Haynesville shale play is down by a staggering 52% from its January 2012 high*. Hughes projects the "most likely" recovery from the Haynesville play to in fact be 29 TCF with an ever growing number of wells needed to produce the gas.

CO121-6 (cont'd)

E. Total U.S. natural gas production is in decline.

The week of February 20, 2017, Rusty Braziel published the following graph on U.S. gas production, showing total production down by 1.8 billion cubic feet per day (bcf/d) year over year, from 2015 to 2016:[90]



This chart should give pause to every investor and utility that is depending on unlimited supplies of cheap natural gas for the next thirty years. Bloomberg's June 24, 2016, blog notes that "economics of pipelines is becoming less favorable" and cheap gas is "making it hard for shale drillers to survive."[91] The EIA's January 2017 chart on U.S. natural gas production also shows a recent decline.[92]

[90] http://marcellusdrilling.com

[91] https://about.bgov.com/blog/new-barrier-pipelines-path-brutal-economics/

[92] http://www.eia.gov/naturalgas/monthly/pdf/figure_01.pdf, Figure 1.

CO121-6 (cont'd)

F. Shale gas economics are not rational.

Arthur E. Berman is a geological consultant with 37 years of experience in petroleum exploration and production, as well as financial analysis with a focus on the energy sector.[93] Berman has been alerting investors for years that the "magical thinking" behind believing shale gas can continue to be cheap, abundant and profitable defies the rules of economics. Berman, like Hughes, disputes the findings of the EIA's AEO2016, saying that it "sparkles with pixie dust."[94]

Berman lists the shale gas companies that are losing money, noting that, in 2016, the largest shale gas producer in the world, Chesapeake Energy, did not even cover operating costs of about $6 million per well, much less capital-intensive expenditures like drilling and completion. The list of shale gas companies with negative cash flows includes Anadarko, Comstock, and Petroquest, with Goodrich and Sandridge in bankruptcy. Berman notes that, in 2015, Ultra, Forest, Quicksilver, Swift and Talisman were "lost in action." Companies that survived out-spent cash flow two-to-one, while debt ratios were even worse. In 2015, the average debt-to-cash flow ratio increased from 2:1 to 7:1.

Berman, like Hughes, points out that many shale plays have peaked. He notes that although the Marcellus still has gas, and will for many years, the gas cannot be profitably brought to market at these low prices. Berman clearly states that when gas prices are below the cost of production, companies cannot make a profit. The NYMEX

[93] http://www.artberman.com/about-art/

[94] www.artberman.com/shale-gas-magical-thinking-and-the-reality-of-low-gas-prices/

CO121-6 (cont'd)

cost of natural gas is currently less than $3/MMBTU,[95] and has been for most of the past few years.[96] Berman shows the costs of gas needed for companies to break even drilling the Marcellus shale, and they are all over $3/MMBTU.

Marcellus Break-Even Gas Prices			
Marcellus	Wells	EUR (BCF)	B/E Price
Anadarko	241	6.17	$4.25
Cabot	280	9.36	$3.42
Chesapeake	575	7.20	$3.91
Chevron	199	4.93	$4.89
EQT	220	9.42	$3.41
Range	643	3.85	$5.75
Shell	305	3.20	$6.56
Southwestern	238	5.81	$4.73
Talisman	354	4.31	$5.33
Average For COG,CHK & EQT			$3.58

Table 1. Marcellus break-even gas prices. COG: Cabot, CHK: Chesapeake. Source: Drilling Info and Labyrinth Consulting Services, Inc.

Berman also analyzes the break-even cost of gas for Haynesville, Utica, and Woodford shale plays, which are all above the current price of natural gas:

Shale Gas Break-Even Price Summary			
Play	Range	Average	Avg of Low-Cost Operators
Haynesville	$5.29-$6.82	$6.57	$5.39
Marcellus	$3.41-$6.56	$4.69	$3.58
Utica	$3.24-$7.93	$5.93	$4.51
Woodford	$5.83-$7.77	$6.83	$5.93

As Mr. Berman states:

> Falling gas prices have exposed the delusion of shale gas magical thinking. Production growth was funded by debt. Capital in search of yield continued to flow and over-production pushed prices below $2 by the end of 2015.

[95] The cost of NYMEX natural gas per Bloomberg is $2.78 on 2/28/17: https://www.bloomberg.com/energy

[96] http://www.eia.gov/todayinenergy/detail.php?id=29552

CO121-6 (cont'd)

> The wreckage is clear from disastrous first quarter financial data and falling production. The Barnett and Fayetteville plays that were supposed to last 100 years are dead at current prices. The Haynesville will probably follow soon enough.
>
> Capital may continue to flow to shale gas companies but most of it will be used to repair balance sheets. Prices will gradually increase and financially stronger companies with core positions in the Marcellus and Utica plays will survive. Many companies will not.

Finally, Berman notes that "[t]he U.S. has perhaps a decade of gas supply at about $6 and considerably more at higher prices. By the time prices reach those levels, the folly of export will be apparent."[97]

G. Ratepayers could be stuck with stranded assets.

Since pipelines and power plants are expected to deliver and burn fracked gas for over 30 years, Hughes' and Berman's data deserve a high level of scrutiny. New natural gas infrastructure projects that are completed only to become unviable shortly thereafter put ratepayers at risk of paying for stranded assets. These significant findings require that regulatory bodies such as FERC and state commissions charged with protecting ratepayers against imprudent expense, answer Hughes' questions:

1. What are the justifications for the substantial projected increase in shale gas from 2015 to 2040 and beyond?
2. Why is the difference so large between AEO's 2015 production estimates and its 2016 production estimates?
3. How can overall shale gas production increase 31% from AEO2015 to AEO2016, and add the assumption that natural gas prices will be 20% lower over the same period?

[97] http://www.artberman.com/shale-gas-magical-thinking-and-the-reality-of-low-gas-prices/

CO121-6 (cont'd)

The answers to these questions are crucial to the need for the ACP and its long-term viability. Customers should not have to bear the burden for misguided pipeline construction.

III. The DEIS fails to include critical information to determine direct and indirect environmental and socioeconomic impacts.

CO121-7

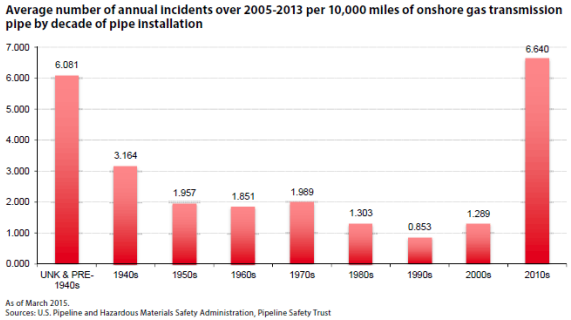
A. The DEIS does not adequately assess safety concerns.

Section 4.12 of the DEIS does not adequately assess the AP-2 threats to safety of North Carolina communities along the pipeline. In response to a number of safety concerns expressed by public commenters during the "scoping" period, FERC simply responds that "ACP and SHP (Supply Header Project) aboveground facilities would be designed, constructed, operated, and maintained in accordance with DOT Minimum Federal Safety Standards in 49 CFR 192."

Since 2010, there has been, according to Pipeline and Hazardous Materials Safety Administration ("PHMSA") data, a five-fold increase in the number of pipeline incidents per 100,000 miles of gas transmission pipeline (see figure below). Such a rise is evidence that the DOT standards themselves are inadequate to prevent pipeline incidents, or that the inspection and enforcement of those standards is failing, likely due to rushed pace of construction, or both.

CO121-7 We disagree. See the responses to comments CO67-15, CO67-14, and CO66-56.

CO121-7 (cont'd)



According to the DEIS, "Section 157.14(a)(9)(vi) of FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection, or certify that it has been granted a waiver of the requirements of the *Reliability and Safety* 4-472 safety standards by the DOT in accordance with section 3(e) of the Natural Gas Pipeline Safety Act." The PHMSA data above necessarily raise the question as to whether the required certification by an applicant is adequate to assure compliance in a time when the motivation to construct pipelines as quickly as possible.

The DEIS identifies one High Consequence Area ("HCA") each in Northampton, Halifax, and Wilson Counties, and multiple HCA's in Nash, Johnston, Cumberland, and Robeson Counties, indicating areas of higher occupied building density or where the impact circle is greater than 660 feet and intercepts 20 or more buildings for human occupancy or an identified site with anticipated occupancy more than 50 days per year or with disabled persons difficult to evacuate. A basic right should be for any person who will stay for extended periods or reside in a building close to a major gas pipeline to

CO121-7 (cont'd)

be aware of its presence and to be trained to recognize and respond to, and then report and evacuate, any evidence of a pipeline leak or disturbance. This is particularly critical for residents in an HCA.

When staff of Clean Water for NC, one of the Public Interest Groups, met with residents door to door in an identified HCA (though it had not been formally identified at the time of the visits) in Garysburg, NC (Northampton County) or at several HCA locations in Robeson County, there was almost no awareness of plans to construct the ACP or the size of the pipeline, and certainly not that their residence was in or near an HCA. This deprives residents of the right to informed participation in public scoping meetings, FERC comment sessions (which fell far short of any reasonable definition of public "hearings"), or the ability to give informed comment as well as take any actions that would protect their lives and property from the higher risks resulting from construction of the ACP. FERC appears to unreasonably discount the additional risks of a pipeline incident faced by existing residents, who are already at high risk of extreme natural events. This is entirely inappropriate and deeply disrespectful of the rights of residents along the route, many who are disproportionately low income and people of color.

The DEIS describes Dominion consulting with Local Emergency Planning Committees ("LEPCs") and fire and emergency management officials. From experience and a study by Clean Water for North Carolina of NC LEPCs, many of them are not functioning at all or are only meeting annually, and are seldom discussing urgent public safety matters. While fire and emergency services personnel may be more ready for such a consultation, we can reasonably assume Dominion and its contractors will

CO121-7 (cont'd)

downplay potential safety hazards and the risks associated with any response. There is no assurance that equipment available to them will be adequate to deal with a major incident. Further, in a 2016 Clean Water for NC phone survey of Emergency Directors and County Managers in relevant NC counties, several were completely unaware the pipeline would be traversing their county or had no understanding of the planned timing. One Emergency Management Director said he thought the pipeline would be constructed starting in 2025.

The DEIS includes "direct mailings" to police, fire and emergency officials as one of the ways that Dominion will stay in touch with them. This is wholly inadequate to assure that the information is incorporated into staff knowledge and agency planning. Even where adequate training programs are established for such personnel, the turnover of staff will necessarily require retraining in person with updates on at least an annual basis. Such training must also include familiarity with all remote monitoring systems used by Dominion and the ability to check and report on any monitoring failures.

As the largest categories of pipeline incidents for recently built pipelines are associated with equipment failure and excavation, additional redundancy and increased frequency of on-site testing must be required for all systems associated with pipeline safety, and more visible and frequent pipeline signage must be required on all pipelines.

FERC's analysis of safety implications of the ACP is simplistic and minimizes the risk, and establishes inadequate requirements for public notification. Thus, the DEIS fails to meet the requirements of NEPA.

CO121-8 B. The DEIS is inadequate in its analysis of cultural resources, including those of Native Americans.

The DEIS in Section 4.10 on cultural resources provides only cursory analysis of the potential impact of the ACP, stating

> Construction and operation of ACP and SHP could adversely affect historic properties. These historic properties could include prehistoric or historic archaeological sites, districts, buildings, structures, and objects, as well as locations with traditional value to Native Americans or other groups.

The DEIS states that "Surveys, reporting, and [National Registry of Historic Properties] determinations are not complete for cultural resources along ACP." Although Dominion will continue to conduct surveys and file the reports as they are prepared, it is unfair to ask the public to comment on incomplete information about impacted cultural and historical resources. FERC cannot make a decision on the pipeline based on incomplete surveys.

The DEIS states "compliance with section 106 of the NHPA has not been completed for ACP and SHP. Dominion still needs to complete cultural resources surveys of proposed project areas and treatment plans for NRHP-eligible sites that cannot be avoided." The provisions for mitigating the impacts of the ACP are again only cursory and incomplete. FERC states in the DEIS that Dominion

> should not begin construction of ACP and SHP facilities or use of contractor yards, ATWS, or new or to-be-improved access roads until:
>
> A. [Dominion files] with the secretary:
>
> I. all survey reports, evaluation reports, site treatment plans, and cemetery avoidance plans; and
>
> II. comments on all reports and plans from the Pennsylvania, West Virginia, Virginia, and North Carolina SHPOs; the MNF; GWNF; and NPS; as well as any comments from federally recognized Indian tribes; and other consulting parties, as applicable;

CO121-8 Comment noted.

CO121-8 (cont'd)

B. the ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and

C. the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies Atlantic and DTI in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

The Cultural Resources section of the DEIS, like many other sections, is incomplete and does not provide sufficient information for the public to adequately comment on the project. Dominion has not completed the necessary groundwork for FERC and the public to thoroughly understand the potential impacts of the project on cultural and historic resources. Though FERC suggests in the DEIS that Dominion should not begin construction until relevant reports and plans are filed with the agency, this still would not allow State agencies, the public, and other interest groups to review a complete DEIS before a decision is granted by FERC.

