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Title:
Comments: September 5, 2017

Via Email to:

Reviewing Officer Glen Casamassa Associate Deputy Chief

U.S.D.A. Forest Service Attn: Administrative Reviews

1400 Independence Avenue, SW Mailstop # 1104

Washington, DC 20250 objections-chief@fs.fed.us
Re: Atlantic Coast Pipeline Decision Objection
Dear Associate Deputy Chief Casamassa:

The Southern Environmental Law Center submits the attached objection to the Atlantic Coast Pipeline Decision on behalf of the following organizations:

Shenandoah Valley Network,

Highlanders for Responsible Development, Virginia Wilderness Committee, Shenandoah Valley Battlefields Foundation, Natural Resources Defense Council, Cowpasture River Preservation Association,

Dominion Pipeline Monitoring Coalition, and Friends of Buckingham.

We look forward to the opportunity to discuss these issues with the Forest Service.

Sincerely,

Gregory Buppert, Senior Attorney

UNITED STATES OF AMERICA DEPARTMENT OF AGRICULTURE UNITED STATES FOREST SERVICE

Before the Chief USDA Forest Service

In re Objection to the Final EIS and) Draft Record of Decision for the Atlantic Coast Pipeline) Special Use Permit/Land and Resource Management)

Plan Amendments)

) Appeal No.

SHENANDOAH VALLEY NETWORK,) HIGHLANDERS FOR RESPONSIBLE DEVELOPMENT,) VIRGINIA WILDERNESS COMMITTEE,) SHENANDOAH VALLEY BATTLEFIELDS FOUNDATION,) NATURAL RESOURCES DEFENSE COUNCIL,) COWPASTURE RIVER PRESERVATION ASSOCIATION,) DOMINION PIPELINE MONITORING COALITION, and) FRIENDS OF BUCKINGHAM)

NOTICE OF OBJECTION AND STATEMENT OF ISSUES

Objection prepared by:

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September 5, 2017
NOTICE OF OBJECTION

As authorized by 36 C.F.R. [sect] Part 218, Shenandoah Valley Network, Highlanders for Responsible Development, Virginia Wilderness Committee, Shenandoah Valley Battlefields Foundation, Natural Resources Defense Council, Cowpasture River Preservation Association, Dominion Pipeline Monitoring Coalition, and Friends of Buckingham (the Conservation Groups) object to and challenge the Final Environmental Impact Statement for the Atlantic Coast Pipeline (the final EIS or FEIS) and the Draft Record of Decision for Atlantic Coast Pipeline Project Special Use Permit/Land and Resource Management Plan Amendments (the draft ROD).

The Conservation Groups names, addresses, and telephone numbers are as follows:

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For purposes of 36 C.F.R. [sect] 218.8(d)(3), Gregory Buppert, counsel with the Southern Environmental Law Center, will serve as the contact person for lead objector Shenandoah Valley Network. The Southern Environmental Law Center is serving as legal counsel to the Conservation Groups.

The name of the project being objected to is the Final Environmental Impact Statement and Draft Record of Decision for Atlantic Coast Pipeline Project Special Use Permit/Land and Resource Management Plan Amendments for the Monongahela National Forest and the George Washington National Forest (July 2017). The Responsible Officials identified in the draft ROD are Tony Tooke, (former) Regional Forester for the Southern Region, and Mary Beth Borst, Acting Regional Forester for the Eastern Region. The Reviewing Officer is Glen Casamassa, Associate Deputy Chief. The proposed pipeline would be located on the George Washington and Monongahela National Forests in Virginia and West Virginia.

The final EIS and the draft ROD are governed by numerous laws, including the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), the Endangered Species Act (ESA), the Clean Water Act (CWA), the Administrative Procedure Act (APA), associated regulations, the Forest Service Manual (FSM), the Forest Service Handbook (FSH), and other applicable laws, regulations, and policies. Appellant's concerns regarding the compliance with these laws, regulations, and agency rules are detailed in the following sections of this Objection, as are the specific changes and relief requested.

The Conservation Groups submitted detailed comments on the Draft Environmental Impact Statement for the Atlantic Coast Pipeline on April 6, 2017,1 which are incorporated here by reference. The Groups cite to the relevant portions of their draft EIS comments in each section of this objection.
STATEMENT OF ISSUES

1.
1.
1. INTRODUCTION

For more than two years, the Forest Service expressed its deep concern about the impacts of the proposed Atlantic Coast Pipeline on the steep, forested mountain landscape of the Monongahela and George Washington National Forests. The agency's concerns are well-justified[mdash]the project would involve extensive clearing of undeveloped forest land on narrow ridgelines and steep slopes, trenching and blasting on mountainsides above sensitive headwater streams, and the risk of catastrophic slope failures. As just one example of many of the agency's approach, it requested site-specific slope stability plans from the developer, Atlantic Coast Pipeline, LLC, (Atlantic) to ensure that it would be, as Atlantic claimed, feasible to construct the pipeline across the steep ridges of the central Appalachians without long-term harm to forest resources. Those plans and many other analyses of the project's impacts to the national forests, as well as, mitigation to protect against those impacts remain incomplete.

The Forest Service's approach to the Atlantic Coast Pipeline changed abruptly in 2017. Documents in the record confirm that political pressure at levels above the Office of the Chief and pressure from Dominion Energy, one of the project's proponents, forced the agency to accelerate its decision even though critical environmental information on harm to soils, waters, threatened, endangered, and rare species, and other forest resources, and mitigation remained incomplete.2 The final EIS reflects a hasty and cursory environmental review that leaves many critical questions unanswered. While we are sympathetic that political pressure and pressure from Dominion have been significant, the Forest Service may not avoid its legal responsibilities to fully account for and analyze the likely harm from the Atlantic Coast Pipeline.

The Forest Service's foundation for its decision to approve the proposed project in the draft ROD is a construction, operation, and maintenance plan (the COM Plan) that purports to describe the mitigation necessary to minimize the likely severe impacts of construction in this landscape. But the COM Plan is not final, and many of its most critical mitigation measures are unknown or unassessed. Furthermore, because the COM Plan and other mitigation plans are not complete, the final EIS itself is not actually final[mdash]the Forest Service has not completed its effects analysis for many significant and highly relevant issues, including analysis of critical impacts to soil and water resources and aquatic species related to landslides, erosion, and stream sedimentation. As we explain throughout our objection, other important information also remains incomplete, such as a comprehensive and meaningful analysis of likely forest fragmentation; surveys for endangered, threatened, and other rare species; old growth surveys; and other necessary information.

Moreover, because the draft ROD is based on an incomplete EIS and other incomplete analyses and plans, its issuance is premature. The Conservation Groups object to the release of a premature draft ROD. The final EIS itself and other agency records plainly admit that the effects analyses and mitigation measures are not yet complete. Therefore, the Forest Service has not met its NEPA obligations to publically disclose and consider impacts and alternatives before making a decision.

Further, the agency does not know, and has not conducted the analysis to determine, whether its proposed action complies with its obligations under the NFMA, ESA, CWA, APA, and other applicable laws, regulations, and policies. In fact, as discussed in this objection and supporting materials, the Conservation Groups allege that the proposed decision does not meet applicable legal standards. Any Forest Service attempt to proceed with this proposal and to finalize the decision, as set forth in the draft ROD and based on the current EIS, will be legally deficient and invalid. A ROD must be based on complete, final analysis and documentation of project plans (including mitigation measures), not on promises to complete these analyses and plans in the future.

The fact that project plans and analyses are still in flux, that the Forest Service and the applicant are still assessing project impacts and negotiating mitigation measures, that the applicant continues to this day to submit extensive new documents and information to FERC, and that the ROD is premature also have impaired the Conservation Groups' ability to fully understand the project and its effects and alternatives, to identify and raise concerns, and to have fully meaningful opportunities to comment and to object. Conservation Groups also have outstanding FOIA requests which have not been fulfilled. Despite the fact that this project is still a moving target, the Groups have made a good- faith effort to identify and explain their issues and concerns with the Forest Service's proposed decision in this objection, and the Groups reserve the right to raise additional issues which subsequently come to their attention during the agency's apparent rolling environmental review.

For these reasons, as detailed below, the Conservation Groups request that the Forest Service withdraw the draft ROD and issue a new decision denying the permit application, based on impacts to national forest lands and resources and on the availability or likely availability of reasonable alternatives that avoid such impacts. If, instead, the Forest Service still insists on further considering and permitting the Atlantic Coast Pipeline, the agency must: withdraw the draft ROD; withdraw its approval and adoption of the current FEIS; obtain and thoroughly assess all information necessary to comply with all applicable standards; and prepare and circulate a

supplemental EIS that addresses and rectifies all deficiencies described in this Objection and supporting materials (or work with FERC to prepare and circulate such a supplement). As required in NEPA's implementing regulations, any supplemental EIS must be offered in draft form for public comment before being finalized.

II. LEGAL FRAMEWORK AND INITIAL ARGUMENTS

1. The National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires that federal agencies prepare a "detailed" environmental impact statement (EIS) for every "major federal action significantly affecting the quality of the human environment."3 The EIS is an information dissemination tool, allowing federal agencies and the public to understand the environmental impacts before they are commenced and, critically, before resources are irretrievably committed.4

The EIS must include the full consideration of environmental consequences that may result from a proposed project, the alternative means that may be used to minimize those impacts, and the cumulative impact of the project with other foreseeable actions.5 This process has been described by the courts as one designed to bring "clarity and transparency" to federal decisions affecting the environment.6

Only if an EIS is "based on adequately compiled information, analyzed in a reasonable fashion . . . can the public be appropriately informed and have any confidence that the decisionmakers have in fact considered the relevant factors and not merely swept difficult problems under the rug."7

To start, an EIS must provide a full and fair discussion and analysis of significant environmental information and impacts to foster informed decision-making and public participation.8 This analysis is required to ensure important environmental consequences will not be "overlooked or underestimated."9 A cursory reference to the impacts of an activity does "not satisfy the necessary 'hard look' at the project's environmental impact that is required by NEPA."10 The adequacy and accuracy of this impacts analysis will guide the sufficiency of the following alternatives, mitigation, and cumulative impacts analyses.11

The alternatives analysis is the heart of the EIS.12 This section mandates that the agency "rigorously explore and objectively evaluate all reasonable alternatives" in order to ensure the issues and choices are sufficiently defined and the agency and public have a clear basis for decisionmaking.13 The scope of "reasonable alternatives" should be guided by the underlying purpose and needs of the project; however, it should not be constrained by "those alternative means by which a particular applicant can reach his goals."14 Agencies must conduct a searching, independent review of the underlying purpose and need of a proposed project when considering alternatives and must demonstrate a degree of skepticism in evaluating the applicant's project statements.15 With respect to the alternatives an agency must consider in determining the scope of an EIS, Council on Environmental Quality (CEQ) regulations require evaluation of a "no action" alternative representative of the status quo, other reasonable courses of action, and mitigation measures not in the proposed action. 16

In order to ensure agencies take a "hard look" at the environmental impact of their actions, CEQ regulations require a discussion of mitigation measures throughout the EIS.17 A sufficient mitigation analysis requires a detailed discussion of mitigation measures and a full consideration of each measure's effectiveness in minimizing the specifically identified project impacts. Courts have found a discussion of general best management practices to be inadequate where those BMPs were not evaluated in light of the unique concerns raised by the proposed project.18 While courts do not require agencies to develop specific implementation and planning criteria for each

measure, a mere listing of mitigation measures without supporting analytical data has consistently been found to be inadequate in meeting an agency's NEPA duties.19

NEPA regulations also require agencies to discuss the cumulative impacts of proposed management activities. Cumulative impacts analysis must consider together the impacts of the project and all other past, present, and reasonably foreseeable actions planned by other federal and state agencies and activities on private land.20 "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."21 Future impacts must be considered in the context of the current condition of the affected environment. Cumulative impacts analysis cannot be deferred to future studies at the project level.22 NEPA "cannot be fully served if consideration of the cumulative effects of successive, interdependent steps is delayed until after the first step has already been taken."23 The analysis of cumulative impacts should "equip a decisionmaker to make an informed decision about alternative courses of action" and should be "useful to a decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts."24 Agencies must analyze the "synergistic effects from implementation of the Plan as a whole."25

The foregoing NEPA analysis is required to ensure agency decisionmakers consider accurate, high quality information about environmental impacts and to make this information available to the public and encourage involvement in decisionmaking.26 "[P]ublic scrutiny" is "essential to implementing NEPA," and a detailed EIS "serves as a springboard for public comment . . . ."27 An agency action is arbitrary and capricious where the agency has "entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."28 An uninformed, arbitrary and capricious decision to move forward with a proposed project is not consistent with the strict procedural duties mandated by NEPA. The draft ROD and the EIS on which it rests do not meet these requirements, as discussed further below.