In North Carolina, there are at least 92 cultural resource sites along the pipeline route that could be impacted. These include "45 archaeological sites, 16 cemeteries, 2 battlefields, and numerous standing structures." In addition "the project area of potential effect (APE) intersects with two battlefields in North Carolina, the Averasborough Battlefield and the Bentonville Battlefield." However, State Historic Preservation Officer ("SPHO") comment on most of these sites is still pending. The DEIS states "the SHPOs have not provided comments on the reports that [Dominion] filed in September 2016 (archaeology reports) and October 2016 (historic architecture) for all three states." Until the SHPOs have been able to review all of the sites and provide comments, Dominion should not be able to begin construction. If the reviews are incomplete, and a site is

CO121-8 (cont'd) disrupted by the pipeline or construction, we could lose an invaluable cultural or historic resource that may not ever be able to be restored.

CO121-9 Dominion contracted with Environmental Resources Management to conduct the cultural resource investigations for the ACP. However, we know from experience with other pipelines like Keystone and the Dakota Access pipeline that these types of private consulting firms are not able to identify many sites of potential cultural significance to Native American tribes. Some sites may be ceremonial or have native plants significant to traditional practices, and an archaeologist would likely not have the cultural knowledge necessary to recognize these.

CO121-10 The failure to recognize cultural and historic resources is compounded by the inadequate provisions in the DEIS Unanticipated Discovery Plans. The DEIS states that Dominion "submitted Unanticipated Discovery Plans outlining the actions they would take in the event that archaeological resources including human remains were inadvertently exposed during project construction." The discovery plans state that if Dominion or its contractors come across any significant cultural or historical discoveries during construction, they are supposed to stop construction and report it to the Environmental Investigator. But this would rely on the ability of Dominion employees and contractors to recognize these resources, and the integrity and ethics of Dominion to actually cease construction. Instead, Dominion should be required to have an independent professional archaeologist on-site for any ground-disturbing activities, and if any cultural resources are found then any further construction should be halted until an appropriate review has been conducted.

CO121-9 See the response to comment CO70-2.

CO121-10 Currently there is no requirement for ongoing cultural monitoring of project activities. Sections 2.5.1 and 2.5.2 discuss the environmental training that would be implemented by Atlantic and DETI for all construction personnel, including EIs. In addition, as discussed in section 2.5.3, Atlantic and DETI would participate in a third-party compliance monitoring program during construction of ACP and SHP. The third-party compliance monitors would be selected and managed by FERC staff, and provide daily environmental compliance monitoring services for the projects.

CO121-11 As noted in the DEIS, FERC consulted with federally recognized American Indian tribes about the ACP. However, they failed to comment on any consultation with the Lumbee Tribe, a state-recognized tribe with sizeable populations in Robeson and Cumberland Counties in North Carolina.[98] There are 58,306 individuals in the state of North Carolina who identified as Lumbee (alone or in combination) in the 2010 census, and 42,111 (>72%) of these individuals live in counties that would be affected by the pipeline.[99] Members of the Lumbee Tribe make up 38% of the entire population of Robeson County. The Lumbee Tribe is the largest non-federally recognized tribe east of the Mississippi River, and the ninth largest non-federally recognized tribe in the U.S.

Consultation with tribes like the Lumbee is important to protect cultural resources, as well as represent the concerns of its members, and their ties to the land. The Advisory Council on Historic Preservation ("ACHP") states that a federal agency may invite groups to participate in consultation if they have a demonstrated interest in the effects of the project. A demonstrated interest could be that a tribe has "ancestral ties to the area of the undertaking."[100]

Similarly, the Commission rule at 18 CFR 2.1c provides the policy rationale for consultation, "high-level meetings to discuss" tribal concerns. Subsection (e) states: "The Commission in keeping with its trust responsibility, will assure that tribal concerns and interests are considered whenever the Commission's actions or decisions have the potential to adversely affect Indian tribes or Indian trust resources." The Commission's

[98] It is important to note the federal Lumbee Act of 1956 acknowledges the Lumbee Indians, but specifically declines to provide the tribe with access to federal programs. Public Law 570, Chapter 375 (June 7, 1956).

[99] http://www.doa.nc.gov/cia/documents/populationdata/TotalPopulationbyTribebyNCCounty/pdf

[100] http://www.achp.gov/pdfs/consultation-with-indian-tribes-handbook-june-2012.pdf

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CO121-11 See the response to comment NAT1-4.

CO121-11 (cont'd)

Policy Statement on Consultation with Indian Tribes in Commission Proceedings provides clear guidance on the necessity for consultation and procedures for doing so.[101]

With such a large population in the pipeline's area of potential effect, the tribal councils certainly have a demonstrated interest in the project. In addition to the Lumbees, the Meherrin, Haliwa-Saponi, and Coharie Tribes are state-recognized tribes that live along the pipeline route, and whose members constitute most of the 30,000 American Indians who stand to be impacted by this project. All four of these tribes are recognized by the state of North Carolina, and the proposed pipeline route crosses all of their traditional territories. These tribes maintain unique cultural and religious attachments to specific lands and waters within North Carolina. Although regulators may not be compelled by law to formally consult state-recognized tribes, NEPA and the other guidance documents recommend engaging all tribes in formal consultation.

The DEIS does not comply with federal guidelines for the protection of cultural and historic resources, and further, does not allow State agency or public commenters the opportunity to review complete information. If the Lumbee Tribe, or any of the other tribes along the ACP route, were purposefully left out of the DEIS and consultation process, FERC should provide justification for that decision. If leaving them out was an oversight, FERC should officially consult with the Lumbee and the other tribes before any decisions are made.

[101] Order No. 635, Docket No. PO03-4-000.

CO121-12 C. The DEIS does not adequately address economic impacts from the proposed pipeline.

The introduction to the Socioeconomic Impact section of the DEIS on page 4-383 indicates a substantial bias in its analysis of "potential" socioeconomic impacts of the ACP. It lists first the impacts most favorable for pipeline development:

> Increased property tax revenue, increased job opportunities, and increased income associated with local construction employment are potential effects of the projects… increased employment opportunities, increased demand for housing and public services, tourism and transportation impacts, and an increase in government revenue associated with sales and payroll taxes.

Only "increased traffic or disruption of normal traffic patterns" are named as potential adverse impacts. Overall there is little economic justification for the "positive" impacts, and the analysis of the "negative" impacts is completely insufficient.

The DEIS concludes that there is adequate rental housing and public services (hospitals, law enforcement, fire depts. and schools) in North Carolina counties along ACP to handle the influx of temporary workers from outside (about half of the total construction workforce for each spread) from late 2017 to 2019. This analysis assumes that workers from outside the area will not bring their families, and fails to account for any economic or social disruptions due to the temporary influx, including overbuilding of hotel units or other housing not needed after a few months.[102] The DEIS states that there will only be a temporary minor increase in hiring to meet needs of rental and retail services. Dominion plans to have three NC construction "spreads" with 885 workers and 85 inspectors in each for a period of months, with about half expected to be workers

[102] Such dislocation has been reported in other areas where oil and gas development increased quickly and crashed. It is unclear if local economies and governments are aware of the very temporary nature of the construction, followed by few permanent 20 jobs in two of the North Carolina counties.

CO121-12 We disagree that the analysis was inadequate. The EIS was prepared in accordance with NEPA, CEQ guidelines, and other applicable requirements. The EIS includes sufficient detail to enable the reader to understand and consider the issues raised by the proposed project. Potential impacts on the local economy are discussed in detail in section 4.9.8 of the EIS.

CO121-12 (cont'd) from outside the region. Dominion's own studies forecast approximately $72,000 in additional individual income tax payments to N.C. Department of Revenue during operational years, this would indicate an insignificant increase in economic benefits to counties where employees are located. A high proportion of permanent employees can be anticipated to have been recruited from outside North Carolina. The only permanent jobs anticipated would be 15 employees at the compressor station and offices in Northampton and 5 in Johnston. No significant positive economic benefit can be assumed.

CO121-13 The DEIS states that Dominion would each have a health and safety plan to prevent and minimize accidents; but acknowledges that use of local emergency, fire and health services could occur, but fails to account for the need for increased capacity and training of local services to deal with any emergencies. The DEIS claims Dominion would maintain emergency response plans so concerns about costs and local ability to respond to a catastrophic accident are unfounded. As a result, there will be no significant added expenses for local government services. In fact, local fire and emergency responders are often the first responders to a pipeline explosion or fire, and the number of significant pipeline incidents has been increasing in recent years, especially on pipelines built since 2010. Data from the Pipeline and Hazardous Materials Safety Administration show a dramatic increase in pipeline incidents for pipelines built in the past 6 years, even higher than for pipelines built before 1940, which provides a reasonable basis for public safety concerns.

CO121-13 Comment noted.

CO121-14

The DEIS is dismissive of the Key-Log Economics study of economic impacts on property values in Virginia counties.[103] Instead it cites studies commissioned by Dominion and real estate sources, with the claim that they are independent, stating that there is no impact on value of local properties, except in the first few years after a pipeline accident. The Key-Log study demonstrate that the DEIS's assessment of socioeconomics is flawed because FERC fails to critically evaluate applicant-provided assessments of potential economic benefit when those assessments use flawed research methods, applies the methods inappropriately, and bases estimates on unrealistic assumptions. FERC also fails to critically evaluate flawed gas-industry-sponsored and/or promoted research, which falsely concludes pipelines do not diminish property value. FERC fails to consider external costs due to lost ecosystem service value, carbon and other greenhouse gas emissions, and impacts on regional recreation, tourism, and other amenity-dependent economic development. Finally, FERC unreasonably dismisses independent research into the likely economic impacts of the proposed Mountain Valley Pipeline. The Key-Log analyses undermine FERC's conclusion that the proposed projects would not have a significant adverse effect on the socioeconomic conditions of the project area.

There is a troublesome pattern of FERC uncritically accepting the claims of ACP-contracted studies, while dismissing independent studies simply because they have been contracted by environmental organizations or organizations opposing pipeline development. The DEIS acknowledges that a variety of factors make such analyses

[103] Key-Log Economics, "*Economic Costs of the Atlantic Coast Pipeline: Effects on Property Value, Ecosystem Services, and Economic Development in Western and Central Virginia*," February 2016. www.abralliance.org/wp-content/uploads/2016/02/Economic_Costs_Of_The_Atlantic_Coast_Pipeline-KeyLogic_2-16-16.pdf

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CO121-14 We disagree that the analysis was inadequate or erroneous. The EIS was prepared in accordance with NEPA, CEQ guidelines, and other applicable requirements. The EIS includes sufficient detail to enable the reader to understand and consider the issues raised by the proposed project. Potential impacts on property values are discussed in section 4.9.7 of the EIS. See also the response to comment CO10-6.

CO121-14 (cont'd)

problematic. "Perceived safety issues" or limitations on land uses with a permanent easement may effect number of buyers and extend a property's stay on the market. This is one of the key concerns of many rural residents who view their land and its use as a legacy that they had expected to be able to pass to descendants. Most of these studies of buyer perception have been done in higher density areas than the predominantly rural areas in which ACP would be built, so impacts on land value and long term use may be expected to be more acute in rural areas.

CO121-15

D. The DEIS does not adequately address sociological and demographic issues related to environmental justice.

The DEIS purports to include an environmental justice analysis in Section 4.9.9 and concludes that no disproportionate impacts on poor or minority communities along the preferred route.[104] The analysis in the DEIS Starts by assuming the principle policy impact of the Environmental Justice Executive Order is only to ensure widespread public participation.[105] FERC congratulates Dominion for widespread public notification and participation, but lists inadequately noticed meetings with only 330 comments, a tiny fraction of the population that could be impacted in even one of the three states the ACP would traverse.

The DEIS acknowledges that more than half of North Carolina counties are below the median income for the state, and notes that "[t]wenty-seven of the 42 census tracts in North Carolina within a 1-mile radius of ACP facilities have a higher percentage

[104] DEIS pp. 4-383 - 4-413.

[105] Executive Order 12898, "Environmental Justice for Low Income & Minority Populations," 1994. www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf

CO121-15 See the response to comment CO86-11.

CO121-15 (cont'd)

of persons living below poverty-level when compared to the state." This fact, by itself, indicates that the route chosen creates disproportionate impact of the pipeline on low income residents, and therefore contradicts the DEIS conclusion that "no environmental justice populations are impacted."

The DEIS analysis of minority populations is remarkable in its contorted logic used minimize the relative impact on people of color. It notes that "[i]n North Carolina, minorities comprise 30.5 percent of the total population. The percentage of minorities in the North Carolina census tracts within 1 mile of ACP ranges from 12.5 to 95.5 percent. In 13 of the 42 census tracts, the minority population is meaningfully greater than that of the county in which it is located." FERC uses this result to reinforce its conclusion that there are no disproportionate impacts on environmental justice populations.

Remarkably, unlike using poverty data in census tracts within one mile of the pipeline corridor to compare to the state as a whole, FERC's study only compares minority population percentages in census tract near pipeline with the percentage of minorities in the county in which this occurs. As most of the North Carolina counties along the proposed ACP corridor have minority populations significantly above the state average this greatly minimizes the apparent disproportionality in minorities impacted. Northampton County, for instance, is 58% African American, compared to a state average of 22%. A comparable analysis to disproportionate impacts on low income residents would use a comparison to state minority populations, and would result in a dramatically different conclusion.