B. The Forest Service must prepare a supplemental EIS for the proposed Atlantic Coast Pipeline.

The draft EIS for the Atlantic Coast Pipeline failed to meet the fundamental objective of NEPA to allow federal agencies and the public to understand the environmental impacts of the proposed project.29 Critical information about the public necessity of the pipeline, alternatives, construction across steep Appalachian ridges, protected species, and karst topography was incomplete or missing altogether.30 The Conservation Groups documented over 200 instances of missing or incomplete information, much of it critical to understanding the effects of the project and the efficacy of mitigation.31 As the Conservation Groups wrote in their comments, "[n]ot only is a great deal of information necessary to an assessment of impacts and mitigation missing or incomplete, but much of that information is essential to understanding the impacts" of the Atlantic Coast Pipeline at all.32

These deficiencies are particularly concerning with respect to the Forest Service's special use permit decision. The Forest Service agreed, noting numerous deficiencies in its own comments on the draft EIS33 and concluding that its effects analysis was not complete: "The direct, indirect, and cumulative effects [on forest soil and water resources] cannot be determined until the COM Plan has been revised and effects analysis completed related to sedimentation, impacts on riparian areas, and other resources."34 As one specific example, the Forest Service lacked critical information relating to the feasibility of constructing the Atlantic Coast Pipeline across steep slopes. As discussed at length in the Conservation Groups' comments and this objection, the Forest Service rightfully requested site-specific designs of stabilization measures in high- hazard portions of the proposed route on or in close proximity to the George Washington and Monongahela National Forests.35 After Atlantic failed to comply with that critically important request, the Forest Service notified FERC that the "lack of essential information hinders the Forest Service's ability to provide a definitive completion date for the decision."36 Because the Forest Service lacked critical information that it had repeatedly requested, it was unable to conduct a thorough assessment of impacts as required by NEPA.37 Atlantic's failure to produce the requested information thus also thwarted the public's opportunity to meaningfully comment on the draft EIS.38 The deficient COM Plan and missing information regarding construction on steep slopes "precluded meaningful analysis" of potential

impacts.39

Under NEPA, a draft EIS "must fulfill and satisfy to the fullest extent possible the requirements" for a final EIS.40 Instead of meeting this standard, the draft EIS for the Atlantic Coast Pipeline read like a rolling information request to the pipeline builder[mdash]"a mere stepping stone on the [agency's] way to gathering more information and eventually understanding the impacts of the project."41 That approach falls far short of NEPA's command for informed public involvement and undermines the Forest Service's ability to meaningfully and accurately assess potential impacts from the proposed project. As one district court recognized, "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)."42 Here, as the Conservation Groups made clear in their comments, the draft EIS for the Atlantic Coast Pipeline failed to meet this standard. 43

The proper remedy for the deficient draft EIS would have been issuance of a supplemental EIS and commencement of an additional comment period,44 not a final EIS, as the regulations implementing NEPA make clear. Those regulations require that "[i]f a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion."45 The Conservation Groups asserted in their comments that the Forest Service must remedy the lack of critical information in the draft EIS by issuing a revised draft EIS or a supplemental EIS.46 However, no supplemental EIS was issued, and the final EIS was released in July despite the fact that the draft EIS was so inadequate as to preclude meaningful analysis of the impacts to the national forests from the proposed pipeline.

These defects are not remedied and NEPA is not satisfied by FERC's claim that the public can respond to the rolling submittals of information from Atlantic in the FERC docket which continue, even now, following the release of the final EIS. As the Conservation Groups wrote in their comments,

NEPA requires that the agency collect the necessary information and offer its analysis of the significance of likely impacts in the draft EIS. It is precisely that expert agency analysis that the public comments on[mdash]not reams of raw, out- of-context information filed by the applicant months after the release of the draft EIS and, in some cases, fewer than two weeks before the close of the Commission's comment period.47

The lack of a supplemental EIS has thus far deprived the public of the ability to meaningfully comment on the Forest Service's analysis of information submitted by Atlantic after the draft EIS was issued. Moreover, even assuming the public could comment directly on the raw information and data submitted by Atlantic, there are no guidelines or procedures in place to ensure that the public is given sufficient time to comment on that information. If the public were required to comment on information submitted two weeks before the comment deadline, that would clearly preclude meaningful analysis and comment, as it would be an insufficient amount of time. Without a supplemental EIS, there is no procedural mechanism under NEPA to allow the public to comment on information submitted by the developer after the publication of a draft EIS. Similarly, with respect to the additional information Atlantic continues to submit following the release of the final EIS, the public has no information about when comments must be submitted or assurance that these comments will even be factored into a final decision. Furthermore, the Forest Service will not factor such comments into its decision because the agency is making that decision now.

NEPA's procedures exist for a reason[mdash]they provide clear benchmarks for the assessment of the impacts of a proposed project and assurance to the public and cooperating federal and state agencies that their input will contribute in a meaningful way to an informed final decision. Here, the draft EIS for the Atlantic Coast Pipeline turns these procedures on their head, violating the letter and the intent of NEPA.

The substantive and procedural defects of the draft EIS permeate the final EIS. The centerpiece of the Forest Service's draft ROD, indeed the basis for its decision to approve the Atlantic Coast Pipeline, is the COM

Plan48[mdash]Atlantic's plan for mitigating the severe impacts of pipeline construction and operation across the steep, forested landscape of the George Washington and Monongahela National Forests.49 But throughout the final EIS, the Forest Service states that the COM Plan is still in draft form and still the subject of ongoing consultations between Atlantic and the agency as it relates to many areas of likely impacts:

* "Atlantic would complete a COM Plan that includes additional measures to minimize impacts on environmental resources on [national forest] lands. . . ."50
* "Review of the COM Plan by the [Forest Service] is ongoing; therefore mitigation measures included in the COM Plan described in this EIS could be modified if the [Forest Service] determines that additional mitigation is necessary."51
* "Atlantic and the [Forest Service] currently are coordinating on site-specific designs for steep slope areas to further mitigate risks of slope failure, erosion, and sedimentation in these areas. Final construction and restoration procedures would be included in the COM Plan . . . ."52
* "Ongoing discussions between Atlantic and the [Forest Service] are expected to result in revisions to the COM Plan."53
* "The [Forest Service] is continuing to work with Atlantic on site-specific designs and performance-based standards which would be used to minimize the risks for sliding and other slope instabilities. The measures would be incorporated into the COM Plan with the goal of reducing the likelihood and magnitude of environmental effects as outlined in this section."54
* With regard to soils, the "[Forest Service] has provided comments on the COM Plan and Order I Soil Survey, and Atlantic will continue to consult with the [Forest Service] to address its comments."55
* "The [Forest Service] and Atlantic are currently working on prescribed measures to be used on [national forest] Lands for mitigating compaction and reducing the potential for compaction; these measure will be included in the COM Plan."56
* With regard to waterways, "Atlantic is in active consultation with MNF and GWNF to update and finalize the COM Plan, which may contain unique requirements/restrictions for construction and restoration activities on [national forest] lands. At this time, the COM Plan is in draft form, and it is unclear if erosion control and rehabilitation measures would meet the standards of the Forest Plan."57
* With regard to stream crossings, "the [Forest Service] may have additional waterbody crossing measures that would be incorporated into the final COM Plan."58
* With regard to wetlands, "the [Forest Service] has acknowledged that additional standards and guidelines would be necessary on [national forest] lands, and further revisions to the COM Plan are required."59
* With regard to migratory birds, the FEIS requires Atlantic to provide a "revised COM Plan [ ] that . . . identif[ies] the additional conservation measures developed in coordination with the [Fish and Wildlife Service], and/or [Forest Service]."60
* With regard to old growth forests, "[a]s part of its application for a Right-of-Way Grant, Atlantic is coordinating with the [Forest Service] on the details to be contained in the COM Plan."61
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* With regard to invasive plants, the "[Forest Service] is reviewing the COM Plan, and will coordinate with Atlantic on the final plan."62
* "Atlantic would consult with the [Forest Service] to finalize plans for the restoration and rehabilitation of the right-of-way included in the COM Plan."63

For impacts to forest soils and water resources[mdash]two of the most significant areas of impacts to national forest lands[mdash]the Forest Service candidly admits, as it did in the draft EIS, that it cannot complete its effects analysis until the COM Plan is revised.64 In other words, the final EIS, along with its primary mitigation tool, is still in draft form. The Forest Service does not know what the impacts of the proposed pipeline will be, nor does it know if those impacts can be mitigated or if the project can meet applicable forest plan standards. For example, regarding effects of erosion and sedimentation on water quality and aquatic species, the final EIS explicitly

admits that the existing discussion is "general" and has "no supporting documentation," that there is "no correlation" between information and analyses presented in two appendices on the topic, that "water resource impacts from sedimentation are largely uncertain," and that the COM Plan is in draft form so it is "unclear if erosion control and rehabilitation would meet Forest Plan Standards."65 Such admittedly deficient analysis plainly cannot pass muster under NEPA and cannot provide an adequate basis for a draft or final ROD. As outlined in this objection, assessments of impacts to other forest resources, like threatened and endangered species, are also incomplete. To meet its NEPA obligations, the Forest Service must issue a supplemental EIS for public comment, or work with FERC to issue a supplemental EIS, that adequately discloses and considers effects to national forest resources, identifies the mitigation measures that will apply to national forest lands in an updated COM Plan, and considers the effectiveness of each measure proposed.66

The version of the draft COM Plan included with the final EIS is dated January 2017, shortly after the release of the draft EIS. Thus, the public lacked a full and proper opportunity to comment at the draft EIS stage on this key plan.67 More problematically now, however, is the fact that the COM Plan is still incomplete, yet the Forest Service proposes to finalize its decision now and to defer its analysis and completion of project plans and mitigation measures until later. NEPA does not allow the agency to finalize its decision now based on future promises and to conduct critical effects analyses and project revisions outside of the public process and apparently untethered to the environmental documentation that NEPA requires. Thus, the Forest Service has deprived the public of an opportunity to meaningfully comment on the COM Plan and any future revisions, even though this plan is the foundation for the Forest Service's decision to approve the special use permit and plan amendments for the Atlantic Coast Pipeline. As the Conservation Groups argued in comments on the draft EIS, this problem should have been remedied by issuance of a supplemental EIS for public comment prior to publication of the final EIS. The Forest Service should take that step now, on its own or in collaboration with FERC, and issue a supplemental EIS for public comment once all relevant information and the final COM Plan[mdash]which the Forest Service has deemed essential[mdash]have been submitted and reviewed by the agency.68

Under NEPA, an EIS must be supplemented if: the "agency makes substantial changes in the proposed action that are relevant to environmental concerns" or "there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."69 Supplements must be circulated in draft and final form.70 The future completion of the COM Plan and associated effects and mitigation analyses, regarding highly relevant and significant issues, is perhaps the very definition of substantial changes and/or new information or circumstances which require the preparation and circulation of a supplemental EIS. And without such a supplement, the current version of the EIS cannot properly be called "final" and such an incomplete EIS cannot provide an adequate basis for a Forest Service ROD.

Under NEPA, the Forest Service must prepare a supplemental EIS (including a draft supplement offered for public comment) in order to rectify the deficiencies in both the initial draft EIS and now in the purported final EIS, which have deprived the public of an adequate, meaningful opportunity to comment on this proposal, failed to adequately disclose and consider the effects of this proposed action and alternatives, and are not adequate to support the Forest Service's ROD. A supplement is also required to publically disclose and document whether and how this project complies with the Forest Service's obligations under the NFMA, ESA, Clean Water Act, and other substantive and procedural requirements discussed in this objection. We expect such analysis to reveal that the project as currently proposed is not consistent with these authorities, or at a minimum, that significant changes will need to be made in order to bring it into compliance.

C. The National Forest Management Act (NFMA)

1. NFMA's requirements are relevant to the Forest Service's decision concerning the Atlantic Coast Pipeline.

The National Forest Management Act (NFMA) sets forth a number of requirements which are relevant to the

Forest Service's analysis and decision on this permit. The NFMA directs the Forest Service to: "provide for outdoor recreation (including wilderness), range, timber, watershed, wildlife, and fish"; to "provide for diversity of plant and animal communities"; and "preserve the diversity of tree species" existing in the plan area.71 Regarding soil and water resources, the NFMA requires the agency to ensure management "will not produce substantial and permanent impairment of the productivity of the land" and to harvest timber only where: "soil, slope, or other watershed conditions will not be irreversibly damaged"; "lands can be restocked" with trees; and "protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperature, blockages of water courses, and deposits of sediment. . .."72 The NFMA also requires the identification, in forest plans, of lands unsuited for timber production and prohibits timber harvest there, except for two narrow exceptions.73 The NFMA requires the preparation of land management plans and requires that all "[r]esource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System lands shall be consistent with the land management plans."74

Pursuant to NFMA direction, to implement these mandates and other statutory obligations, in 1982 and 2012 the Forest Service adopted regulations for forest planning and management. In turn, forest plans set forth specific management direction for achieving the requirements of the NFMA, forest planning regulations, and other applicable laws, regulations, and policies.

Based on the issues that are identified and the effects that are disclosed in the FEIS, and on the major inadequacies in the FEIS analysis discussed herein, the Forest Service has not demonstrated that this permit is consistent with its obligations under the NFMA, applicable forest planning regulations, and the governing forest plan.

2. The Forest Service's draft ROD does not comply with the NFMA planning rule.

In issuing the draft ROD, the Forest Service has adopted the FERC final EIS for the Atlantic Coast Pipeline project,75 but as the Conservation Groups demonstrate throughout this objection this decision is unsupported by the record.76 A review of the final EIS, released on the same day as the Draft ROD, reveals that it contains numerous statements making clear that the Forest Service's "comments and suggestions" and concerns have not been satisfied by the analysis performed and contained in the Final EIS.

For each proposed amendment of forest plans, the responsible official must "[d]etermine which specific substantive requirement(s)" contained within 36 C.F.R. [sect][sect]

219.8 through 219.11 are "directly related to the plan direction being . . . modified[.]"77

The responsible official must then "apply such [directly related] requirement(s) within the scope and scale of the amendment[,]" but is not required to apply any of these substantive requirements that are not "directly related" to the amendment.78 The responsible official's determination of the direct relation of substantive requirements to the proposed amendment "must be based on the purpose for the amendment and the effects (beneficial or adverse) of the amendment, and informed by the best available scientific information, scoping, effects analysis, monitoring data or other rationale."79

In two express circumstances, the responsible official "must determine" that the substantive requirement is "directly related" to the amendment: when scoping or NEPA effects analysis for the proposed amendment reveals substantial adverse effects associated with that requirement, or when the proposed amendment would substantially lessen protections for a specific resource or use.80

The responsible official "shall use the best available scientific information to inform . . . amending . . . a plan[.]"81 The responsible official must determine what information is "the most accurate, reliable, and relevant to the issues being considered" and must document how the best available scientific information was used to inform the

amendment decision.82 This documentation must "[i]dentify what information was determined to be the best available scientific information," explain the basis for this determination, and explain the application of the information to the issues considered.83

In light of this framework and the deficiencies of the draft EIS, the Forest Service has erroneously concluded, unsupported by the record, that a number of the proposed amendment(s) do not "directly relate" to the identified relevant substantive requirements because the agency asserts that they will not have substantial adverse impacts and/or substantially lessen protections for a resource.84 The specific amendments and related issues are discussed further below.

Moreover, by concluding that various substantive requirements are "relevant" but not "directly related" to particular amendments at issue here, the Forest Service is performing semantic gymnastics in an attempt to exempt itself from its obligations under NFMA. Cutting through these word games, the bottom line is this: NFMA imposes substantive requirements on the Forest Service. Forest Plans are developed to satisfy those requirements. When the Forest Service amends a Forest Plan, it still must satisfy all underlying NFMA obligations. The illogical two-step of the regulations, where a proposed amendment can be "relevant" but found to be not "directly related" to the substantive requirements of the planning rule, should not excuse the Forest Service from considering and ensuring compliance with the NFMA regulatory requirements for a project like the Atlantic Coast Pipeline with potential severe, long-term consequences for national forest resources. Any other interpretation invites abuse and violates the intent of the planning rule.
III. PUBLIC NECESSITY AND ALTERNATIVES

1. The Forest Service relied on untested, incomplete, and inaccurate economic assumptions that biased the agency's evaluation of the Atlantic Coast Pipeline and violated NEPA.

The Forest Service relied on untested, incomplete, and inaccurate economic assumptions that biased the agency's evaluation of the Atlantic Coast Pipeline and violated NEPA. Inflated or inaccurate market information skews agency decisions about a project and misleads the public in its evaluation of project impacts.85 In Hughes River Watershed Conservancy v. Glickman, the Fourth Circuit rejected an EIS for a proposed reservoir finding that an inflated estimate of the project's recreation benefits skewed analysis of environmental impacts.86 The Court held that the inflated economic information "impaired the first function of an EIS[mdash]ensuring that the NRCS and the Corps take a hard look at the Project's adverse environmental impacts" and "impaired the second function of the EIS[mdash]ensuring that members of the public have accurate information to enable them to evaluate the Project."87 Thus, inaccurate market information can render the EIS defective when it is a barrier to "a well-informed and reasoned decision."88

Relying on this well-established law, the Conservation Groups raised multiple factual issues challenging and rebutting the economic assumptions presented in the draft EIS for the Atlantic Coast Pipeline, supporting their comments with expert reports and other technical information.89 Then, on June 21, 2017, a month before the release of the final EIS, these groups filed a motion requesting that FERC hold an evidentiary hearing to resolve disputed factual issues concerning the market demand for the Atlantic Coast Pipeline.90 Specifically, the Groups alleged in their motion that:

1. Atlantic Coast Pipeline, LLC's (Atlantic's) precedent agreements with affiliated shippers, which are or serve a regulated utility with captive ratepayers, distort market signals and are not a reliable market proxy.
2. Demand for natural gas for power generation in the region that includes Virginia and North Carolina is level through 2030, undermining market demand for the Atlantic Coast Pipeline.
3. Electricity load forecasts for Virginia remain level through 2030, undermining market demand for the Atlantic Coast Pipeline.

4. Electricity load forecasts for North Carolina have declined since 2014, undermining market demand for the Atlantic Coast Pipeline.
5. The capacity of existing natural gas pipeline and storage infrastructure, with planned modifications, is sufficient to meet demand for natural gas in Virginia and North Carolina.
6. Rapidly declining costs of renewable energy will render gas-fired power generation uneconomic in coming years.91

As they did with their comments on the draft EIS, Conservation Groups supported their allegations with expert reports and other technical information.92 However, the final EIS does not address these issues, instead reciting Atlantic's claims that the project is needed.93 Far from harmless, this flaw undermines the analysis in the final EIS and the draft ROD.

One need not look farther than the draft ROD's discussion of the "no action" alternative to grasp how thoroughly the Forest Service has embraced Atlantic's claims of necessity in its analysis.94 There, the agency lists a cascade of harms that will result if the Atlantic Coast Pipeline is not built: (1) "[p]rolonging existing supply constraints" which could result in "winter premium pricing," "price volatility," and lack of an economical gas supply for power plants; (2) "higher gas and electricity rates," (3) "energy shortages during times of winter peak demand," and (4) less "reliability and security of the natural gas supply to power plants to produce electricity."95 However, the evidence supplied by the Conservation Groups challenges each of these assertions, and no regulatory body[mdash]not FERC or the state utility commissions in Virginia or North Carolina[mdash]has yet made a finding on any of Atlantic's claims that the pipeline is a necessity.

The Forest Service also expressly justified its decision based on Atlantic's claims that the pipeline will lead to economic growth and jobs in West Virginia, Virginia, and North Carolina, and the draft ROD references two economic studies prepared by Atlantic's consultants.96 However, a 2015 analysis of these reports prepared by Synapse Energy Economics documented multiple flawed assumptions in their analysis, found them to "lack transparency and verifiable data," and recommended that their conclusions be viewed with "skepticism."97

Moreover, in contrast to the claims of Atlantic's consultants, new analysis from Skipping Stone, Inc., using data supplied by Dominion Energy Virginia to the Virginia State Corporation Commission, proves that the Atlantic Coast Pipeline will actually increase electricity rates in Virginia by as much as $2.3 billion over the initial term of Atlantic's precedent agreements.98 And Dominion Energy Virginia recently admitted in a discovery response in another proceeding that it has not analyzed whether it can meet its service obligations without the Atlantic Coast Pipeline in any of its annual resource plans submitted to Virginia regulators.99

In light of the significant unresolved issues that exist concerning whether the Atlantic Coast Pipeline is a public necessity, the Forest Service violates NEPA when it accepts Atlantic's claims without analysis and without considering or even acknowledging significant contrary evidence.100 This defect[mdash]the Forest Service's reliance on unjustified economic assumptions[mdash]calls into question every aspect of the environmental and alternatives analysis in the final EIS and draft ROD.101 Furthermore, it deprives the public of an opportunity to comment on accurate information.102 We are left to speculate how the Forest Service might have weighed the environmental impacts of the project if it had realized that significant questions existed about the need for the project at all. But NEPA requires more, and the Forest Service must prepare a supplemental EIS for public comment, or work with FERC to ensure that one is prepared, that tells more than one side of the story for the Atlantic Coast Pipeline. That candor in an EIS is essential for informed public comment and agency decision making.