CO121-15 (cont'd)

Based on a recent study conducted by researchers at the Research Triangle Institute,[106] it is highly likely that the proposed ACP will cause significant disproportionate impacts on minority populations. The researchers downloaded county-level 2010 Decennial Census data for the entire state, and determined the number of people in every county who self-identified as white and non-Hispanic. They subtracted that subpopulation from the total population of each county to obtain the number of "minority" residents, and divided the states' counties into two groups, those that were crossed by the proposed pipeline route and those that were not. The proportional minority population was calculated for each group. Using a two-sample test of proportions, the proportion minority population of the counties that would be crossed by the proposed pipeline with the proportion minority population of the rest of the counties in the state was compared. The results are below:

Pipeline route counties' proportion minority population	0.5099
Proportion minority population for rest of the counties in the state	0.3295
P-Value (one-tailed test)	0.0000
Conclusion	The counties crossed by proposed ACP route collectively have a significantly higher percentage minority population than the rest of the counties in the state (at the 99% confidence level).

[106] Allpress, J., Hofmann, J., Wraight, S., Depro, B. (2017). *U.S. Census Socioeconomic Data, Environmental Justice, The Atlantic Coast Pipeline: A Methods Report.* Unpublished manuscript.

CO121-15 (cont'd)

The failure of FERC and/or Dominion to do any serious credible analysis of without any basis or even minimal quantification, the DEIS baldly states

> The construction and operation of the proposed facilities would affect a mix of racial/ethnic and socioeconomic areas in the ACP and SHP project area as a whole. Not all impacts identified in this EIS are considered to affect minority or low-income populations. The primary adverse impacts on the environmental justice communities associated with the construction of ACP and SHP would be the temporary increases in dust, noise, and traffic from project construction. These impacts would occur along the entire pipeline route and in areas with a variety of socioeconomic backgrounds.

In its lack of understanding of the simple term "disproportionate," FERC claims that because impacts may be happening in low population areas, fewer people would be hurt and therefore they cannot see evidence of disproportionate impact. The DEIS states "[b]ecause the projects would generally traverse rural areas, the number of persons who would be at risk of injury due to a pipeline failure would be low, and there is no evidence that such risks would be disproportionately borne by any racial, ethnic, or socioeconomic group." Just because there is a low population concentration does not mean that people of low income or people of color would not be disproportionately impacted. In fact, in comparing the current ACP corridor to earlier proposed ACP routes, it is clear that the pipeline has been moved to areas of greater poverty and more people of color, the very definition of "Environmental Injustice."

Environmental justice analyses are mandatory in Federal environmental documents, but there is no standard method for computing disproportionate impacts. As such, the research community has long raised concerns about potential misapplication

CO121-15 (cont'd)

of methods or tailoring of methods to support a predetermined outcome.[107] The environmental justice section of the present DEIS is an example of such misapplication.

As further described above in the section on cultural resources, the analysis fails to identify major impacts on American Indian populations living along the preferred pipeline route. Data from the DEIS shows that in North Carolina alone, approximately 30,000 American Indians live in census tracts along the route. This number represents one quarter of the state's American Indian population and 1% of the entire American Indian population of the U.S. The environmental justice analysis is silent on this issue, but instead concludes that the preferred route has no disproportionate impacts on minority communities. It draws this conclusion by counting up the number of census tracts with "meaningfully greater" minority populations than the county in which it they are located. Failure of the environmental justice analysis to detect these impacts is based on at least two flaws in the method.

The first flaw is that the environmental justice analysis aggregates results from counties treated as separate comparison groups but fails to account for variations in population size and racial make-up among counties. County-level data can provide valuable comparison statistics for targeted census blocks, but when the baseline data change for each county (as is the case here), county-level results cannot be compared

[107] Rose, L., et al., *Environmental Justice Analysis: How Has It Been Implemented in Draft Environmental Impact Statements?*, Environmental Practice 7, 235-245 (2005); Hartell, A. *Methodological challenges of environmental justice assessments for transportation projects*, Transportation Research Record: Journal of the Transportation Research Board, 21-29 (2007); Holifield, R. *Environmental Reviews and Case Studies: Accounting for Diversity in Environmental Justice Screening Tools: Toward Multiple Indices of Disproportionate Impact*, Environmental Practice 16, 77-86 (2014); Liang, J. *Defining Environmental Justice Communities for Regulatory Enforcement: Implications from a Block‐Group‐Level Analysis of New York State*, Review of Policy Research 33, 666-685 (2016).

CO121-15 (cont'd)

to draw conclusions about impacts along an entire project route. Regulators may be able to adjust the existing analysis for changes to baseline data on a county-by-county basis, but even this analysis lacks the ability to draw statistical conclusions. A more robust method would involve pooling all of the impacted census tracts for each state, and comparing this test population with a suitable reference population comprising appropriate non-affected census tracts from each state. This method would allow regulators to (1) compute disproportionality rates from the demographic profiles of test and reference populations and (2) determine whether these rates are statistically significant using tests such as the Wilcoxon Rank-Sum test or the T-test. This preferred method can be conducted for minority population as a whole and for specific racial or ethnic categories, including American Indians, African Americans, or other minority populations.

Second, the definition of "meaningfully greater" is flawed. DEIS footnote 20, page 4-412, defines "meaningfully greater" as ten percentage points higher than the comparison group. By defining differences in terms of percentage points, the analysis masks relevant information in areas where minority (or poor) populations are both very small and very large. At the small end of the scale, a reference population that comprises, say, 2% minority individuals would require that the test population be at least 12% minority in order to identify a disproportionate impact. In this example, the minority population would have to be impacted at six times the rate of the reference population before registering as disproportionate. At the other end of the scale, the reference populations themselves become an environmental justice consideration. If a reference population is mostly made up of minority populations that the environmental

CO121-15 (cont'd) justice analysis is intended to study, then the choice of reference population becomes suspect, raising the question "meaningfully greater" than what?

The current analysis takes a single, interstate project and breaks it down into a series of county-level projects for evaluating impacts on minorities. In doing so, the analysis masks large disproportionate impacts on minority populations, particularly American Indians and African Americans in eastern North Carolina. According to the executive summary of the DEIS, the public benefits of the project are realized at the regional scale and not necessarily in the counties or census tracts adjoining the pipeline route. For these reasons, FERC should conduct a new environmental justice analysis that considers the nature of this pipeline as a single, inter-state project and considers reference populations more carefully given the stated motivation for the project.

Z-2543

E. The DEIS provides insufficient and inaccurate information on land impacts and land use concerns.

The DEIS acknowledges that ACP construction will impact at least 2258 acres in NC, of which 1125.5 will be used for permanent corridor. Other land used by the project in NC will include 460 additional acres of temporary workspace, 45 acres for Compressor Station 3 in Northampton County, and 14.8 acres for metering stations, in addition to

CO121-16 dozens of acres for new access roads and contractor yards. This large area of land required for the project would reduce or modify future use of a significant amount of land in areas already disproportionately impacted by low levels of economic development.

CO121-17 However, the amount of information missing in the DEIS is substantial, including soil surveys and detailed practices and mitigation measures that would be needed to assess the project's impacts on land and soils, as well as cumulative impacts. The

CO121-16 See the response to comment CO68-12.

CO121-17 We disagree that the analysis was inadequate or erroneous. The EIS was prepared in accordance with NEPA, CEQ guidelines, and other applicable requirements. The EIS includes sufficient detail to enable the reader to understand and consider the issues raised by the proposed project.

CO121-17 (cont'd) Public Interest groups conclude that the ACP DEIS does not provide sufficient information to justify the stated conclusion that:

> given the proposed projects' mitigation measures, cumulative impacts on land use, recreation, special interest areas, and visual resources would mostly be limited to the construction phase (except as noted above) and would be temporary and minor, we conclude that cumulative impacts on these resources would not be significant'

CO121-18 Despite the DEIS conclusion that regional economic benefits will outweigh the lack of local economic benefits—a fact that the Public Interest Groups challenge in our analysis of gas supply need and impact of the project on energy cost—we contend that, after a short pulse of economic activity associated with construction, the net effect of the pipeline will be reduced flexibility for income generating landowner uses, reduced land values, reduced overall local real estate tax revenues and increased local government costs for services including emergency response services. As only a very few industries would be large enough to pay for a tap fee and pipeline extensions to access the gas supply, there is no realistic projection of indirect permanent jobs after pipeline construction except close to the largest cities.

CO121-19 FERC calls for reduction of the width for which eminent domain could be used on non-North Carolina section of the ACP to 50 feet, saying that is "sufficient to efficiently and safely operate large diameter natural gas pipelines." Simply reducing the width for which eminent domain would be available will not assure safe land use outside the 50 foot corridor, and the question remains why eminent domain should be granted for any section of the ACP if sufficient compensation is not offered to landowners for loss of land use, inconvenience, and other factors.

CO121-18 Comment noted

CO121-19 See the response to comment CO50-2.

CO121-20 Dominion and its contractors are required to use PHMSA minimum safety standards for construction and 18 CFR 380.15 (Siting and Maintenance Requirements) and other applicable federal and state/commonwealth regulations, including the requirements of the U.S. Department of Labor, Occupational Safety and Health Administration. These minimum requirements are intended to protect the construction work force, but the rise in incidents along pipelines built since 2010 documents the inadequacy of these standards for recently built pipelines in operation. This clearly increases the liability and safety risk for landowners in or near the pipeline corridor and further reduces the range of safe uses of land and intrinsic land values, whether or not a pipeline incident occurs.

CO121-21 F. The DEIS presents an inadequate analysis of the impacts of erosion and sedimentation from pipeline construction.

According to the DEIS, "Temporary erosion controls would be installed along the construction right-of-way immediately after initial disturbance of the soil and would be maintained throughout construction. Temporary erosion control measures would remain in place until permanent erosion controls are installed or restoration is completed. [Dominion has] committed to employing Environmental Inspectors (EI) during construction to help determine the need for erosion controls and ensure that they are properly installed and maintained." The Best Management Practices called for as a key element of erosion and sedimentation prevention cannot be assumed to be adequate to prevent erosion from the construction site, or sedimentation of downstream waters under conditions of heavy precipitation.

CO121-20 See the responses to comments CO67-15 and CO95-10.

CO121-21 We disagree. Atlantic and DETI would adopt the general construction, restoration, and operational mitigation measures outlined in our Plan and Procedures, which are a set of construction and mitigation measures that were developed in collaboration with other federal and state agencies and the natural gas pipeline industry to minimize the potential environmental impacts of the construction of pipeline projects in general. In addition, Atlantic and DETI have identified additional measures they would implement during construction to reduce impacts; we reviewed these measures in the EIS, concluded if they would be effective, and recommended additional measures where appropriate. See also the response to comment CO95-5.

CO121-22 A careful assessment of erosion and sedimentation is crucial as the construction of the proposed project in NC would disturb over 930 acres of wind-erodible soils, 39 acres of water erodible soils, over 900 acres of hydric soils, as well as 1,740 acres of prime farmland. The ACP would clear a 150 foot wide corridor along the length of the pipeline route during construction with a few exceptions in wetlands, which would "remove [the protective cover and expose] the soil to the effects of wind and rain, which increases the potential for soil erosion and sedimentation." Additionally, the project would convert a significant amount of forested land to herbaceous cover in the 75-foot wide permanent right-of-way, including some highly erodible soils. The DEIS acknowledges that "[i]mpacts on waterbodies could occur as a result of construction activities in stream channels and on adjacent banks." Those impacts include "local modifications of aquatic habitat involving sedimentation, increased turbidity, and decreased dissolved oxygen concentrations." Additionally, the DEIS states that:

> The clearing and grading of stream banks could expose soil to erosional forces and would reduce riparian vegetation along the cleared section of the waterbody. The use of heavy equipment for construction could cause compaction of near-surface soils, an effect that could result in increased runoff into surface waters in the immediate vicinity of the proposed construction right-of-way. Increased surface runoff could transport sediment into surface waters, resulting in increased turbidity levels and increased sedimentation rates in the receiving waterbody. Disturbances to stream channels and stream banks could also increase the likelihood of scour after construction.

Those impacts would harm the aquatic organisms that rely on the affected streams for their survival. As FERC states:

> Increased sedimentation and turbidity resulting from in-stream and adjacent construction activities would displace and impact fisheries and aquatic resources. Sedimentation could smother fish eggs and other benthic biota and alter stream bottom characteristics, such as converting sand, gravel, or rock substrate to silt or mud. These habitat alterations could reduce juvenile fish survival, spawning habitat, and benthic community diversity and health. Increased turbidity could

CO121-22 Comments noted. Potential impacts on aquatic resources resulting from sedimentation and turbidity and the mitigation measures that would be implemented to reduce these impacts are described in section 4.6.4. Note that the construction workspace would be 125 feet wide along the AP-1 mainline, not 150 feet wide as described in the comment; a 150-foot-wide construction workspace is only proposed in agricultural areas along AP-1 (refer to table 2.2.2-1). Also, based on FERC recommendations, Atlantic would maintain a 50-foot-wide permanent right-of-way over the entire ACP route (previously, the AP-1 segment was proposed as 75-foot-wide permanent right-of-way) (refer to table 2.2.2-1).