As the Conservation Groups wrote in their comments, the Forest Service's special use permit regulations require the Forest Service to "reject any proposal if [it] determines that [t]he proposed use would not be in the public interest."103 The Forest Service ignores the command of this regulation when it fails to acknowledge the

existence of a substantial dispute concerning the market demand for the Atlantic Coast Pipeline and blindly accepts the claims of the project proponent in the draft ROD. The Forest Service cannot make a determination that allowing the Atlantic Coast Pipeline to cross national forest lands is necessary to "best meet the present and future needs of the American people" until it or another federal agency resolves these disputed issues in a fair and transparent way.104 While the Forest Service may believe that conducting such an assessment is outside its own expertise, we strongly urge the agency to ensure that such assessment is conducted as part of a larger, multi-agency review process for this project, because the Forest Service must have this information to complete its own reviews and meet its own requirements. If the agency fails to do so, it will violate NFMA and its implementing regulations.

B. The Forest Service does not adequately consider important reasonable alternatives to the Atlantic Coast Pipeline in violation of NEPA.

The Forest Service relies on untested, inaccurate, and incomplete information on market demand for the Atlantic Coast Pipeline to give inadequate consideration of important alternatives, including the "no action" alternative and the use of available capacity in existing pipeline infrastructure.105 Conservation Groups criticized the alternatives analysis in the draft EIS for the Atlantic Coast Pipeline writing that the

"Commission focuses too narrowly on Atlantic's goal of moving gas from the Dominion South Hub on the schedule Atlantic is pushing for, rather than making the determination that the public interest requires: Can the existing pipeline network meet demand for natural gas in Virginia and North Carolina?"106

Under NEPA, the alternatives analysis is the "heart of the environmental impact statement,"107 and requires that agencies "rigorously explore and objectively evaluate" all reasonable alternatives to the proposed action.108 An agency is not required to consider the environmental impacts of "alternatives that are too remote, speculative, or . . . impractical, or ineffective."109 But it may not "define the objectives of the project so narrowly as to preclude a reasonable consideration of alternatives."110 In the EIS, the agency must "[d]evote substantial treatment to each alternative . . . including the proposed action so that reviewers may evaluate their comparative merits."111

The Forest Service's acceptance of Atlantic's claims that its pipeline is needed causes it to dismiss existing infrastructure system alternatives without the necessary "hard look" required by NEPA. The final EIS does not address the issues that Conservation Groups raised in their comments on the draft EIS concerning existing infrastructure. Specifically, the final EIS does not address the expert report from Synapse Energy Economics examining the capacity of existing infrastructure to meet the demand for natural gas in the region that would be served by the Atlantic Coast Pipeline.112 In that report, Synapse concluded that that existing infrastructure, with modifications and upgrades already proposed, could meet demand for natural gas in Virginia, North Carolina, and South Carolina, through 2030 even under a high-gas demand scenario.113

In other words, even if Atlantic is right that there is a growing demand for natural gas in Virginia and North Carolina[mdash]and we do not accept that it is[mdash]existing pipelines can deliver enough gas to meet that demand. The use of existing infrastructure is an alternative that would avoid entirely or dramatically reduce on-the-ground environmental impacts to national forest lands and resources and eliminate new infrastructure costs for utility ratepayers in Virginia and North Carolina.114 For the Forest Service to meet its NEPA and NFMA obligations, this alternative requires careful consideration before committing public lands to the potentially severe harms described in the final EIS.

The Forest Service has also not considered the issues raised by Conservation Groups regarding the existing Transco pipeline system.115 The final EIS fails to mention the slated reversal of the Transco Mainstem, the largest North-South pipeline on the East Coast, or that the Commission approved the project that would complete the reversal earlier this year.116 Moreover, the final EIS does not address the fact that the subscribers to the approved reversal, which would move 1.7 bcf/day of Marcellus gas into the Southeast, are gas producers and

marketers looking for customers.117 In other words, this approved project will make more Marcellus gas available in Virginia and North Carolina than the Atlantic Coast Pipeline, and that gas does not have an identified end user. As the draft EIS acknowledges, the Transco system can move 11 bcf/day, an enormous capacity that dwarfs the capacity of the Atlantic Coast Pipeline and warrants careful consideration as an alternative.118 The Forest Service fails to meet its obligation to consider reasonable alternatives when the final EIS for the Atlantic Coast Pipeline does not address the historic shift in the direction of gas flow on the largest East Coast pipeline system running from the Marcellus through Virginia and North Carolina.

The final EIS's primary point with regard to the Transco system is that it does not connect to the Dominion South Point hub in northwestern West Virginia.119 But FERC and the Forest Service have not attempted to determine if existing pipeline infrastructure not operated by Transco, like the Columbia pipeline system, other interstate pipeline systems, or intrastate systems, could connect the Transco system to this hub. The final EIS claims, without meaningful analysis or support, that 300 miles of new pipeline would be necessary to make this connection.120 And even if gas is supplied on Transco from the Leidy hub in northeastern Pennsylvania, the primary objective of the Atlantic Coast Pipeline would be achieved: Marcellus gas would reach end users in Virginia and North Carolina and it would do so without a new, greenfield pipeline across the steep mountainous terrain of the George Washington and Monongahela National Forests.

The final EIS also claims that new pipelines are necessary to connect the Transco system to Atlantic's delivery points.121 But the Transco system already connects to several of Atlantic's proposed delivery points in southeastern Virginia via an existing lateral known as the Southside Expansion Project. The final EIS does not consider that connection or whether other laterals could connect Transco to Atlantic's proposed delivery points in North Carolina. Without this analysis, the Forest Service unlawfully overlooks this important alternative.

The existing Columbia pipeline network is another important system alternative that the final EIS summarily dismisses.122 Moreover, the final EIS does not respond to Conservation Groups' comment that it must examine the pipeline system as a whole and that its compartmentalized analysis ignores opportunities to take advantage of available capacity on more than one system to increase incremental delivery in Virginia and North Carolina.123 And it does not address partial alternatives using existing infrastructure that may adequately meet the alleged demand for natural gas.124 The final EIS says that the Commission "does not direct the development of the gas industry's infrastructure regionally or on a project-by-project basis."125 But NEPA requires that federal agencies "shall . . . [I]nclude reasonable alternatives not within the jurisdiction of the lead agency."126 Even if we accept FERC's statement of its authority under the Natural Gas Act[mdash]which we do not[mdash]neither Forest Service nor FERC can ignore a reasonable alternative on these grounds for purposes of their NEPA analysis.

The Forest Service's obligation to consider the existing infrastructure alternative is underscored by its forest plan obligations. The forest plan for the George Washington states that "[s]pecial use authorizations provide for those private uses of Forest lands . . . which cannot be accommodated on non-Federal land."127 Similarly, the forest plan for the Monongahela National Forest includes the goal that "[p]roposed special uses of NFS lands[mdash]such as hydroelectric development, wind energy development, communication sites, water developments, and utility corridors[mdash]are considered that . . . cannot be accommodated off the National Forest."128 This restriction is also found in [sect] 2703.2 of the Forest Service Manual.129 The agency violates NFMA when it fails to ensure that its proposed action is consistent with the directives of the applicable forest plan.130

We note that the final EIS does not demonstrate that the pipeline "cannot be accommodated" off of national forest lands as required by the forest plans. As discussed above, the best alternative for avoiding national forest lands is the existing infrastructure alternatives which the final EIS cursorily dismisses. FERC and the Forest Service also rejected alternative pipeline routes off of the national forests solely because of their length, concluding that routes 43 miles and 15 miles longer would likely have more environmental impacts but acknowledging that "ground resource surveys have not been conducted."131 In other words, the objective of the

Atlantic Coast Pipeline can in fact be accommodated on non-national forest system lands on alternative routes, and neither FERC nor the Forest Service have attempted to qualitatively compare the environmental impacts of those routes with the proposed route. If a route slightly longer than the current route, but perhaps through less sensitive lands than those found on the national forests is feasible, then it must be examined in detail in the final EIS so that the agency and the public can meaningfully compare it to the propose route.132 The Forest Service violates NEPA and NFMA when it fails to undertake a meaningful analysis of these routes or of the existing infrastructure alternative.

The Forest Service also brushes aside the "no action" alternative.133 As we discussed above, the draft ROD lists a cascade of harms that will result if the Atlantic Coast Pipeline is not built[mdash]gas supply constraints, higher gas and electric rates, and energy shortages among others.134 But this is a recitation of Atlantic's talking points, not the product of Forest Service or FERC analysis. The agency cannot reasonably reach these conclusions when it and other federal agencies have failed to closely examine the actual market demand for the Atlantic Coast Pipeline and the availability of existing infrastructure to meet that demand. The agency does not know whether any of the alleged harms would result if the Atlantic Coast Pipeline is not built because the Forest Service, FERC, or any other cooperating agency has not attempted to evaluate the merit of the claims disputing the market need for this project.

As with the draft EIS, inaccurate and incomplete economic assumptions skew the alternative analysis in the final EIS and draft ROD. These documents focus myopically on Atlantic's goal of moving gas from the Dominion South Hub to the Southeast and accept the premise that economic harm will result if this pipeline is not built. That narrow view, skewed as it is by the blind acceptance of Atlantic's claims of public necessity, violates NEPA and NFMA.

As a final point, the Forest Service presents a binary choice in the draft ROD[mdash] Atlantic Coast Pipeline or no Atlantic Coast Pipeline.135 The agency does not move forward for consideration any other alternative, including alternatives that would avoid national forest lands entirely. NEPA requires that the Forest Service identify all of the alternatives it considered in a record of decision and explain how it made its selection of the environmentally preferable alternative.136 If the Forest Service did not consider alternatives other than the proposed pipeline and the "no action" alternative, then the agency has not met its NEPA obligation to consider a reasonable range of alternatives. And if it did consider other alternatives, then the agency has failed to transparently disclose those in the draft ROD.

IV. ENVIRONMENTAL IMPACTS

1. The Forest Service has ignored inadequacies in the NEPA process and has improperly reached unsupported conclusions in the Draft Record of Decision, and in so doing fails to protect a number of important resources.

The construction of the Atlantic Coast Pipeline across the Monongahela National Forest and the George Washington National Forest will adversely impact a number of important resources. These resources include soils;137 intact interior forest; water resources;138 threatened, endangered, and rare species, and other important species such as brook trout;139 and old growth forest.140 In issuing its Draft Record of Decision, the Forest Service has adopted the Final EIS for the Atlantic Coast Pipeline as issued by the FERC. The Final EIS for the project is deficient.