CO121-22 (cont'd)

also temporarily reduce dissolved oxygen levels in the water column and reduce respiratory functions in stream biota.

Despite generally acknowledging these impacts, FERC nonetheless concludes that "[n]o long-term or significant impacts on surface waters are anticipated as a result of the projects" and that "[t]emporary impacts would be avoided or minimized" primarily because the applicants will use dry open-cut crossing methods at most major crossings and will adhere to Best Management Practices when performing clearing and grading in riparian areas. Following from that conclusion, FERC finds that "constructing and operating the ACP would not significantly impact fisheries and aquatic resources."

The DEIS's conclusion that the project would not have significant adverse impacts on fisheries and aquatic resources is flawed for several reasons. FERC lacks adequate information to determine the impacts that would be associated with the use of wet open-cut crossing methods at three of the major rivers that would be crossed by the ACP. Without that information, FERC cannot reasonably conclude that the project would not significantly impact the aquatic ecosystems in those waterbodies. FERC then unjustifiably relies on the use of Best Management Practices to conclude that clearing and trenching within the relevant watersheds during pipeline construction will not significantly contribute to sedimentation and related impacts of turbidity.

In the DEIS, FERC provides no evidence to justify its conclusion that BMP measures would successfully minimize sedimentation impacts, and past experience with similar projects in erodible soils such as those traversed by the ACP demonstrates that they would be inadequate. FERC fails to account for the increased sedimentation that would result from the conversion of mature forest to herbaceous cover within the 75-foot wide permanent right-of-way along much of the pipeline route. FERC's failure to

CO121-22 (cont'd) analyze those impacts renders its conclusion that the projects would not significantly impact aquatic resources unsupportable. Because of those shortcomings, FERC's DEIS does not comply with NEPA.

CO121-23 G. The DEIS fails to properly address the impacts of the proposed pipeline on groundwater resources and safety of well users.

FERC's conclusion on page 4-86 that "[n]o long term impacts on groundwater are anticipated from construction or operation of ACP" is without basis. The Public Interest Groups believe the methods proposed are actually designed to prevent detection of such long term impacts.[108] For most of its length in North Carolina, the ACP would be located above the Northern Coastal Plain Aquifer system, especially vulnerable to contamination. The uppermost sand aquifers at shallow depths are particularly vulnerable to contamination or disruption due to human. Given the large number of households in or within ½ mile of the proposed corridor dependent on well water, even with special precautions, construction could adversely impact safe water supplies.

The DEIS acknowledges that there are a large number of private wells within 150 feet of the pipeline workspace in Nash, Johnston and Cumberland Counties.[109] Also admitted is that Dominion and its contractors have not completed a survey of wells within 150 feet due to lack of survey access and landowner objections to being surveyed for this project. A 150-foot buffer between water supply wells and the construction workspace is inadequate. Approximate locations for wells within 500 feet of

[108] DEIS pp. 4-63 - 4-86.

[109] DEIS pp. 4-70 – 471.

CO121-23 Comment noted.

CO121-23 (cont'd)

construction workplace could be readily facilitated by GIS location of all residences outside city limits or service areas of public water utilities.

The DEIS states that surface disturbances, clearing and trenching can impact both surface water drainage and groundwater recharge patterns, with the most impact to shallow surficial aquifers. FERC contends that most construction will be 10 feet or less below the surface, and that the surface will be restored to its original contours. The DEIS offers no protocols to prevent impacts including compaction affecting recharge of shallow aquifers or infiltration of toxic or hazardous materials. The potential for toxic and hazardous materials to be released in and near the construction workspace is acknowledged, including: fuels, oils, lubricants, hydraulic fluids, and explosives for blasting.

According to the DEIS,

> Prior to construction and pending landowner authorizations, Atlantic and DTI would test water supply wells and springs within 150 feet of the construction workspace (within 500 feet of the construction workspace in karst terrain). In addition to well yields, water quality parameters that would be tested include pH, total suspended solids, total dissolved solids, conductivity, alkalinity, acidity, sulfates, oil/grease, phenolic, iron, manganese, aluminum, copper, lead, nickel, silver, thallium, zinc, chromium, arsenic, mercury, selenium, cyanide, calcium magnesium, hardness, chlorides, antimony, cadmium, beryllium, and fecal coliform. Sampling methods would comply with approved EPA and state/commonwealth sampling.

The well testing must include all water supply wells within 500 feet of the construction workspace and include ALL substances which could impact groundwater, including components of natural gas liquids. Well owners must receive a copy of all testing results, pre- and post-construction, and the opportunity to do independent testing by certified laboratories.

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CO121-23 (cont'd)

Methods protective of well users in or near the workspace cannot be achieved with a mere "recommendation" that Dominion and its contractors complete a well survey before construction begins.[110] Dominion must prepare a list of all possible wells on land parcels with potentially occupied buildings requiring a water source within 500 feet of the construction workspace, and all methods must be assured to protect well water sources for all such locations. The DEIS states that "Atlantic and DTI would conduct post-construction water quality tests to ensure water supply wells and springs are not adversely affected by construction activities. If damage claims occur, Atlantic and DTI have committed to providing a temporary potable water source, and/or a new water treatment system or well."[111] The DEIS does not require that the well water testing results would be reported to the well owner promptly, or that additional substances possibly present near contaminated sites, used in construction activities, or resulting from acknowledged potential leakage of natural gas liquids would be included in testing.

There is no information for landowners about the procedure initiate a claim if there is evidence of well water quality or quantity impacts. Moreover, a single post-construction well water test is inadequate to assure that there are no long term impacts of construction or operation. Well testing must include fuels, lubricants, hydraulic fluids and any explosives use, as well as the components of natural gas liquids and well flow rate. The DEIS acknowledges that natural gas liquids represent the greatest ongoing threat to groundwater during ACP operation. Well testing for all of the standard

[110] DEIS, p. 4-74.
[111] DEIS, p. 4-82.

CO121-23 (cont'd)

parameters, plus any hazardous or toxic materials used during construction, as well as natural gas liquids, must continue annually during the operational life of the pipeline.[112]

All well tests must be by labs certified for analysis of all of the specified contaminants and to detection levels below any North Carolina groundwater rules, 15A NCAC 02L or interim maximum allowable concentration (IMAC) standards. All water testing results must be reported to well owners with a comparison to those standards within 20 days of testing. Dominion must state the procedure for a well owner to make a claim of diminished flow rate or contamination their well for drinking water, and act within 15 days of a substantiated claim to provide bottled water and within 60 days to provide a permanent replacement safe water supply.

Relating to a Spill Prevention, Control, and Countermeasure ("SPCC") plan, the DEIS notes that,

> [Dominion has] prepared a SPCC Plan to avoid or minimize impacts of hazardous material releases during construction and operation of ACP and SHP. The SPCC Plan prescribes preventive measures such as regular inspection of storage areas for leaks, replacement of deteriorating containers, and construction of secondary containment systems around hazardous liquids storage facilities. Moreover, the SPCC Plan provides explicit guidance on handling hazardous materials during construction. Specifically, it would restrict refueling or other liquid transfer areas within 100 feet of wetlands, waterbodies, and springs, and within 300 feet of karst; prohibit refueling within 200 feet of private water supply wells and within 400 feet of municipal water supply wells; and require additional precautions (e.g., secondary containment) when specified setbacks cannot be maintained.[113]

[112] The need for water safety is compounded by the proximity of Superfund sites to the proposed route. Possible contaminated sites that could be disturbed during construction include a Superfund site and 3 brownfield sites located in North Carolina close to the AP-2 section of the pipeline, as well as 9 leaking underground storage tank sites near AP 2 in North Carolina.

[113] DEIS p. 4-84.

CO121-23 (cont'd)

The above protections are inadequate to assure that water supply wells will be protected, particularly in this area with vulnerable surficial aquifers. All pollution prevention plans prepared by Dominion to avoid or minimize impacts during construction and operation must be readily available to the public in plain language. The training of employees, inspectors and enforcement of construction violations at all stages must be transparent. Refueling or other handling of fuels and other toxic or hazardous materials must be prevented within 500 feet of wetlands, private water supplies or municipal water supply wells. Lesser setbacks in the DEIS, 100 - 400 feet, provides an inadequate margin of protection.

The DEIS says that a variance procedure is in place for requests to allow activities closer than specified setbacks. As is frequently the case, this mechanism can be dangerous and allow for reduced oversight and riskier activities with little documentation or recourse if contamination occurs. No variances must be permitted for reducing setbacks of at least 500 feet from areas where any hazardous or toxic materials will be handled.

The DEIS states in other sections that, in addition to Dominion-hired Environmental Inspectors ("EIs"), there would be third party inspectors accountable only to FERC to review compliance and prevent accidents or failures. The independent inspectors must report directly to the agency and inspection results must be available to the public. The EIs, who have the authority to stop work if violations have been detected during inspections, must have specified protections from pressure and adverse consequences from ACP or its construction contractors.

CO121-23 (cont'd)

The DEIS further states "[a]lthough the natural gas received by ACP and SHP would be processed to remove natural gas liquids (NGL), small amounts of residual NGLs may still be present in the gas. Standard operating procedures minimize the risk of release of residual NGLs that may accumulate in the pipeline." Natural gas liquids could be a substantial threat to groundwater quality, as the DEIS notes, and must therefore be included in annual well water testing throughout the operational life of the pipeline.

The Public Interest Groups strongly disagree that no long term impacts to groundwater can be anticipated. The lack of key information for this assessment and failure to include protocols to ensure that no impact will occur or will be quickly detected are failures to meet NEPA requirements.

Z-2553

CO121-24

H. The DEIS does not address water quality impacts from the proposed ACP or provide any information on mitigation.

The DEIS fails to meet basic informational requirements necessary to assess surface water, wetland impacts, and key unique ecosystems. Supplemental information has not been consolidated as part of the DEIS to fully disclose and enable assessment of the potential impacts of the proposed ACP on surface water and wetland resources or methods to mitigate those impacts. Here are several examples of deficiencies identified that make credible assessment impossible:

a. Detailed site-specific crossing plans (e.g., locations of temporary bridges, bridge types, cofferdam locations, water discharge structure locations, pump locations) and mitigation measures (e.g., analysis of alternatives to reduce

CO121-24 Atlantic and DETI propose to cross waterbodies using the wet open-cut, dry-crossing, HDD, and cofferdam methods. Although several commentors identified waterbodies that they believe should be crossed by the bore or HDD method, or that at a minimum the dry crossing method is utilized at all waterbodies, using these methods at every waterbody crossing would be technically infeasible, impractical, or would not result in a clear environmental advantage compared to the proposed dry-ditch crossing methods. Impacts on waterbodies that would be crossed by the project are addressed in section 4.3.2 of the EIS, and impacts on aquatic resources are addressed in section 4.6.4.

Crossing methods, workspace requirements, and waterbody survey information have been provided for waterbody crossings. Although site-specific plans have not been provided for all major waterbody crossings, existing design and resource information are sufficient for FERC to assess each crossing.

We believe that existing resources have been adequately characterized, that impacts have been disclosed and calculated/estimated, and appropriate mitigation measures have been proposed or recommended as conditions. We have disclosed where additional information or mitigation is necessary, and have recommended that outstanding information is provided or mitigation developed prior to allowing construction to proceed.

CO121-24 (cont'd)

impacts, restoration requirements, avoidance of cumulative impacts) are not provided as part of the DEIS;

b. A detailed evaluation of flood zones and susceptibility of property through which the pipeline is proposed to pass is necessary to fully define potential water quality impacts of tropical storms and/or hurricanes. Information on Special Flood Hazard Areas is inadequate and requires updating based on recent historic flooding events in the watersheds in the route of the proposed ACP.[114]

c. Pre- and post-construction water quality monitoring is not sufficiently defined to ensure accurate assessment of water quality impacts resulting from construction activities. A properly designed monitoring plan is required and must be publicly available as part of the DEIS. Additional information needed for a complete assessment includes sampling timelines, locations, replication, and controls.

d. The assessment of impacts associated with wetlands crossings and disruption is inadequate. This assessment should take into account wetland types and significance, susceptibility to fragmentation and irreversible impacts, including those associated with their ecological services such as water filtration, flood control, and biotic community impacts, and proposed mitigation of these potential impacts.

[114] The Designated Flood Zones referenced in the DEIS are based on the existing100-year floodplain maps. These designations must now be compared with flooding from Hurricanes Floyd and Matthew. The DEIS also notes that "the Fayetteville and Pembroke M&R stations would be within Special Flood Hazard Areas." It seems inappropriate to place crucial infrastructure, such as the metering and regulation stations, in these areas.

CO121-24 (cont'd)

e. There is insufficient detail regarding the sourcing of water for hydrostatic testing, impacts on localized water quantity, and the disposition of contaminated water following "pigging" of the pipeline.

f. As noted above, erosion, sedimentation, and turbidity are identified as potential water quality impacts, but the DEIS lacks sufficient detail to evaluate impacts from land cover changes resulting from construction and operation activities, impacts on aquatic life (benthic and pelagic). Reliance on recommended Best Management Practices (BMPs) as mitigation for these identified issues cannot be assumed to be sufficient and inspection and enforcement mechanisms are vague.

g. There is insufficient evaluation of cumulative impacts of construction and operation activities on each of the large number of watersheds that will be impacted. General assertions of minimal or no significant impact are completely unsubstantiated in the DEIS.

h. The DEIS does not evaluate, account for, nor even acknowledge the potential for impacts to headwater streams and wetlands of the Lumber River, a state park, and a state-recognized Natural and Scenic River and a federally-recognized Wild and Scenic River.