The Forest Service has also approved a number of project-specific amendments to plan standards contained in the Land and Resource Management Plans for the Monongahela National Forest and the George Washington

National Forest, and has based this decision on its adoption of the deficient Final EIS. In so doing, the Forest Service has improperly concluded that several of these amendments do not "directly relate"141 to the relevant substantive requirements of the National Forest Management Act planning rule. In many instances, the Forest Service has also failed to consider relevant substantive planning rule and National Forest Management Act (NFMA) requirements. These plan standards are directly aimed at protecting many of the resources named above and discussed in this section.

B. The approval of amendments to plan standards protecting soil and water resources is unsupported by the record, based on inadequate analysis under NEPA, and violates the NFMA.

The treatment in the Final EIS of impacts to soil and riparian resources is fatally flawed, and the mitigation measures put forth in the Final EIS are incomplete and unsupported by evidence. We commented in detail on the proposed amendments to the two National Forest Plans put forward in the Draft EIS, including the plan standards dealing with soil and water resources, and commented on relevant supporting information in the Draft EIS, including steep slopes and soil impacts analysis.142

The Draft ROD approves the amendment of Monongahela National Forest LRMP standards SW06, SW07, and SW03, and George Washington National Forest LRMP standards FW-5, FW-8, FW-16, FW-17, and 11-003 to exempt the Atlantic Coast Pipeline.143 These plan standards protect soil and/or riparian and water resources. In approving these amendments, the Forest Service has concluded that the amendments do not "directly relate" to the relevant substantive planning rule requirements. This conclusion is unsupported by the record.

1. The Final EIS is fatally flawed because it fails to fully assess risks and adverse impacts, and the mitigation measures offered are incomplete and their effectiveness is undemonstrated.

The Final EIS fails to fully identify, assess, and disclose the risks and potential adverse impacts of the Atlantic Coast Pipeline project as relate to soil and riparian resources,144 fails to specify, discuss, and evaluate mitigation measures to offset those risks and impacts, and fails to provide evidence of those measures' effectiveness.

a. The Final EIS does not fully assess potential landslide impacts, and the mitigation measures presented are incomplete and unsupported.

The risks of landslides, slope failures, and debris flows on the two National Forests are grave and the impacts potentially catastrophic.145 A landslide can grow as it moves down slope, "becoming a much larger landslide, a fast-moving destructive mass that can destroy infrastructure and kill people down slope and in valleys more than two miles from debris slide source."146

The Atlantic Coast Pipeline would cross 5.2 miles of the Monongahela National Forest, of which 4.4 miles (85% of the route through the forest) would consist of areas with a high incidence of and susceptibility to landslides.147 Within the Monongahela National Forest, the pipeline would cross 1.9 miles of slopes of 20 to 35 percent, and 0.7 miles of slopes greater than 35%.148 Through the Monongahela, 82% of the pipeline route would be constructed over ridgelines.149 The pipeline would cross 16.0 miles of the George Washington National Forest, of which 9.3 miles (more than half of the route through the forest) would be built in areas with a high incidence of and susceptibility to landslides, and an additional 6.6 miles (41% of the route) has a moderate incidence of and susceptibility to landslides.150

The ridgelines and steep backslopes over which the Atlantic Coast Pipeline would be built on Forest Service lands are comprised mostly of silt-rich soil of a small (2 to 50 micrometer) particle size that is "the most susceptible to erosion due to its light weight and minimal cohesiveness."151 This dominant soil material on steep slopes means that "[e]rosion and sediment control measures would be critical during and post construction[.]"152 Of 113 soil test pits dug on Forest Service lands, 32% were located on slopes ranging from 45 to 70 percent.153 Some slopes were as steep as 100%.154

With this in mind, it is especially disturbing that the risks and impacts of landslide hazards related to the Atlantic Coast Pipeline have not been fully characterized and assessed, and the related mitigation measures remain incomplete.

The Final EIS states a "major concern" with the "potential failure of 1) temporary spoils during reconstruction and 2) the restoration backfills during the following decades and the resulting potential debris flows[.]"155 The Final EIS states that the Best in Class Steep Slope Management Program (the "BIC Team")156 "would use" Interstate Natural Gas Association of America ("INGAA") industry-specific guidance titled "Mitigation of Land Movement in Steep Rugged Terrain for Pipeline Projects" to develop mitigation designs for the Atlantic Coast Pipeline.157 The Final EIS thus admits that the BIC Team had not yet developed the mitigation designs at the time of publication of the Final EIS, and that these mitigation measures were not made available to the public as part of the NEPA process.158 It goes on to admit that "the full scope of this fill slope hazard is not recognized in" the industry-specific guidance.159 Mitigation measures should have been presented in the Final EIS, and Atlantic should not develop these measures based on guidance that does not recognize the full scope of this serious hazard.160 Failure to develop and present mitigation measures based on a full accounting of the risk violates NEPA.

The Final EIS goes on to note that while Atlantic has implemented some measures to minimize the potential for landslides, "the development of other slope instability/landslide risk reduction measures have not been completed or have not been adopted."161 It adds that these undeveloped measures "may have bearing on the likelihood and magnitude of environmental effects" discussed.162 This admits that both landslide impacts analysis and the mitigation measures to address those impacts are incomplete, and also puts the cart before the horse. The Final EIS should determine the likely or potential impacts, and then develop measures to mitigate those risks - not assess risks based on as yet undeveloped mitigation measures.

The Final EIS then assures us that Atlantic will comply with U.S. Department of Transportation regulations at 49 C.F.R. Part 192, which "specify pipeline design requirements," including 49 C.F.R. [sect] 192.317(a), which requires pipeline operators "to protect transmission pipelines from hazards, including landslides."163 However, there follows no discussion of the import of these regulations as applied to the impacts of this particular project, beyond the conclusory statement that "[a]dherence to DOT's pipeline safety regulations would minimize the risk of landslides in the project area."164 This assertion is shown to be unsupported in the very next sentence, where we are told that Atlantic is "currently working to provide documentation of the likelihood that their proposed design features and mitigation measures" would minimize landslide risks in the project area.165 Again, critical information and analysis are absent from the Final EIS, violating NEPA.

In fact, what mitigation measures are presented in the Final EIS to address landslide risks are based on incomplete assessment of impacts and are, beyond this deficiency, mostly incomplete. Many other promised mitigation measures and supporting analyses are missing from the Final EIS. This is not because the information is impossible to acquire, but because the FERC chose to issue a Final EIS without this critical information. These deficiencies in the Final EIS violate NEPA.

The Final EIS states that the BIC Team "is considering, but has not currently adopted, specific screening criteria" for slopes to be "identified for site-specific requirements for construction and restoration."166 While the screening criteria under consideration are presented, the Final EIS should contain finalized screening criteria and details of these site-specific requirements. These details should have been presented in the Draft EIS for public review and comment and agency evaluation. Likewise, while the BIC Team identifies six categories of potentially hazardous steep slopes in the Final EIS, we are told that the team "would develop standard mitigation designs for each of the six categories, drawing on industry techniques commonly utilized in pipeline construction," as well as the same INGAA guidance discussed above.167 Setting aside the issues with the INGAA guidance, these "standard mitigation designs" should have been developed and presented in the Draft EIS for public review and comment and agency evaluation. The failure to do so violates NEPA.

The incomplete environmental effects analysis, and the therefore incomplete basis for the development of mitigation measures related to steep slopes and landslides, is made very clear in the Final EIS. It admits that Atlantic has "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[.]"168 The Final EIS recommends that, prior to construction, Atlantic should file "all outstanding geotechnical studies" for a number of sites; "geohazard analysis field reconnaissance" for 25 sites "as well as any additional geotechnical studies proposed following completion of site reconnaissance[;]" "any mitigations proposed following the geotechnical studies and geohazard analysis field reconnaissance;" and the "status of the BIC Team analysis[.]"169 Contrary to FERC's "recommendation" that these analyses and plans be filed prior to construction, these important materials should have been completed and issued as part of the Draft EIS, reviewed and commented on by the public and evaluated by the agency, and then incorporated into the Final EIS. The absence of these studies and plans from the Draft EIS and the Final EIS violates NEPA.

In a letter dated October 24, 2016, Monongahela National Forest Supervisor Clyde Thompson, on behalf of the Forest Service, requested that Atlantic submit site-specific stabilization measure designs for ten high-hazard locations along the Atlantic Coast Pipeline route through the Monongahela and the George Washington National Forests.170 These high-hazard locations "were selected to provide a worst-case scenario for analysis and design."171 The requested locations consisted of six sites on the George Washington National Forest, and four sites on the Monongahela National Forest.172 The request was made to "further clarify the likelihood that the ACP can be constructed through the George Washington and Monongahela National Forests without undue risk of resource damage[.]"173

A letter dated February 22, 2017 from James A. Thompson, Ph.D., a third-party reviewer contracted by the Forest Service, to Forest Supervisor Clyde Thompson, details Atlantic's "lack of transparency and responsiveness" in providing information requested by the Forest Service "necessary to adequately assess the environmental effects of" the pipeline project.174 The letter describes the failure of Atlantic on three consecutive occasions, most recently at a February 17, 2017 teleconference,175 to provide "requested site-specific detailed design plans" for "two proof-of-concept sites."176 Dr. Thompson goes on to write that the "effectiveness of the proposed 'Best in Class' Steep Slopes Program has been an on-going concern" for the Forest Service, but that Atlantic "has not been forthcoming" with detailed information directly addressing "Forest Service concerns related to compliance with Forest Plan Standards and Guides."177 Dr. Thompson also notes deficiencies in the slope stability and sediment control analyses that have been provided by Atlantic, including an apparent failure to include "any data or information derived from the Order 1 Soil Survey" that was prepared for National Forest lands along the pipeline route.178

The Final EIS reflects that Atlantic has submitted site-specific designs for two sites: one ridge on Cloverlick Mountain in the Monongahela National Forest, and one steep slope in the George Washington National Forest.179 As for the other eight sites for which site-specific designs were requested in the October 24, 2016 letter,180 the Final EIS states that, if the project is authorized, the Forest Service would require approval of the two submitted designs as well as the other eight sites identified in the Forest Service letter before construction "at those locations" could begin.181 This is a blatant misrepresentation of the content of the October 24, 2016 letter, which stated, regarding the request for site- specific designs for not two but all ten sites:

Note that these are merely representative sites that have been selected to demonstrate whether stability can be maintained for the purpose of making a preliminary determination of Forest Plan consistency. Should the ACP Project be permitted, multiple additional high hazard areas will need to be addressed on a site-specific basis.182

The Final EIS concludes that "failure of temporary spoils or the restoration backfill on the northwest flank of Cloverlick Mountain could result in a debris flow that would travel far downslope . . . ."183 The Final EIS concludes that the designs were developed to "avoid, minimize, and mitigate the potential hazards," and briefly

describes the materials provided by Atlantic, but provides no independent evaluation or analysis of the effectiveness of these controls.184 The Final EIS draws no conclusions about the likely effectiveness of these measures. It instead merely notes that Atlantic has developed some mitigation measures but has not completed development of others.185 There must be analytical data to support the proposed mitigation measures.186 Its absence violates NEPA.