These deficiencies are representative of the information that is necessary, not only for FERC to fully evaluate the environmental impacts of the proposed ACP, but to allow the public to fully evaluate these impacts and to meaningfully participate in the NEPA process.

CO121-25

The DEIS contains other deficiencies relating to the impacts of the proposed ACP on water quality-related issues. For wetland crossings in most areas, an attempt would be made to dig up topsoil and keep it separate from subsoil so that it can be replaced after the pipeline is filled. However, the DEIS acknowledges that "[t]opsoil segregation generally would not be possible in saturated soils." It is likely that substantial loss of ecological integrity would result from mixing topsoils and subsoils in refilling trenches through wetlands. The DEIS's bald conclusion "we have determined that ACP and SHP would not significantly impact wetlands" is simply not substantiated by the information provided in the DEIS.

The DEIS section on North Carolina vegetation resources acknowledges that North Carolina pocosins, Carolina Bays, canebrake communities, and bottomland hardwood and pine forests that would be disturbed. The DEIS notes "[c]lay-based Carolina Bay wetlands (herbaceous wetlands) would be crossed by ACP; these bays are particularly abundant in Robeson, Hoke, and Scotland Counties." While the DEIS further notes the importance of these unique areas are for birds and especially amphibians, the list of federally endangered plants leaves out several key species, including the American chaffseed (*Schwalbea americana*). The Carolina Bays are extremely important ecological systems and are just briefly mentioned in the DEIS. Of importance are facts not included in the DEIS; "an estimated 79 percent of the bays in NC and SC have been cleared of native vegetation," and the "unaltered bays are wildlife habitat for several endangered animals and rare plants and support a unique

CO121-25 Comment noted.

CO121-25 (cont'd)

community of species." Researcher Timothy Nifong counted 65 "special status" plant species in these bays.[115]

The importance of isolated wetlands is ignored by the DEIS. Many of these isolated wetlands are small, but the cumulative impact of disrupting or destroying so many at the same time needs to be assessed. In addition to the larger forested wetlands, the ACP threatens small wetlands, like the southern Carolina Bays, headwater and isolated wetlands. These wetlands harbor at least 80 species of rare or endangered plants. Statewide, about 70 percent of the rare and endangered plants and animals depend on wetlands.

Similarly. the DEIS lists some of the natural areas, unique aquatic and terrestrial communities that are listed as of state and global biological diversity significance, including some that are seriously imperiled. The DEIS even acknowledges there would be some permanent impacts, yet concludes that the impacts are not significant. A credible and comprehensive assessment of these areas must be included to fulfill the requirements of NEPA.

The DEIS fails to acknowledge the critical importance of NC coastal wetlands and their key ecological and economic role to North Carolina. Because of the large size of some eastern North Carolina wetlands and their proximity to coastal waters, these wetlands are important regulators of freshwater, nutrient, and sediment inputs to North Carolina estuaries. Almost one-half of North Carolina's wetlands are bottom-land hardwood forests, which are valuable habitats for waterfowl breeding and

[115] University of North Carolina, Department of Biology. See summary of Dr. Nifong's findings in https://ncseagrant.ncsu.edu/coastwatch/previous-issues/2015-2/autumn-2015/carolina-bays-another-mans-treasure/

CO121-25 (cont'd) overwintering and for anadromous fish spawning. Approximately 90 percent of the State's commercial fish harvest is derived from estuary-dependent species. In 2014, sales impacts for the North Carolina fisheries commercial fishing industry, which includes nearly 20,000 jobs, totaled $1.5 billion with an additional $1 billion in value-added impacts. The potential to permanently impact these wetlands given their value to the Albemarle-Pamlico Estuary and its significance to commercial and recreational fisheries is too high a risk both environmentally and economically.

The DEIS defines temporary impacts in a way that makes the entire corridor a "temporary" impact; "[a]reas where no permanent structures, aboveground facilities, or roads would occur are considered temporary impacts." The impacts of corridor construction, and operation, will have a long-term and lasting impact on surface water, wetland impacts, and key unique ecosystems. The DEIS section on general impacts and mitigation of these impacts becomes completely inadequate, allowing Dominion to merely restore topography and plant seeds to restore the vegetation. At the same time, there are no detailed plans on how this would be accomplished, what the final result is likely to be, and what the long-term water quality impacts will be.

CO121-26 IV. The DEIS fails to adequately assess greenhouse gas emissions and climate change impacts.

The DEIS does not adequately evaluate the potential impacts of, alternatives to, and mitigation measures for the proposed project on greenhouse gas (GHG) emissions, public health, and the impacts of climate change.[116] As discussed in detail below, the

[116] www.psr.org/assets/pdfs/too-dirty-too-dangerous.pdf

CO121-26 Section 4.13.3.12 includes our analysis of climate change. We utilized data and methodologies as established by the EPA, which is tasked with, among other things, setting regulations for GHG. Air quality permits required for ACP must comply with these calculation methods and standards, and Atlantic has done so.

CO121-26 (cont'd)

DEIS must be revised to properly evaluate the lifecycle GHG emissions of the ACP project, including:

a. Using the most recent values for methane's global warming potential (GWP);

b. Disclosing methodologies used to calculate GHG emissions;

c. Quantifying projected upstream and downstream direct and indirect GHG emissions where possible and conducting a strong qualitative assessment if quantitative analysis may not be warranted;

d. Fully analyzing all of the direct, indirect, and cumulative GHG emissions resulting from the ACP project and using this analysis to compare alternatives and develop mitigation measures to address such emissions; and

e. Assessing the impacts of the quantified direct, indirect, and cumulative GHG emissions resulting from the full lifecycle of the ACP project.

A. FERC utilizes an outdated methane global warming potential in the ACP DEIS.

The ACP DEIS uses an outdated global warming potential (GWP) value for methane. The authors state that "the 100-year GWP of...CH_4 is 25."[117] This is the 100-year methane GWP from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4),[118] but the IPCC has since released a newer version, the Fifth Assessment Report (AR5).[119] Methane GWPs were updated in AR5, as shown in the table below.[120]

[117] DEIS p. 4-390.

[118] Intergovernmental Panel on Climate Change (hereafter referred to as IPCC), Climate Change 2007: The Physical Science Basis: https://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html

[119] IPCC, Climate Change 2013: The Physical Science Basis: http://www.ipcc.ch/report/ar5/wg1/

[120] IPCC Fifth Assessment Report, Figure VI.A: Table 8.7.

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CO121-26 (cont'd)

Table 8.7 | GWP and GTP with and without inclusion of climate–carbon feedbacks (cc fb) in response to emissions of the indicated non-CO_2 gases (climate-carbon feedbacks in response to the reference gas CO_2 are always included).

	Lifetime (years)		GWP_{20}	GWP_{100}	GTP_{20}	GTP_{100}
CH_4[b]	12.4[a]	No cc fb	84	28	67	4
		With cc fb	86	34	70	11
HFC-134a	13.4	No cc fb	3710	1300	3050	201
		With cc fb	3790	1550	3170	530
CFC-11	45.0	No cc fb	6900	4660	6890	2340
		With cc fb	7020	5350	7080	3490
N_2O	121.0[a]	No cc fb	264	265	277	234
		With cc fb	268	298	284	297
CF_4	50,000.0	No cc fb	4880	6630	5270	8040
		With cc fb	4950	7350	5400	9560

Notes:
Uncertainties related to the climate–carbon feedback are large, comparable in magnitude to the strength of the feedback for a single gas.
[a] Perturbation lifetime is used in the calculation of metrics.
[b] These values do not include CO_2 from methane oxidation. Values for fossil methane are higher by 1 and 2 for the 20 and 100 year metrics, respectively (Table 8.A.1).

Using the most up-to-date-science, the correct 100-year GWP for methane with carbon climate feedback is 36.[121] Due to its short lifetime in the atmosphere – 12.4 years – the GWP of methane should be calculated using the 20-year timeframe, which makes it 86 times as potent as carbon dioxide. Thus, relative to carbon dioxide, methane has much greater climate impacts in the near term than in the long term. A short-term measure of climate impacts is most effective when considering policies that can avoid significant warming within the time horizon of the United States' international commitment to reduce GHG emissions or, independently, the time horizon within which swift action must be taken to avoid catastrophic impacts of climate change.

[121] As shown in the table, the 100-year GWP for methane with carbon climate feedback is 34, and as stated in footnote b of the table, the value is higher by 2 for fossil methane due to CO_2 from methane oxidation.

CO121-26 (cont'd)

B. FERC fails to adequately assess the emissions and impacts resulting from the ACP.

As acknowledged in the DEIS, on August 1, 2016, the White House Council on Environmental Quality (CEQ) issued its "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," ("CEQ final guidance") which outlines the analyses and documentation of GHG emissions and climate change impacts that agencies should include to facilitate compliance with existing NEPA requirements.[122] FERC states in the ACP DEIS that "[a]s recommended in this new guidance, to the extent practicable, the FERC staff has presented the direct and indirect GHG emissions associated with construction and operation of the projects and the potential impacts of GHG emissions in relation to climate change."[123] However, FERC's GHG analysis in the DEIS falls short of the requirements of NEPA as explained in the CEQ final guidance. FERC summarily concludes in the DEIS that "[c]urrently, there is no standard methodology to determine how the proposed projects' relatively small incremental contribution to GHGs would translate into physical effects of the global environment. The GHG emissions from the construction and operation of the ACP and the EEP would be negligible compared to the global GHG emission inventory."

As discussed above, FERC has promulgated guidance on the preparation of environmental documents. The most recent is the 2017 guidance document and it begins to add issues relating to climate change into the environmental analysis of a

[122] The White House Council on Environmental Quality, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*: www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance_.pdf

[123] DEIS p. 4-516.

CO121-26 (cont'd)

project. From the scarcity of relevant information in the present DEIS, it is clear its preparers of it were not following either the 2017 guidance document or the CEQ directive.

The CEQ final guidance, which addresses compliance with existing NEPA obligation, explicitly states that this purported reasoning – that a particular project has a small contribution to emissions relative to global emissions – is not an appropriate excuse to avoid fully assessing the GHG impacts of a project, as follows:

> Climate change results from the incremental addition of GHG emissions from millions of individual sources, which collectively have a large impact on a global scale. CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact.[124]

The CEQ final guidance also lists various appropriate methodologies for analyzing the greenhouse gas emissions of a project, stating that "[q]uantification tools are widely available, and are already in broad use in the Federal and private sectors, by state and local governments, and globally." In fact, CEQ provides a compilation of GHG accounting tools, methodologies, and reports.[125]

[124] CEQ final guidance at 10-12.

[125] Executive Office of the President Greenhouse Gas Accounting Tools: https://ceq.doe.gov/current_developments/GHG-accountingtools.html.

CO121-26 (cont'd)

Additionally, even if "no standard methodology" is available, as FERC claims, the CEQ final guidance states that this is not a valid excuse for failing to assess impacts and that, at a minimum, a qualitative analysis must be performed. It states as follows:

> "When an agency determines that quantifying GHG emissions would not be warranted because tools, methodologies, or data inputs are not reasonably available, the agency should provide a qualitative analysis and its rationale for determining that the quantitative analysis is not warranted."[126]

The CEQ final guidance also states that agencies should quantify a proposed agency action's projected direct and indirect GHG emissions. The final guidance explains how the scope of the proposed action should be considered:

> "In order to assess effects, agencies should take account of the proposed action – including "connected" actions – subject to reasonable limits based on feasibility and practicality. (Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously, or; (iii) Are interdependent parts of a larger action and depend on the larger action for their justification). Activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate for a proposed agency action or as a consequence of a proposed agency action, should be accounted for in the NEPA analysis."

In the ACP DEIS, FERC fails to follow the requirements of NEPA as explained in the directives of the CEQ final guidance and its own 2017 guidance document. FERC states that "induced or additional natural gas production is not a 'reasonably foreseeable' indirect effect resulting from the proposed ACP and the EEP, and this topic need not be addressed in this EIS," and that "the environmental effects resulting from natural gas production are not linked to or caused by a proposed pipeline project."[127]

[126] CEQ final guidance at 13.

[127] DEIS pp. 1-22 – 1-23.

CO121-26 (cont'd)

This reasoning directly contradicts the requirements of NEPA, given that, as explained in great detail in Section IX of these comments, producing, processing, and distributing natural gas are clearly actions that "occur as a predicate for a proposed agency action or as a consequence of a proposed agency action," and therefore must be accounted for in the NEPA analysis. In fact, the CEQ final guidance provides an example of the types of impacts that should be considered specifically for resource extraction projects:

> "For example, NEPA reviews for proposed resource extraction and development projects typically include the reasonably foreseeable effects of various phases in the process, such as clearing land for the project, building access roads, extraction, transport, refining, processing, using the resource, disassembly, disposal, and reclamation."[128]

In the DEIS, FERC only includes estimates of GHG emissions from (1) pipeline construction, (2) compressor stations, and (3) "Total annual emissions." FERC fails to provide reasoning or methodology for its GHG emissions estimates for the ACP pipeline construction, compressor stations, and total annual emissions, making it impossible for the public to independently evaluate the adequacy of these calculations. The direct emissions sources that FERC should have considered in the ACP DEIS include but are not limited to CH_4 and CO_2 emissions from:

a. Pipeline leaks;
b. Meter and Regulation (M&R) Stations;
c. Dehydrator vents;
d. Pneumatic devices; and
e. Malfunctions and upsets, e.g. blowdowns/venting.

[128] CEQ final guidance at 14.

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CO121-26 (cont'd)

Indirect emissions sources that should have included in the ACP DEIS – such as from the wells supplying the gas to equipment and processes used to prepare the gas for transport and deliver it to customers – include but are not limited to carbon dioxide and methane emissions from:

a. Drilling;

b. Completion, including hydraulic fracturing;

c. Wells;

d. Wellsite equipment, e.g. heaters, separators, dehydrators, etc.;

e. Gathering and boosting stations;

f. Pipeline leaks;

g. Pneumatic devices;

h. Tanks;

i. Malfunctions and upsets;

j. Processing plants; and

k. Distribution pipeline and M&R station leaks.

As justification for not including these upstream and downstream activities that can cause indirect impacts, FERC states in the DEIS that

> [w]hile we know generally that natural gas is produced in the Appalachian Basin, there is no reasonable way to determine the exact wells providing gas transported in the ACP pipelines, nor is there a reasonable way to identify the well-specific exploration and production methods used to obtain those gas supplies.[129]

[129] DEIS p. 1-22.

CO121-26 (cont'd)

However, it is not necessary to know the exact locations of all of the wells that will supply gas to the pipelines, or the methods used to obtain that gas, in order to analyze the potential impacts. FERC supplies the total capacity of the pipelines in the ACP DEIS. The region from which gas will be supplied can be estimated based on the location of the pipeline. Average production rates and production methods from wells in that potential supply region can be obtained from state databases,[130] and can then be used to estimate the number of wells and the type of equipment and production methods necessary to supply the full pipeline capacity. Information can also be requested from producers and marketers who have contracts to supply gas or have expressed interest in supplying gas to the pipeline.[131]

FERC acknowledges in the DEIS that such producers should already be known.[132] In his statement, former chairman Bay states that he believes FERC should perform a life-cycle greenhouse gas emissions study, and notes that DOE already does this type of analysis when issuing permits for Liquefied Natural Gas ("LNG") terminals. Bay says "[t]his information may be of use to the Commission, the public, and industry in examining the broader issues raised in certification proceedings." The results of this analysis can and should have been used to analyze the potential GHG impacts and to

[130] The Pennsylvania Department of Environmental Protection, Oil and Gas Reporting: www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/Welcome.aspx

[131] As explained in Section I, significant information is available concerning the specific locations of the gas holdings of the drilling companies and their affiliates who have contracted to ship gas on the MVP.

[132] DEIS p. 1-22. In its discussion of considering impacts from additional drilling, FERC suggests that gas supplies will already be identified before pipeline development begins, stating, "…once production begins in an area, shippers or end users will support the development of a pipeline to move the natural gas to markets."

CO121-26 (cont'd) develop alternatives and mitigation strategies to offset the emissions resulting from the ACP.

C. Information on compressor, meter and regulating, and valve control stations is incomplete.

CO121-27 Compressor stations, metering and regulating (M&R) stations and valve control stations are part of the ACP.[133] Compressor stations generally run 24 hours per day, 365 days a year, and are not very efficient, with the majority of fuel burned producing only pollution and heat. Problems include:

a. High amounts of pollution are emitted, including sulfur dioxide, carbon monoxide, hazardous air pollutants, greenhouse gases, and particulates, including high amounts of formaldehyde;

b. In cold weather, compressor stations can emit up to 13 times more pollution;[134]

c. Excessive noise and stress for persons living nearby, since they run 24/7;

d. Lack of pollution control devices;[135] and

e. Serious environmental justice issues, since they are often located in lower income areas and communities of color.

The ACP states that there will be only one new compressor station in North Carolina, located in Northampton County. The Northampton compressor station is expected to

[133] Compressor stations boost the pressure inside the natural gas pipeline to move the gas further downstream, and since pipeline pressure decreases with distance, compressor stations are required to push the gas to the next location where it will be taken out of the pipeline. M&R stations contain equipment to measure the amount of gas entering or leaving a pipeline system and, sometimes, regulate gas pressure. Valve control stations include mechanical devices (valves) that are installed in a pipeline, and used to control the flow of gas or liquid. See http://www.pipelineawareness.org/residents-businesses/glossary/

[134] http://www.bredl.org/pdf5/161207_air_pollution_report-FINAL.pdf

[135] http://www.bredl.org/pdf5/Factsheet_compressor_stations.pdf

CO121-27 FERC staff reviews applications for interstate natural gas pipeline projects in accordance with an applicant's stated objective(s) in order to disclose the environmental impacts of a proposal to inform the decisionmakers and, in accordance with NEPA, evaluate reasonable alternatives to a project. However, the FERC as a matter of policy and in accordance with the NGA and other governing regulations, does not direct the development of the gas industry's infrastructure regionally or on a project-by-project basis. As discussed in section 2.7, any future expanded facilities or increase in capacity would need additional FERC authorization (which would also require additional environmental review).

CO121-27 (cont'd)

push gas over 180 miles through the ACP in North Carolina, which seems unlikely. The DOE reports that a compressor station is needed every 50 to 100 miles along a pipeline. It's possible that the ACP will add at least one and perhaps as many as four additional compressor stations to move the gas nearly 180 miles through the pipeline. In fact, DOE reports that the existing Transco pipeline that runs through NC for approximately the same number of miles as the ACP has four compressor stations.[136]

CO121-28

D. Compressor stations release excessive emissions, resulting in excessive environmental impacts.

Compressor stations are also a large source of toxic emissions. According to studies by ICF International, compressor stations constitute the "primary source of vented emissions" in the transmission of natural gas.[137] People who live near compressor stations experience skin rashes, gastrointestinal, respiratory, neurological, and psychological problems. Air samples show elevated levels of many toxics, including volatile organic compounds, particulates and gaseous radon. Areas surrounding compressor stations are known in the gas industry as "sacrifice zones" – for good reason. For example, in October 2014, a notice of violation and proposed civil penalty was issued against Spectra Energy for excessive emissions from a compressor station.

As more gas is fracked and piped across the U.S., more people are being exposed to the air pollution and noise from compressor stations. Under the Natural Gas Act, compressor stations are under the radar of environmental laws, and communities

[136] https://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngcompressor/ngcompressor.pdf

[137] www.edf.org/sites/default/files/content/canada_methane_cost_curve_report.pdf, p. 2-4.

CO121-28 The commentor refers to preliminary (and outdated) and incomplete information filed by the Atlantic during pre-filing. The issues raised in this comment are addressed in EIS section 4.11.1. Emissions of criteria pollutants, HAPs, and GHG/methane emissions are provided throughout section 4.11.1, and open burning emissions are provided in table 4.11.1-5.

CO121-28 (cont'd)

are putting up with increasing levels of noise and pollution.[138] The ACP's Resource Report 9 on Air and Noise Quality states:

> This Resource Report addresses the effects of the ACP and SHP (Projects) on the existing air and noise environment and describes proposed measures to mitigate the effects. This Report also presents the long-term impacts of operation of the additional compressor units.

However, Report 9 does not actually address the "long-term impacts of operation of the additional compressor units" at all. Report 9 does not mention significant additional air pollution from hazardous air pollutants, including benzene and formaldehyde. Because the compressor stations are located in 'attainment' areas as defined by the Clean Air Act, the DEIS states that further review is not required.[139] We do not agree.

Table 9.1.4-4 of the DEIS Resource Report 9 lists Clean Air Act criteria pollutants (NOx, CO, Volatile Organic Compounds, SO2, Particulate Matter, and COe or Carbon Dioxide Equivalent) for the compressor station engines. While Report 9 says that "additional emissions are expected," and fugitive emissions from methane leaks and ancillary sources such as generators and heaters are not included, these additional emissions "will be incorporated" in future filings. Emissions from construction of compressor stations for all criteria pollutants are listed as "TBD" – To Be Determined, as are emissions from burning biomass from the forested areas to be cleared for the ACP and compressor stations. While the DEIS claims that these additional emissions will not trigger violations of air quality standards required by the Clean Air Act, with so little hard data about additional air pollution provided, it is impossible for FERC or the public to tell.

[138] https://sites.google.com/site/metropolitanenvironmental/the-lowdown-on-gas-compressor-blowdown-the-dirty-truth-of-unreportable-emissions

[139] ACP Resource Report 9, Section 9.1.3.2.

E. The DEIS provides little information on "upgrades" to existing compressor stations.

CO121-29 The ACP Resource Report I, General Description, refers to an upgrade of Piedmont's Clayton Compressor Station in North Carolina, but gives very little information about exactly what will be done to "upgrade" the compressor station. Page 1-70 of Resource Report 1, General Description, appears to allow the ACP to "utilize capacity in the Piedmont pipeline as if it were [ACP's] own capacity," yet this compressor station is somehow not included in the purview of this DEIS. Smithfield, Fayetteville, and Junction A are also listed as undergoing "modifications and additions," but there is no further information given.

CO121-30 Similarly, there is very little information given on the North Carolina M&R stations, 'pig' launchers, or valve stations. M&R stations are listed for Smithfield, Fayetteville and Pembroke, but no details are provided. Page 5-44 states:

> Prior to the close of the draft EIS comment period, Atlantic shall provide an acoustical analysis for the Long Run, Smithfield, Fayetteville, Pembroke, Elizabeth River, Brunswick, and Greensville M&R stations identifying the distance and direction of the nearest NSA [Noise Sensitive Area] within 0.5 mile to each station; the existing ambient Ldn levels at each of the NSAs; the estimated noise levels attributable for maximum flow at the M&R stations; and any proposed mitigation to ensure that noise impacts from the M&R stations do not exceed an Ldn of 55 dBA at any of the nearby NSAs. (Section 4.11.2.2)

When notification is given so late in the process, it is useless, and a potential violation of the due process rights of those directly affected by the pipeline, compressor stations, M&R stations, valve stations, and eight sets of pipeline 'pig' launchers.

CO121-31 F. FERC's proposed mitigation to offset GHG emissions is inadequate.

The mitigation proposed for the limited greenhouse gas ("GHG") emissions sources that FERC analyzed in the DEIS (construction, operation of compressors, and

CO121-29 Section 2.8 includes a discussion of non-jurisdictional facilities associated with ACP and SHP.

CO121-30 See the response to comment CO6-1.

CO121-31 Construction emissions are provided in table 4.11.1-5. Atlantic and DETI could implement measures included in the EPA's Natural Gas Star Program, but we note that that program is voluntary. There are currently no federal or state-level emissions limitations for construction-related GHG emissions applicable to ACP and SHP. Further, reducing lifecycle GHG emissions associated with ACP and SHP is outside the scope of this EIS. Section 4.13.3.12 provides the Commission's position on lifecycle analyses. The Commission cannot enforce requirements on upstream producers nor end-users, both of which are outside the Commission's jurisdiction.

CO121-31 (cont'd) "total yearly emissions") is insufficient. Aside from a statement that "[a]dhering to good operating and maintenance practices would help minimize fugitive GHG and VOC leaks," and providing a list of "feasible mitigation measures, based on review of EPA's voluntary Natural Gas Star program for potential emission reduction measures," the DEIS does not contain any detailed or specific mitigation plans to reduce the lifecycle GHG emissions from the ACP project.

A full suite of mitigation measures should have been fully analyzed to determine the ultimate impact of the project. FERC must therefore revise the DEIS to include specific actions that will be taken to reduce or prevent GHG emissions and develop detailed plans for carrying out those actions, including proposed timelines, and the ultimate impacts. As stated above, the DEIS must also consider a much broader range of direct, indirect, and cumulative impacts resulting from the ACP project to fully comply with NEPA, and it must use this information to develop alternatives and implement mitigation strategies for those impacts.

CO121-32 G. FERC failed to fully evaluate lifecycle GHG emissions.

More broadly, FERC must analyze the possibility that additional natural gas infrastructure will lock-in fossil fuel use for decades to come and discourage or prevent the construction of carbon-free energy sources, which has significant implications for the climate. Because the construction and operation of new interstate natural gas infrastructure approved by FERC ultimately contributes to, or facilitates, increased GHG emissions into the atmosphere, FERC must fully evaluate these impacts, compare

CO121-32 Section 4.13.3.12 provides the Commission's position on lifecycle analyses. See the response to comment CO29-1 regarding the Oil Change International report.

CO121-32 (cont'd) alternatives, and develop mitigation measures to address such emissions.[140] FERC's duty to analyze the lifecycle GHG emissions and the climate change implications of such emissions is required by NEPA, and is supported by recent case law interpreting NEPA in the context of climate change, CEQ's recently issued final guidance, and FERC's own 2017 guidance document.[141]

A recent report by Oil Change International exhaustively analyzed the potential climate impacts from the ACP, including methane emissions in GHG estimates. The study reports that annual emissions from the ACP will be 68 million metric tons of CO2e annually, equal to the annual emissions from 20 coal plants.[142]

CO121-33 H. FERC Failed to meaningfully evaluate the impacts of GHG emissions.