On December 23, 2016, Forest Supervisor Clyde Thompson submitted an analysis of landslides that occurred on the Monongahela National Forest during a flood event on June 23, 2016.187 The Forest Service provided the analysis "to illustrate the potential for similar high-intensity precipitation events to cause slope stability problems along the proposed ACP route."188 The analysis of 48 landslides located during road system checks after the flood event "does not encompass all of the landslides that occurred" on the Monongahela National Forest during the event, but provides a "snapshot" of mass movements on the forest.189 The analysis notes that many of the landslides were likely triggered in part by previous disturbance, depicting "how the landscapes in this region respond after they have been disturbed."190 The landslide analysis submitted by Forest Supervisor Thompson specifically references Monongahela Forest Plan standard SW07 and noted that the analysis performed demonstrates that geologies "previously believed to be relatively stable[ ] are highly susceptible to mass movement when steep slopes and extreme weather events coincide[,]" and that "disturbed soils . . . are also prone to mass movement."191 This analysis is critically important to the evaluation of the impacts of the pipeline, but does not appear to have been evaluated by or included in the Final EIS, either in its discussion of landslide risks or in its discussion of the amendment of Monongahela Forest Plan standard SW07.192

This analysis is inadequate under the NFMA and Forest Service regulations for the same reasons[mdash]the Forest Service has an obligation to provide for protection of the soil and water resources, and to risk mass soil movement, slope failure, landslides, and the alteration of stream channels violates these requirements, especially since analysis of these effects remains incomplete and mitigation measures are not yet established. The Forest Service also fails to demonstrate, in the face of these risks, how this permit is consistent with plan direction for watershed integrity and function, water quality, and aquatic species. We believe it is not, for reasons discussed here and in other sections on this topic.

b. The Final EIS, especially the Construction, Operations, and Maintenance Plan, is incomplete, as are the analyses of the environmental effects it is intended to mitigate, particularly the impacts of erosion and sedimentation on soil and water resources.

The Final EIS incorporates a Construction, Operations, and Maintenance Plan (the "COM Plan") in Volume II, at Appendix G.193 Analysis of soil and water resources in the Final EIS is woefully inadequate, especially the COM Plan, which is the center of this analysis.

The cover page of the COM Plan states that it is a "DRAFT," dated January, 2017.194 The COM Plan "applies only to USFS lands crossed by the ACP project"195 and "consists of a number of topical individual plans and attachments applicable to construction and operation of the ACP on USFS lands."196 The Final EIS states that Atlantic "would complete a COM Plan that includes additional measures to minimize impacts on environmental resources on NFS lands[.]"197 The COM Plan contains a broad variety of plans and mitigation measures for the impacts of the construction and operation of the Atlantic Coast Pipeline on the two National Forests it would cross - and yet the COM Plan was last updated in January 2017. This means that the COM Plan issued as part of the Final EIS in July 2017 - and upon which the Forest Service's Draft ROD depends - has not been updated to repair the inadequacies noted in the Final EIS and the agency record, and to reflect the public review and comment received, and does not incorporate the independent agency evaluation and analysis that should have

occurred, as part of the Draft EIS process. This is unacceptable and violates NEPA and the Forest Service's substantive obligations under the NFMA.

Several specific examples relevant to the amendments of soil and riparian standards that are at issue here merit a closer look.

The Forest Service "is continuing to work with Atlantic on site-specific designs and performance-based standards" to minimize the risk for landslides and other slope instabilities.198 The measures developed "would be incorporated into the COM Plan[.]"199 The Forest Service "has provided comments on the COM Plan and Order 1 Soil Survey, and Atlantic will continue to consult with the Forest Service to address its comments."200 Yet these comments, or any update of the COM Plan reflecting their incorporation, are absent from the Final EIS. "Performance measures for addressing final soil productivity and soil quality during restoration activities" on Forest Service lands are "currently being developed" by Atlantic and the Forest Service.201 Again, these measures, any analysis in support, and agency evaluation of the measures should have been presented in the Draft EIS for public comment and review, and incorporated into the Final EIS.

Restoration of forested riparian areas on federal lands "would be determined" based upon consultations with land management agencies (in this case, the Forest Service).202 With regard to water resources on federal lands, because the COM Plan is currently in draft form, "it is unclear if erosion control and rehabilitation measures would meet the standards of the Forest Plan."203 The Final EIS goes on to admit that, because the COM Plan is currently in draft form, "specific effects are unknown" pending revisions to the COM Plan, and notes that "[a]ny necessary mitigation measures would be incorporated into" the COM Plan "to achieve consistency with MNF and GWNF LRMP standards." It is difficult to understand the issuance of the Forest Service's Draft ROD given such admissions in the supporting Final EIS. The issuance of the Draft ROD is premature and invalid, and any final ROD would likewise be invalid.

In the section titled "Sedimentation Analysis for NFS Lands," the Final EIS states that modeling of soil erosion and sedimentation by subwatershed indicates annual soil loss ranging from 200 to 800 percent above baseline erosion during the first year of construction, depending on the subwatershed.204 One measure "to prevent concentrated flow on the right-of-way" is installation of water bars, but water bars "create concentrated flows where they discharge adjoining off right-of-way areas."205 According to the Final EIS, the Forest Service "has stated that Atlantic has not assessed how or whether the adjoining areas can receive concentrated flows," or whether (or, presumably, what) measures would be implemented to allow adjoining areas to "safely receive and convey the concentrated flows."206

The Final EIS notes that the slopes in the Monongahela and George Washington National Forests would require the "stacking" of several water bars, creating multiple points of discharge.207 The Forest Service "has stated the potential impacts of multiple points of concentrated discharges onto the adjoining areas has not been assessed."208 The soil erosion and sedimentation modeling results, which found a 200 to 800 percent increase in soil erosion in the first year, account for implementation of soil erosion devices such as water diversion bars and silt fencing, and the results showing a 200 to 800 percent increase in erosion incorporate the assumption that these devices would reduce erosion by 96%.209 On the very steep slopes where stacked water bars may be required, soil erosion rates are predicted to be even higher.210 And yet, the Final EIS admits that the feasibility of using water bars to convey concentrated flows onto adjoining areas, and the impacts of multiple points of concentrated discharges onto those areas, are unknown.211 This information calls into question the modeling of soil erosion and sedimentation, and the mitigation measures proposed.

The Final EIS also notes that Appendix I of the applicant's "Soil Erosion and Sedimentation Modeling Report" discusses sedimentation impacts, and describes that discussion of impacts as "general, presenting statements with no supporting documentation . . . . water resources impacts from sedimentation are largely uncertain."212 Finally, the Final EIS states that, because the COM Plan is in draft form, "it is unclear if erosion control and

rehabilitation measures would meet Forest Plan Standards" and states the Forest Service's belief that "sedimentation effects on water resources are unknown pending incorporation of necessary mitigation measures" into a revised COM Plan.213 The Forest Service also believes that "effects on wetland resources on NFS lands are unknown" pending incorporation of necessary mitigation measures into the COM Plan.214 In the discussion of "Sedimentation Analysis for NFS Lands," the Final EIS states that an "accelerated construction schedule is proposed to shorten the construction duration for steep (greater than 30 percent) slope areas from a typical 3-month to 2 weeks."215 This accelerated schedule - reducing the time for construction on steep slope areas to one-sixth of the "typical" time, is presented as a means of "reducing the probability of a storm event occurring during construction or restoration."216 There does not appear to be any further discussion or analysis of this proposed accelerated schedule within the Final EIS. This is a problem. No assessment appears to have been made of the potential tradeoffs of accelerating construction to such an extent. Can what would typically be done in three months be done in two weeks, on difficult terrain with substantial risks of landslides and other erosion impacts, without increasing the risks or impacts associated with the activity? The Final EIS is silent on this question. This violates NEPA.

David J. Hirschman, an expert in water resources management with Hirschman Water & Environment, LLC, reviewed the Upland Erosion Control Plan component of the January 2017 COM Plan draft, and submitted a memorandum entitled "Comments on erosion control effectiveness for ACP on Forest Service land."217 Mr. Hirschman notes that Section 8.13 of the COM Plan references Virginia Erosion and Sediment Control Minimum Standard 16, "which sets a maximum open trench length of 500 linear feet at any one time."218 Section 8.13 of the COM Plan states: "Atlantic will request that VDEQ approve open trench work greater than 500 feet where necessary."219 Presumably, such a variance would be utilized in achieving the proposed accelerated construction schedule across steep slope areas. As Mr. Hirschman points out, "[w]ithout knowing in advance where these exemptions will take place, it is impossible to know the extent of the disturbed area . . . . If practices are specified for the smaller limits, but then deployed for much larger limits, effectiveness will drop significantly and cannot be guaranteed."220 The Final EIS fails to explore these issues, in violation of NEPA.221

In the Draft EIS, the section "George Washington Proposed Amendment, Part 2" proposed the amendment of a number of soil and riparian resource-related plan standards, including FW-5, FW-16, and FW-17. Amendments to additional soil and riparian plan standards were proposed after the issuance of the Draft EIS, including FW-8 and 11-

The Draft EIS stated that, as of publication of that document, the "direct, indirect, and cumulative effects related to Proposed Amendment 2 cannot be determined," and could not be determined "until the COM Plan has been revised and effects analysis completed related to sedimentation, impacts to riparian areas, and other resources."223 The COM Plan has not been updated since January 2017, and so the direct, indirect, and cumulative effects related to sedimentation, riparian area impacts, and other resource impacts, caused by the amendment of these George Washington National Forest soil and riparian plan standards, remain unknown. The Forest Service adopts the Final EIS, and the Draft ROD is based on that Final EIS. Yet the Final EIS itself admits a number of instances of missing, incomplete, or inadequate information, or unanalyzed changes.

c. The Final EIS is fatally flawed in its assessment of soil and water resource impacts and its proposal of mitigation measures, and therefore does not meet NEPA requirements.

In conclusion, as discussed above, as relates to soil and water resources and the amendment of related plan standards for the Monongahela and George Washington National Forests, the Final EIS for the Atlantic Coast Pipeline project is fatally flawed under NEPA and the NFMA. It is deficient both in its assessment and analysis of environmental effects and resource impacts, and in its proposal, discussion, and demonstration of the effectiveness of mitigation measures. Many of these deficiencies are candidly admitted by the Final EIS itself. The NEPA analysis is clearly inadequate, and the Forest Service's decision is clearly arbitrary and capricious.

2. The Forest Service Draft Record of Decision cannot stand on the flawed Final EIS, and improperly concludes that amendments to soil and riparian plan standards on the two National Forests do not "directly relate" to relevant planning rule requirements.

In the Draft Record of Decision, the Forest Service has determined that the "FEIS provides sufficient evidence to support our decisions in compliance with Forest Service regulations[.]"224 We disagree. As outlined above, the Final EIS is deficient in its assessment of impacts to soil and water resources and its discussion of mitigation measures. Because of these deficiencies, the Forest Service is unjustified in adopting the Final EIS, and unsupported in reaching the conclusions it does in the Draft ROD with regard to the lack of "direct relation" of the proposed amendments to soil and riparian plan standards.

a. The Forest Service is unjustified in adopting the Final EIS.

40 C.F.R. [sect]1506.3(a) makes clear that an agency may adopt another agency's final environmental impact statement or portion thereof only if it "meets the standards for an adequate statement" under the NEPA regulations. As described in detail above, the Final EIS issued by FERC for the Atlantic Coast Pipeline project is deficient and does not meet the standards for an adequate environmental impact statement.