Another major flaw in FERC's climate change analysis is FERC's comparison of the total annual GHG emissions of the ACP Project to "the global GHG emission inventory."[143] This comparison serves only to minimize the ACP Project's GHG emissions and does not provide any meaningful information. EPA recently criticized FERC for comparing the estimated emissions of another major interstate gas pipeline,

[140] Katherine Lee, *CEQ's Draft Guidance on NEPA Climate Analyses: Potential Impacts on Climate Litigation*, 45 Envtl. L. Rep. News & Analysis 10925 (2015).

[141] See generally CEQ final guidance; see, e.g., *High Country Conservation Advocates v. United States Forest Service*, 52 F.Supp.3d 1174 (D.Colo. 2014); *Ctr. for Biological Diversity v. Nat'l Hwy. Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008) (cumulative impacts analysis inadequate where agency failed to "discuss the *actual* environmental effects resulting from [greenhouse gas] emissions" (emphasis in original)).

[142] http://priceofoil.org/2017/02/15/atlantic-coast-pipeline-greenhouse-gas-emissions-briefing/

[143] DEIS p. 4-516.

CO121-33 The EIS notes that this comparison is for a frame of reference and is not an indicator of significance.

CO121-33 (cont'd)

the Leach Xpress Project, "to state GHG emission levels."[144] EPA explained that "[c]omparing one project's direct and indirect emissions to aggregated totals is not an appropriate way to consider the impact of emissions" and is inconsistent with the CEQ GHG Guidance's explanation of existing NEPA requirements. In order to assess those impacts, FERC should have utilized available tools such as the "social cost of carbon," developed by EPA and other federal agencies.[145] Because FERC failed to analyze the impacts of the GHG emissions associated with the proposed projects, the DEIS does not satisfy NEPA.

CO121-34

VI. The DEIS fails to adequately consider all reasonable direct and indirect impacts and cumulative impacts, including those impacts associated with gas development.

A. There is a clear causal connection between the proposed ACP and shale gas development.

In analyzing the potential impacts of its approval of the ACP, FERC must consider the indirect effects of shale gas development. Indirect effects are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. … Indirect effects are defined broadly, to 'include growth inducing effects and other effects related to induced changes in the pattern of land use, population

[144] EPA Comments on the Leach Xpress Pipeline DEIS p. 7, June 6, 2016, Docket No. CP15514-000, Accession No. 20160613-5177.

[145] EPA, *The Social Cost of Carbon*, https://www.epa.gov/climatechange/social-cost-carbon.

[297] 40 C.F.R. § 1508.8(b).

CO121-34 While we appreciate the Oil Change International study, assumptions used in that study are not in line with those established by federal agencies, and assumptions were made that may not reflect operational scenarios for ACP. The study also erroneously implies that FERC assumes that the project would not impact natural gas consumption, ignoring the fact that the EIS discloses GHG emissions from downstream use (combustion) as an indirect impact of the project. Consideration of the Oil Change International study does not change the conclusions in the EIS.

See the response to comments CO55-2 and CO121-6.

CO121-34 (cont'd)

density or growth rate, and related effects on air and water and other natural systems, including ecosystems.'"[146]

For several years, however, FERC has categorically refused to consider induced gas development as an indirect effect of pipeline projects such as the ACP. FERC's argument is usually two-fold. First, FERC claims that gas drilling and pipeline projects are not "sufficiently causally related" to warrant a detailed analysis.[147] Second, FERC claims that even if gas drilling and pipeline projects are sufficiently causally related, the potential environmental impacts of the gas development are not "reasonably foreseeable" as contemplated by CEQ's NEPA regulations. The DEIS continues this head-in-the-sand approach, failing to consider the indirect effects of shale gas development. FERC claims that "it is not likely that [ACP] would lead to additional drilling and production" of natural gas. "In fact," FERC continues, "the opposite causal relationship is more likely, i.e., once production begins in an area, shippers or end users will support the development of a pipeline to move the natural gas to markets."

FERC's certificate approvals could plausibly induce new natural gas production since new pipelines will be made available to transport fracked gas. Therefore, it seems reasonable for FERC to conduct NEPA analyses of the upstream development that would likely occur due to its certificate approvals. Arguments have been made that current levels of natural gas production are adequate to supply any new natural gas infrastructure.[148]

[146] *Natural Res. Def. Council v. U.S. Army Corps of Eng'rs*, 339 F. Supp. 2d 386, 404 (S.D.N.Y. 2005) (quoting 40 C.F.R. § 1508.8(b)).

[147] *Nat'l Fuel Gas Supply Corp.*, 150 FERC ¶ 61,162, at P 44 (2015).

[148] Opening Brief of Petitioners Catskill Mountainkeeper, Inc., et al. at 22-23, *Catskill Mountainkeeper, Inc., et al. v. FERC*, No. 16-345-L (2d Cir. July 12, 2016).

CO121-34 (cont'd)

However, it is unlikely that current production would be sufficient to supply natural gas for the life of a pipeline, which could be up to fifty years,[149] meaning that new production could be induced to continually supply a pipeline throughout its lifespan.[150] Therefore, the indirect effects of FERC's certificate approvals, including induced production, must be included in its NEPA analysis of the ACP project.

Courts have said that an agency must consider something as an indirect effect if the agency action and the effect are "two links of a single chain."[151] It cannot be disputed that gas development and infrastructure that transports that gas are "two links of a single chain." The gas industry certainly considers them to be so; for example, in a 2014 report, the Interstate Natural Gas Association of America (INGAA) stated that:

> midstream infrastructure development is crucial for efficient delivery of growing supplies to markets. Sufficient infrastructure goes hand in hand with well-functioning markets. *Insufficient infrastructure can constrain market growth* and strand supplies. . . . New infrastructure will be required to move hydrocarbons from regions where production is expected to grow to locations where the hydrocarbons are used. Not all areas will require significant new pipeline infrastructure, but many areas (even those that have a large amount of existing pipeline capacity) may require investment in new capacity to connect new supplies to markets. In analogous cases to date, oil and gas producers and marketers have been the principal shippers on new pipelines. These "anchor shippers" have been willing to commit to long-term contracts for transportation services that provide the financial basis for pipeline companies to pursue projects. Going forward, producers will likely continue to be motivated to ensure that the capacity exists to move supplies via pipelines. *Producers have learned from past experience that the consequences of insufficient infrastructure for gas transport are severe, and that the cost of pipeline transport is a relatively small cost compared with the revenues lost as a result of price reductions or well shut-ins that occur when transport from producing areas to liquid pricing points is constrained.*[152]

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[149] http://www.ingaa.org/file.aspx?id=10751

[150] http://www.newsweek.com/2014/07/18/how-long-will-americas-shale-gas-boom-last-html

[151] *Sylvester v. U.S. Army Corps of Eng'rs*, 884 F.2d 394, 400 (9th Cir. 1989).

[152] http://www.ingaa.org/file.aspx?id=21498, pp. 1, 8-9. (emphasis added)

CO121-34 (cont'd)

In other words, according to INGAA, gas producers rely on there being sufficient infrastructure capacity to continue, if not expand, production activities. If new infrastructure is not built, prices drop, new production slows, well shut-ins occur, and the attendant environmental and social impacts of drilling are reduced or eliminated.

As stated above, FERC attempts to avoid its duty to consider induced gas drilling by claiming that "it is not likely that [ACP] would lead to additional gas drilling" because, according to FERC, "the opposite causal relationship is more likely."[153] According to the Energy Information Administration ("EIA"), however, pipeline projects do facilitate an increase in gas production. In a recent report on natural gas liquids (NGL) market trends, EIA stated that "[e]thane production is increasing as midstream infrastructure projects become operational and ethane recovery and transport capacities grow."[154] In other words, an increase in infrastructure to transport a product results in an increase in production of that product.

As the West Virginia Oil and Gas Association stated in its motion to intervene in the Certificate Application proceeding for the ACP, the construction of a pipeline from the Appalachian Basin to the Southeast and Mid-Atlantic markets would lead to an "increase in production" and shale gas producers would "greatly benefit from these new end-use consumption markets created by the . . . pipeline."[155] Without the pipeline to move the gas from the production areas, the drilling would simply not be economical

[153] DEIS p. 1-22.

[154] http://www.eia.gov/analysis/hgl/pdf/hgl.pdf, p. 6.

[155] Motion to Intervene of the West Virginia Oil and Gas Association at 2, October 22, 2105, Docket No. CP15-554.

CO121-34 (cont'd)

and would not occur. To say in one proceeding that shale gas development will continue regardless of whether that particular project is approved because there are other similar projects that will likely be authorized by FERC itself only proves the causal connection between FERC's decision to approve pipeline projects and shale gas development.

B. The impacts of shale gas development are reasonably foreseeable.

Shale gas development is not only causally related to construction of the ACP, but is also reasonably foreseeable. An indirect effect is "reasonably foreseeable" if it is "sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision."[156] "[W]hen the *nature* of the effect is reasonably foreseeable but its *extent* is not, [an] agency may not simply ignore the effect."[157] "Agencies need not have perfect foresight when considering indirect effects, effects which by definition are later in time or farther removed in distance than direct ones."[158] Here, additional shale gas drilling is sufficiently likely to occur that a person of ordinary prudence would take it into account when assessing the impact of the project on the environment. Moreover, FERC is well aware of the nature of the effects of shale gas development and, therefore, may not ignore those effects.

FERC, however, has consistently claimed that, even if there is a sufficient causal relationship between projects such as the one under review here and induced gas

[156] *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992).

[157] *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003) (emphasis in original); see also *Habitat Educ. Ctr. v. U.S. Forest Serv.*, 609 F.3d 897, 902 (7th Cir. 2010).

[158] *WildEarth Guardians v. U.S. Office of Surface Mining*, 104 F. Supp. 3d 1208, 1230 (D. Colo. 2015).

CO121-34 (cont'd)

production, "such production is not reasonably foreseeable as contemplated by CEQ's regulations and case law."[159] There, FERC said that it "need not address remote and highly speculative consequences."[160] FERC also said that it is not required "to engage in speculative analysis" or "to do the impractical, if not enough information is available to permit meaningful consideration."[161] Finally, FERC said that even if it knew the "identity of a supplier of gas . . . and even the general area where the producer's existing wells are located," it does not mean that FERC can engage in forecasting future development. The DEIS for the ACP adopts this flawed interpretation of "reasonably foreseeable."

FERC's claim that if it does not know the exact timing and location of future shale gas development, it may "simply ignore the effect" cannot be squared with the requirements of NEPA.[162] FERC's practice "would require the public, rather than the agency, to ascertain the cumulative effects of a proposed action."[163] "Such a requirement would thwart one of the 'twin aims' of NEPA – to 'ensure that the agency will inform the public that it has indeed considered environmental concerns in its decision making process.'"[164] Compliance with NEPA "is a primary duty of every federal agency; fulfillment of this vital responsibility should not depend on the vigilance and

[159] *Nat'l Fuel Gas Supply Corp.*, 150 FERC ¶ 61,162, at P 46 (2015).

[160] *Id.* (citing *Hammond v. Norton*, 370 F. Supp. 2d 226, 245-46 (D.D.C. 2005).

[161] *Id.* (citing *N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1078 (9th Cir. 2011)).

[162] *Mid States Coal.*, 345 F.3d at 549.

[163] *Te-Moak Tribe of Western Shoshone of Nevada v. U.S. Dep't of the Interior*, 608 F.3d 592, 605 (9th Cir. 2010). While this case was about cumulative impacts, the same rationale holds true for indirect effects in terms of effects being "reasonably foreseeable."

[164] *Id.* (quoting *Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97, 103 S.Ct. 2246, 76 L.Ed.2d 437 (1983)). (emphasis added by Ninth Circuit)

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limited resources of environmental plaintiffs."[165] Thus, FERC's insistence that it is incumbent upon others to produce the kind of information it claims to need is wholly inconsistent with its obligations under NEPA.

As the D.C. Circuit has explained, "[r]easonable forecasting and speculation is … implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry.'"[166] Here, FERC has attempted to shirk its responsibilities by characterizing the future environmental effects of induced shale gas drilling as "crystal ball inquiry" despite abundant available information regarding the impacts of the gas drilling that would be facilitated by construction of the ACP, thus violating NEPA.[167]

Contrary to FERC's assertions, there is ample information about existing and projected shale gas development for FERC to engage in reasonable forecasting. According to a report by the research investment firm Morningstar, several companies, including EQT, have "identified between 10 and 30 years of drilling locations across the Marcellus, which should fuel several more years of production growth at relatively low cost."[168] EQT's Analyst Presentation identifies its core development areas in which it is

[165] *City of Carmel-by-the-Sea* v. *U.S. Dep't of Transp.*, 123 F.3d 1142, 1161 (9th Cir. 1997) (quoting *City of Davis* v. *Coleman*, 521 F.2d 661, 671 (9th Cir. 1975); see also *Ctr. for Biological Diversity* v. *U.S. Forest Serv.*, 349 F.3d 1157, 1166 (9th Cir. 2003) ("The procedures prescribed both in NEPA and the implementing regulations are to be strictly interpreted 'to the fullest extent possible' in accord with the policies embodied in the Act.…'[g]rudging, pro forma compliance will not do.'") (citations omitted)).