40 C.F.R. [sect] 1506.3(c) provides that a cooperating agency may adopt the environmental impact statement of a lead agency without recirculating only when, "after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied." The Forest Service's assertion in the Draft ROD that the Final EIS provides sufficient evidence to support its decisions is impossible to reconcile with the numerous statements in the Final EIS - released to the public on the very same day as the Draft ROD - that make very clear that the Forest Service finds the Final EIS and information provided by Atlantic to be missing and deficient in information and analysis relating to soil and water resource impacts and mitigation.

Beyond the above discussion of defects in the Final EIS, The Draft ROD itself makes admissions about the incompleteness of the impacts analysis and mitigation design as relate to soil and water resources. The Draft ROD discusses the use of the "best available scientific information"225 pursuant to 36 C.F.R. [sect] 219.3 in deciding to amend the LRMP standards. However, the Draft ROD states that Atlantic "will utilize [the BIC Team] to incorporate the results of the Geohazard Analysis Program into the project design and engineering" to address landslide risks.226

That the results of geohazard analyses have not already been incorporated into the project design and engineering before approval of LRMP amendments by the Forest Service violates NEPA and the NFMA. There is no explanation of how this information was applied to the issues considered here, and there cannot be, for the application of the analysis to project design has not yet occurred.227 The Draft ROD states that the BIC Team will use industry-specific guidance, including the INGAA guidance entitled

"Mitigation of Land Movement in Steep and Rugged Terrain for Pipeline Projects," but does not address the statement in the Final EIS that this guidance does not address the full scope of the hazard.228 The Draft ROD also plainly states that the COM Plan is incomplete.229 According to the Draft ROD, a version of the COM Plan "that incorporates measures and mitigation to ensure consistency with the LRMPs" will not be available until the Forest Service issues the Special Use Permit for the project.230 This means, necessarily, that the currently available January 2017 draft of the COM Plan does not ensure consistency with the LRMPs, and violates NEPA requirements to set forth effects analysis and mitigation prior to reaching a decision.

b. The Forest Service improperly concludes that the amendments to soil and riparian plan standards do not "directly relate" to relevant planning rule requirements.

The Forest Service has concluded that the amendments of three Monongahela National Forest LRMP standards relating to soil resources and five George Washington National Forest LRMP standards relating to soil and riparian resources do not "directly relate" to the identified planning rule requirements, and that therefore the Forest Service need not apply those requirements to the amendments. We disagree.

i. The Forest Service is unjustified in concluding that amendments to three Monongahela National Forest Plan

soil standards and five George Washington National Forest Plan soil and riparian standards do not "directly relate" to the substantive requirements of the planning rule.
The Forest Service has approved project-specific amendments of three Monongahela National Forest Plan soil standards: SW06, limiting severe rutting to less than 5% of an activity area; SW07, limiting the use of wheeled and/or tracked motorized equipment in the case of certain soil/site conditions, including steep slopes, very steep slopes, soils commonly wet at or near the surface, and soils highly susceptible to compaction; and SW03, dealing with the rehabilitation of disturbed soils dedicated to growing vegetation.231 The amendments to all three plan standards exempt the operational right-of-way and construction zone for the pipeline, "where the applicable mitigation measures identified in the COM Plan and SUP must be implemented."232

For the Monongahela National Forest, the Acting Regional Forester found two substantive requirements of the planning rule to be relevant to the amendment of these three standards. 36 C.F.R. [sect] 219.8(a)(2)(ii) requires the plan to include components to maintain or restore "[s]oils and soil productivity, including guidance to reduce soil erosion and sedimentation." 36 C.F.R. [sect] 219.10(a)(3) requires the responsible official to consider "[a]ppropriate placement and sustainable management of infrastructure, such as recreational facilities and transportation and utility corridors." It is unclear and goes unexplained why two substantive requirements, one dealing with water resources233 and one dealing with ecological integrity of riparian areas,234 were found to be relevant to proposed amendments to George Washington National Forest plan standards but were not found to be relevant here. The Draft ROD should consider whether those two substantive requirements are "directly related" to the amendments to Monongahela National Forest soil standards.

Citing the "best available scientific information" and the effects analysis performed in the Final EIS, and the incorporation of mitigation measures incorporated into the three modified standards via the COM Plan, the Acting Regional Forester concluded that the amendment to these three standards "will not cause substantial long-term adverse effects, nor a substantial lessening of protections, to the soils resources."235 Therefore, she determined that the two substantive requirements "are not 'directly related' to these Monongahela National Forest LRMP amendments, and that these rule provisions need not be applied."236

The Forest Service has approved project-specific amendments to five George Washington National Forest plan soil and riparian standards: FW-5, specifying that organic layers, topsoil, and root mat will be left in place over at least 85% of the activity area in soils dedicated to growing vegetation; FW-8, providing that water saturated in areas expected to produce biomass should not receive vehicle traffic, to prevent excessive soil compaction; FW-16, limiting exposure of mineral soil by management activities to no more than 10% in the channeled ephemeral zone; FW-17, limiting removal of basal area in channeled ephemeral zones to up to 50%, down to a minimum of 50 square feet per acre, and allowing additional basal area removal on a case-by-case basis when needed to benefit riparian resources; and 11-003, limiting exposure of mineral soil by management activities to no more than 10% within the project area riparian corridor.237

For the George Washington National Forest, the Regional Forester found relevant to the amendments three substantive requirements of the planning rule. These require the plan to contain plan components to maintain or restore: "[s]oils and soil productivity, including guidance to reduce soil erosion and sedimentation[;]"238 water resources in the plan area;239 and "the ecological integrity of riparian areas in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity[.]"240 It is unclear and goes unexplained why 36 C.F.R [sect] 219.10(a)(3), dealing with appropriate placement of infrastructure, was relevant to the three proposed amendments to the Monongahela National Forest plan soil standards but was not deemed relevant to these five amendments to George Washington National Forest LRMP soil and riparian standards. This should be explained.

The Regional Forester refers to the environmental effects analysis performed and lists the various components of the COM Plan and other mitigation measures. He concludes that, in light of the "best available scientific

information" and the Final EIS effects analysis, "the modification of these five soil and riparian plan standards will minimize adverse environmental impacts to soil and riparian resources and will not cause substantial long-term adverse effects, nor a substantial lessening of protections, to the soil and riparian resources."241 Therefore, he determined that the requirements of the above- listed three planning rule requirements "are not 'directly related' to the LRMP amendment, and that these rule provisions need not be applied."242

The Final EIS is deficient under NEPA and the NFMA in both effects analysis and mitigation relating to these amendments to the Monongahela National Forest Plan and George Washington National Forest Plan soil and riparian standards. The Forest Service was not justified in adopting the FERC Final EIS. The mitigation plans incorporated into the amendments are based on incomplete effects analysis, and are themselves incomplete and lacking in support and demonstrated effectiveness, as discussed in detail above. The "best available scientific information" has not been used in reaching this decision. The conclusion that the amendments will not result in substantial adverse effects and/or substantially lessened protections for the soil and water resources, and are therefore not directly related to the relevant planning rule requirements, is unsupported by the record, at best. In fact, the information that is contained in the Final EIS militates in favor of a finding that these amendments would result in substantial adverse effects and/or substantially lessened protections for the soil and riparian resources on the two National Forests.

C. Water Resources and Aquatic Life

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1. The Forest Service has not met its NEPA obligation to conduct a "thorough investigation" of the effects of the Atlantic Coast Pipeline on water resources on national forest lands.

The Forest Service has not met its NEPA obligation to conduct a "thorough investigation" into the effects of the Atlantic Coast Pipeline on aquatic resources on national forest lands.243 The Conservation Groups dedicated three sections of their comments on the draft EIS to their concerns with impacts on water quality caused by erosion and sedimentation from pipeline activities.244 Water is one of the most important resources of the GWNF and the MNF,245 and sedimentation is a principal risk to forest water resources.246 Sedimentation[mdash]caused by pipeline stream crossings, clearing of riparian vegetation, erosion from right-of-way clearing on steep slopes above waterways, and landslides and slopes failures from the right-of-way or spoil piles along the right-of- way[mdash]is also the most significant impact of the project on national forest waters.

In the final EIS, the Forest Service documents the possibility of extensive permanent harm to water resources from the Atlantic Coast Pipeline. It acknowledges that "extreme and unpredictable" storm events could cause "slope instability, flash flooding, and debris flow hazards" along the pipeline corridor with "significant," "substantial" and "drastic[]" effects on water quality.247 These effects could result in permanent or long-term impairments of receiving streams and violation of state water quality standards.248 Aquatic species will experience "long-term impacts" that have not or cannot be ameliorated.249

The final EIS predicts increased sediment loads up to 800% above baseline conditions but readily acknowledges that this analysis significantly underestimates the likely sediment inputs into waterways. A model provided by Atlantic predicted "significant increases in erosion" in subwatersheds on national forest lands, "equating to 200 percent to 800 percent above baseline erosion." 250 But even with this significant level of erosion, the final EIS states that "[s]oil erosion rates are predicted to be higher where there are steeper slopes and higher soil erodibility values."251 But the final EIS does not include an analysis of where on the national forests or how much national forest land might be subjected to higher erosion rates, an especially relevant inquiry given that the pipeline will traverse miles of steep slopes.

Moreover, Atlantic's model assumes an unrealistic effective-rate for erosion measures of 96%.252 Even with

perfect implementation, the erosion control measures are not likely to exceed an 85% effectiveness rate and are likely to be significantly lower in specific cases.253 In other words, downslope sediment loads reaching waterways will be dramatically above baseline.

The final EIS repeatedly characterizes the risk from sedimentation and landslides to water quality as long-term or permanent.254 A report from Dr. Robert Hilderbrand, a freshwater ecologist at the University of Maryland's Appalachian Laboratory, with twenty years of research experience on Appalachian brook trout, confirms the final EIS's characterization.255 Hilderbrand asserts, "[A]ctivities that degrade habitat in mountain streams for the fish or the aquatic invertebrates that they eat will create long-term consequences that are unlikely to be successfully restored or mitigated."256 These concerns are heightened for brook trout streams crossed by the project because they represent some of the most pristine trout waters remaining in the Chesapeake Bay Watershed.257 Furthermore, the final EIS does not attempt to determine what the fate of brook trout or any other aquatic species will be in streams receiving up to an 800% increase in sedimentation[mdash]these populations face potential extirpation from multiple watersheds on national forest land as a result of this project. In other words, the Forest Service is right to be concerned about the long-term impacts of the Atlantic Coast Pipeline on forest waterways.