[166] *Delaware Riverkeeper Network* v. *F.E.R.C.*, 753 F.3d 1304, 1310 (quoting *Scientists' Inst. For Pub. Info., Inc.* v. *Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)); see also *N. Plains Res. Council* v. *Surface Transp. Bd.*, 668 F.3d 1067, 1078-79 (9th Cir. 2011).

[167] *Delaware Riverkeeper*, 753 F.3d at 1310

[168] http://marcelluscoalition.org/wpcontent/uploads/2014/03/Morning-Star_EnergyObserverFebruary2014.pdf, p. 17 (emphasis added)

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"strategically focused."[169] Thus, FERC should be able to work with EQT in identifying reasonably foreseeable gas wells within this area.

Reasonable forecasting of the impacts of the type of future drilling that would be necessary to supply the ACP is being performed in other federal regulatory contexts. For example, on November 25, 2016, the U.S. Fish & Wildlife Service (FWS) announced its intent to prepare an EIS for the proposed issuance of a 50-year incidental take permit under the Endangered Species Act (ESA) for the draft "Oil & Gas Coalition Multi-State Oil and Gas Habitat Conservation Plan (O&G HCP).[170] The O&G HCP would "streamline environmental permitting and compliance with the ESA for nine companies in conjunction with their respective midstream and upstream" operations in Ohio, Pennsylvania, and West Virginia.[171] According to FWS, the covered activities would include upstream well development, production, decommissioning, and reclamation as well as construction of midstream gathering, transmission, and distribution pipelines.

C. The DEIS fails to adequately consider cumulative impacts, including those impacts associated with gas development.

In addition to considering the direct and indirect effects of the project, FERC must also consider cumulative impacts, especially in the Marcellus play in Pennsylvania and West Virginia.[172] A cumulative impact is:

[169] Analyst Presentation at 10, 12, 13, and 28.

[170] 81 Fed. Reg. 85, 250 (Nov. 25, 2016).

[171] *Id.* at 85,251.

[172] 40 C.F.R. § 1508.7.

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> "The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

Cumulative impact analyses that contain "cursory statements" and "conclusory terms" are insufficient.[173] FERC's cumulative impact analysis for the ACP is insufficient because it is needlessly and impermissibly restrictive both in terms of time and geography and relies on cursory statements and conclusory terms that seek to minimize impacts to an array of environmental resources. As noted above, FERC has not done an adequate job in assessing the direct and indirect impacts from the pipeline construction. Conclusory statements are not analysis of the impacts.

FERC's cumulative impacts analysis is fatally flawed because it substantially limited the analysis area to the vicinity of the ACP pipeline and associated facilities. FERC should have broadened the scope to consider cumulative impacts on water resources and wetlands. FERC also should have selected analysis areas for vegetation, land use, and wildlife that were rationally connected to those particular resource areas. Demographic data of the ACP route and alternative routes would have provided the necessary information to make conclusions on the cumulative and disproportionate impacts on sensitive populations.

[173] *Delaware Riverkeeper Network v. F.E.R.C.*, 753 F.3d 1304, 1319-20 (D.C. Cir. 2014); see also *Natural Resources Defense Council v. Hodel*, 865 F.2d 288, 298 (D.C. Cir. 1988) (although "FEIS contains sections headed 'Cumulative Impacts,' in truth, nothing in the FEIS provides the requisite analysis," which, at best, contained only "conclusory remarks").

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CEQ's guidance on cumulative impacts recommends significantly expanding the cumulative impacts analysis area beyond the "immediate area of the proposed action" that is often used for the "project-specific analysis" related to direct and indirect effects:

> For a project-specific analysis, it is often sufficient to analyze effects within the immediate area of the proposed action. When analyzing the contribution of this proposed action to cumulative effects, however, the geographic boundaries of the analysis *almost always should be expanded*. These expanded boundaries can be thought of as differences in hierarchy or scale. Project-specific analyses are usually conducted on the scale of counties, forest management units, or installation boundaries, *whereas cumulative effects analysis should be conducted on the scale of human communities, landscapes, watersheds, or airsheds*.[174]

(emphasis added). CEQ further says that it may be necessary to look at cumulative effects at the "ecosystem" level for vegetative resources and resident wildlife, the "total range of affected population units" for migratory wildlife, and an entire "state" or "region" for land use.

EPA guidance on cumulative impacts states that "[s]patial and temporal boundaries should not be overly restrictive in cumulative impact analysis."[175] EPA specifically cautions agencies to not "limit the scope of their analyses to those areas over which they have direct authority or to the boundary of the relevant management area or project area." Rather, agencies "should delineate appropriate geographic areas including natural ecological boundaries" such as ecoregions or watersheds.

The analysis required in the cumulative impact sections should include effects of shale gas development on vegetation and wildlife. FERC acknowledges that oil and gas

[174] CEQ, Considering Cumulative Effects under the National Environmental Policy Act, 1997, p. 12. (emphasis added)

[175] EPA, Consideration of Cumulative Impacts in EPA Review of NEPA Documents, 1999, p. 8.

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development contributes to cumulative impacts on vegetation and wildlife impacts.[176] With regard to vegetation, FERC concluded that cumulative impacts "are expected to be minor, considering the limited area affected within the geographic scope, the large amount of undisturbed vegetation, including forests, remaining in each watershed … and because the other projects are expected to take the required precautions and mitigation measures." The impacts from the fragmentation of habitat should be address over much wider areas.

FERC's dismissive conclusions ignore the landscape level effects that have occurred and are likely to continue to occur from rampant shale gas well and pipeline infrastructure development. As the Supreme Court of Pennsylvania explained,

> "By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children, and future generations, and potentially on the public purse, perhaps rivaling the environmental effects of coal extraction."[177]

It is critical that FERC consider the detrimental effects of shale gas well and pipeline infrastructure developments on a much broader level than it used in the DEIS. According to recent research published in Environmental Science & Technology:

> "Potential effects [of shale gas drilling] on terrestrial and aquatic ecosystems can result from many activities associated with the extraction process and the rate of development, such as road and pipeline construction, well pad development, well drilling and fracturing, water removal from surface and ground waters, establishment of compressor stations, and by unintended accidents such as spills or well casing failures. … The cumulative effect of these potential stressors will depend in large part on the rate of development in a region. Depending on extent

[176] DEIS pp. 4-504 – 4-507.

[177] *Robinson Twp. v. Commonwealth of Pennsylvania*, 83 A.3d 901, 976 (Pa. 2013).

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of development, oil and gas extraction has the potential to have a large effect on associated wildlife, habitat and aquatic life."[178]

Shale gas development "changes the landscape" as "[l]and is cleared for pad development and associated infrastructure, including pipelines, new and expanded roads, impoundments, and compressor stations." "Seismic testing, roads, and pipelines bisect habitats and create linear corridors that fragment the landscape." As noted above, "Compressor stations, which are located along pipelines and are used to compress gas to facilitate movement through the pipelines, are a long-term source of noise and continuous disturbance."

As explained by the Pennsylvania Department of Conservation and Natural Resources in its assessment of the impacts of exploration and development in the Marcellus play:

> "Natural gas exploration and development can cause short-term or long-term conversion of existing natural habitats to gas infrastructure. The footprint of shale-gas infrastructure is a byproduct of shale-gas development. The use of existing transportation infrastructure on state forest lands, such as roads and bridges, increase considerably due to gas development. … Shale-gas development requires extensive truck traffic by large vehicles, which may require upgrades to existing roads to support this use. These upgrades may affect the wild character of roads, a value that is enjoyed by state forest visitors. … Compressor stations commonly are used in association with gas production and pipelines. Compressor stations increase the gas pressure at the well bore or within pipelines to overcome friction or production volume decreases. Noise from compressors can dramatically affect a state forest user's recreational experience and generate conflict. Unlike compressors, most sources of potential noise on state forest land are temporary in nature. … The development of oil and gas resources requires pipelines for delivering the product to market. When compared to other aspects of gas development, pipeline construction has the

[178] Brittingham, M.C., et al., Ecological Risks of Shale Oil and Gas Development to Wildlife, Aquatic Resources and their Habitats, Environmental Science & Technology, pp. 11035-11037 (Sept. 4, 2014) (citations omitted).

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greatest potential to cause forest conversion and fragmentation due to the length and quantity of pipelines required."[179]

The fact that gas wells "would need to comply with federal, state, and local air regulations" does not excuse FERC from its obligation of analyzing these cumulative impacts. FERC has an independent duty to review the environmental and human health impacts of the project and cannot simply rely on the regulatory efforts by the EPA and DEP.[180] Moreover, the issuance of a permit simply means that a polluting source has met a "minimum condition;" it does not establish that a project will have no significant impact under NEPA.

FERC failed to take a hard look at cumulative impacts on land use, recreation, special interest areas, and visual resources. FERC used different standards in assessing cumulative impacts on these resources areas. For example, for impacts to prime farmland, FERC used specific acreages to describe the impacts of the ACP. For recreation and special-interest lands, however, FERC provided no acreages. Instead, FERC simply stated that there could be cumulative impacts on recreation and special-interest areas "if other projects affect the same areas or feature at the same time" that ACP are constructed. FERC should have determined the acreage of recreation and special-interest lands impacted by both the ACP as well as other projects, including shale gas well and infrastructure development projects. Again, conclusory statements are not sufficient analysis.

[179] PA DNCR Shale Gas Monitoring Report, April 2014: www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_20029147.pdf

[180] *Idaho v. Interstate Commerce Comm'n*, 35 F.3d 585, 595-96 (D.C. Cir. 1994) (agency fails to take a "hard look" when it "defers to the scrutiny of others").

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Because FERC unreasonably restricted the extent of its cumulative impacts analysis, failed to quantify many of the effects that it does acknowledge, and repeatedly relied on conclusory statements to dismiss significant impacts, the DEIS's cumulative impacts analysis does not meet the requirements of NEPA. FERC must remedy those defects in a revised DEIS and provide that analysis for public comment.

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VI. The DEIS ignored the environmental and socioeconomic impacts of the Piedmont Pipeline.

A major deficiency in the DEIS is the failure to include environmental and socioeconomic impacts from the approximately 26-mile spur line from Junction A in Robeson County to the Smith Energy Complex near Hamlet in Rockingham County (the "Piedmont Pipeline").[181] The DEIS classifies it as a nonjurisdictional facility, even though it is owned by one of the owners of the ACP, Duke Energy's wholly-owned subsidiary, Piedmont, going to one of the Duke Energy generating facilities. The site houses two natural gas combined-cycle units, which generate 1,084 MW, and five natural gas combustion turbine units. The burning of the natural gas by these plants has been used by Dominion to justify the need for the ACP; it is one of the long-term contracts discussed above.

Dominion erroneously maintains FERC "has no authority over the siting, permitting, licensing, funding, construction, or operation of the proposed pipeline facilities" and claims the North Carolina Utilities Commission is the lead agency with jurisdiction over the Piedmont Pipeline and related facilities. Contrary to this position,

[181] Dominion Resource Report 1 (General Project Description), pp. 1-69 – 1-72.

CO121-35 Section 2.8 includes a discussion of non-jurisdictional facilities associated with ACP and SHP.

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the Piedmont Pipeline is part and parcel to the ACP. The sole purpose of the Piedmont Pipeline is to carry the natural gas flowing on the ACP to one of its major end users. The ACP does not end at Junction A but continues on to the Smith Energy Complex, making it a link in the ACP corridor. The ACP terminates at the Smith Energy Complex rather than the Junction A interconnect. FERC should therefore claim its authority over the Piedmont Pipeline as part of the ACP.

The DEIS should be supplemented to include the impacts from the Piedmont Pipeline. The piecemealing of projects – eliminating a major component of a project -- is discouraged by NEPA. "From a procedural standpoint, NEPA "provides the vehicle for agency [and public] consideration of overall project-related impacts prior to the permit decision. Ideally, EISs present comprehensive, rather than piecemeal, environmental impact and regulatory analysis."[182]

The new corridor will have many of the same environmental impacts as does the rest of the ACP, such as impacts on stream crossings, water quality, wildlife habitat, and farms and families. Important to the comments on cultural resources and environmental justice described above, the Piedmont Pipeline will have a significant and disproportionate impact on members of the Lumbee Indian Tribe. Equally important, the cumulative impacts of air pollution and methane release from the Duke Energy natural gas plants should be quantified and included in the ACP DEIS.

[182] www.yalelawjournal.org/note/nepa-eiss-and-substantive-regulatory-regimes

CONCLUSION

For all of the reasons stated above, the DEIS for the proposed ACP does not comply with the minimum requirements of NEPA and the Commission's guidance documents. In order to meet statutory and regulatory requirements, FERC must remedy the flaws identified herein and reissue a revised DEIS for review and comment by the public.

Please inform me of any and all actions FERC takes relating to the proposed ACP and I will notify my clients of these actions.

ON BEHALF OF THE PUBLIC INTEREST GROUPS

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