Moreover, the Forest Service has questioned the applicability of the final EIS's analysis of the effects of sedimentation on aquatic species. Specifically, the Forest Service observed that the "sublethal effects thresholds" are not known for fishes on national forest lands, and therefore, the conclusion that sedimentation effects from the Atlantic Coast Pipeline will be minimal is not supported.258

In the final EIS, the Forest Service is refreshingly candid that its analysis of these effects and the mitigation necessary to avoid or minimize them is incomplete. Specifically, the agency states that:

* It does not know if "erosion control and rehabilitation measures would meet the standards of the Forest Plan" and that "specific effects" to water resources on federal lands are "unknown;" 259
* Mitigation measures for wetlands on federal lands are incomplete, and the effects of the project on these resources are "unknown;"260
* Mitigation measures for waterbody crossings are incomplete;261
* The impacts of runoff diversion to downslope areas, including waterways, along the right-of-way are unknown;262
* The development of slope stability measures to prevent landslides into waterways and protect water quality is incomplete;263

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* The impacts to ponds and rare species in the Brown's Pond SBA are unknown, and Atlantic has not identified necessary mitigation measures to protect these waters.264
* Site-specific measures to ensure rehabilitation of the right-of-way and reduce sedimentation in waterways are incomplete.265
* The impacts from increased stormwater runoff from the pipeline right-of-way are "unknown," and the final EIS does not include an analysis of the effectiveness of mitigation measures to protect against these impacts.266

These statements in the final EIS impeach the credibility of the draft ROD's conclusion that "impacts on groundwater and surface waters would be effectively minimized or mitigated, and would be largely temporary in duration."267 This conclusion from the Forest Service is not supported by the analysis presented in the final EIS. The agency has not completed an evaluation of the mitigation measures necessary to protect water resources on the national forests, it is still reviewing and revising Atlantic's proposed COM Plan, and it has not determined

whether mitigation will be effective to reduce the serious impacts of pipeline construction on downstream waters. The environmental analysis of the Atlantic Coast Pipeline fails to satisfy NEPA's requirements to scrutinize the impacts of the project and assess the effectiveness of proposed mitigation.268

The analysis presented in the final EIS for the Brown's Pond SBA epitomizes the defects in the Forest Service's decision to release a draft ROD.269 Brown's Pond SBA is a "seasonally flooded sinkhole pond community," a community type "known from less than 20 sites in the U.S. and threatened by hydrologic disturbance and timber harvests."270 As the final EIS acknowledges, Atlantic has yet to respond to the agency's request for information about its plans to expand an access road in the Brown's Pond SBA, the likely impacts of the proposed expansion, the location of pond crossings, and the mitigation measures Atlantic proposes to minimize those impacts.271 In other words, even though the Forest Service has released a draft ROD, it does not know what the impacts are and whether mitigation will minimize those impacts to an acceptable level for the rare pond community in the Brown's Pond SBA.

The Forest Service succinctly captured the status of its assessment of impacts to water resource in the final EIS and provided a roadmap for fulfilling its NEPA obligations:

The impacts of the ACP, however, should be evaluated based on a comparison of the proposed project to preconstruction conditions. The predicted erosion rates (and subsequent sedimentation) from ACP, given the proposed erosion and sedimentation controls to be determined in the COM Plan, would then be used to identify and evaluate potential impacts. Appendix I of the "Soil and Erosion and Sedimentation Modeling Report" discusses impacts from sedimentation. The appendix I discussion is general, presenting statements with no supporting documentation. No correlation or reference exists between Atlantic's appendix I information and the analyses performed and described in appendix H [Soil Erosion and Sedimentation Modeling Report], and thus water resource impacts from sedimentation are largely uncertain. Lastly, the COM Plan is in draft form, and it is unclear if erosion control and rehabilitation measures would meet Forest Plan standards. Thus, the FS believes sedimentation effects on water resources are unknown pending incorporation of necessary mitigation measures as revisions to the COM Plan."272

Thus, the analyses of impacts are incomplete and unsupported, and the agency does not have the information it needs to determine what the effects of pipeline construction and operation will be on water resources or whether mitigation can effectively reduce or eliminate those impacts. Finally, these statements from the final EIS are inconsistent with those in the draft ROD. An agency acts in violation of NEPA, and arbitrarily and capriciously, when it approves a project despite its own acknowledgement in a final EIS that it has not completed its NEPA review.

As we note elsewhere in this objection, the version of the COM Plan attached to the final EIS is from January 2017, shortly after the release of the draft EIS. To the extent that this plan has been revised or updated since January 2017, the public has not had a chance to review any subsequent revisions, even though the ROD presents this plan as the foundation of the Forest Service's proposed decision. Without a supplemental EIS that provides and is based on an updated and complete COM Plan, the public and other state and federal agencies will not have an opportunity to meaningfully review or comment on the impacts of the proposed pipeline.273 Based on the final EIS, the public and other state and federal agencies know that the possible impacts to the headwater streams of the George Washington and Monongahela National Forests are severe. What they do not know, and what the Forest Service does not know, is whether those severe impacts can be ameliorated. The draft ROD proposes the opposite of what NEPA requires: an uninformed decision by a federal agency.

In addition to these problems, the final EIS never undertakes an evaluation of the direct, indirect, and cumulative impacts of multiple waterway crossings in the same watershed.274 The final EIS acknowledges that the pipeline will cross individual waterways multiple times in both national forests.275 However, despite that acknowledgement, there is no apparent attempt to understand these impacts, which will likely act in concert to

impair water quality, harm aquatic life, and pose long-term threats to forest water resources.276 Without this analysis, the Forest Service has missed a critical element of the potential impacts on water resources on national forest lands.

The Forest Service has also not adequately evaluated the direct, indirect, and cumulative impacts of pipeline construction and operation on groundwater associated with springs and seeps located along the pipeline corridor, especially where those features are part of karst terrain on national forest lands.277 According to Dr. Chris Groves, a hydrologist at Western Kentucky University, a fundamental problem with Atlantic's proposed Karst Mitigation and Monitoring Plan is its focus on "identification and interaction with individual karst features" instead of "karst drainage systems."278 This defect led Dr. Groves to conclude that "a robust dye tracing effort to determine where and how groundwater moves in the vicinity of the proposed pipeline route is a necessary pre-cursor to determine with 'reasonable assurance' that the Atlantic Coast Pipeline will not harm the water quality of karst groundwater systems."279 On August 21, 2017, the Virginia Department of Conservation and Recreation expressed concern about impacts to karst systems in Little Valley and Valley Center, Virginia, adjacent to the GWNF, and requested further dye tracing.280 The DCR recommended total avoidance of karst in Valley Center to prevent contamination of nearby springs.281

2. The Forest Service will violate the Clean Water Act if it approves the special use permit and plan amendments for the Atlantic Coast Pipeline.

Under the federal Clean Water Act, all federal agencies must comply with state water quality standards.282 Thus, agencies may not cause or contribute to the impairment of streams. However, as explained above, the Forest Service candidly admits it does not know whether proposed mitigation will actually protect downslope waters from the detrimental effects of pipeline construction and operation. In fact, the final EIS acknowledges that the project will likely cause violations of state water quality standards.283

The final EIS's portrayal of impacts of erosion, sedimentation, and turbidity as a short-term, minor impact on water quality and aquatic life is at odds with admissions of

much greater impacts and risks elsewhere in the final EIS, and certainly at odds with information submitted by the Conservation Groups regarding the likely significant impacts and risks of this project.284 Furthermore, the conclusions that impacts to water quality and aquatic life from sedimentation, turbidity, and temperature increases will be short-term and minor are not supported by adequate analysis and are unsupported or even contradicted by the record. A Forest Service decision to issue a permit and take an action that would exacerbate existing water quality impairments285 would thus cause or contribute to violation of state water quality standards and the Clean Water Act.

The Forest Service cannot rely on the section 401 certification that is currently under review at the Virginia Department of Environmental Quality (DEQ). Nor can the agency rely on the 401 certification issue by the WVDEP. As the Conservation Groups explained in detail in their comments on Virginia DEQ's draft certification, neither the DEQ nor the State Water Control Board has "reasonable assurance" that state water quality standards will be met by the proposed project, in part because the 401 review will not consider critical information such as erosion and sediment control and stormwater management plans.286 Much like the Forest Service, the state has deferred consideration of the most essential element of the plan to ensure protection of water quality from construction of the Atlantic Coast Pipeline until later.

We also want to remind the Forest Service that Best Management Practices do not eliminate the risks of excessive sedimentation associated with pipeline construction, a reality that has resulted in water quality violations on many other projects in similar terrain.287 BMPs are not always implemented correctly, they often fail, and they are ineffective at protecting against extraordinary weather events, especially on steep slopes.

As discussed in this objection, the Forest Service itself recognized the need for, and requested from Atlantic, site-specific slope stabilization plans in high-hazard areas on and adjacent to the national forests, which Atlantic

repeatedly failed to provide.288 The Forest Service must admit these limitations and uncertainties and conduct site-specific analyses to ensure that the measures selected will protect water quality and not lead to violations of the Clean Water Act.

3. The Forest Service improperly adopts the final EIS and improperly concludes that amendments to soil and riparian plan standards for the George Washington and Monongahela National Forests do not "directly relate" to relevant planning rule requirements.

In the draft ROD, the Forest Service has determined that the "FEIS provides sufficient evidence to support our decisions in compliance with Forest Service regulations[.]"289 We disagree. As discussed throughout this objection, the final EIS is deficient in its assessment of impacts to water resources and its discussion of mitigation measures to protect these resources. Therefore, the Forest Service's decision to adopt the final EIS is unjustified, and the agency's conclusion in the draft ROD that there is no "direct relation" between the proposed amendments and substantive requirements of planning regulations is unsupported.

An agency may adopt another agency's final EIS or portion thereof only if it "meets the standards for an adequate statement" under the NEPA regulations.290 A cooperating agency cannot adopt the environmental impact statement of a lead agency without ensuring that, "after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied."291 As described in detail above, the Forest Service's own specific comments and suggestions in the final EIS make clear that the final EIS is deficient in its assessment of the impacts on water resources and the identification and evaluation of mitigation measures to protect those resources. There is therefore no basis on which the Forest Service could conclude that its comments and suggestions have been satisfied, rendering the agency's adoption of the final EIS unsupported.

Likewise, the Forest Service has erroneously concluded that the proposed amendments to five George Washington National Forest LRMP standards relating to soil and riparian resources do not "directly relate" to the substantive planning rule requirements related to "water resources" (36 C.F.R. [sect] 219.8(a)(2)(iv)) and to the "ecological integrity of riparian areas" (36 C.F.R. [sect] 219.8(a)(3)(i)).292 Therefore, the Forest Service concludes that it need not apply those requirements to the amendments.293 We disagree.

In the draft ROD, the Forest Service refers to the environmental effects analysis performed and lists the various components of the COM Plan and other mitigation measures. The Forest Service concludes that, in light of the "best available scientific information" and the Final EIS effects analysis, "the modification of these five soil and riparian plan standards will minimize adverse environmental impacts to soil and riparian resources and will not cause substantial long-term adverse effects, nor a substantial lessening of protections, to the soil and riparian resources."294 Therefore, the agency determined that the requirements of the three planning rule requirements listed above "are not 'directly related' to the LRMP amendment, and that these rule provisions need not be applied."295

But again, as discussed in detail throughout this objection, the effects analysis and mitigation plans relating to the impacts of the proposed project on water quality are incomplete and inadequate. There is therefore no basis for the Forest Service's conclusions that modification of these standards will minimize adverse impacts and that, consequently, the planning requirements are not directly related to the amendments. Therefore, the Forest Service has not relied on the "best available scientific information," and the final EIS militates in favor of a finding that these amendments would result in substantial adverse effects and/or substantially lessened protections for the water resources of the George Washington National Forest. The Forest Service should therefore have concluded that the proposed amendments are directly related to the planning requirements for "water resources" and "ecological integrity of riparian areas" and performed the required analysis to determine whether the amendments satisfy these substantive requirements and will "maintain and restore" the protected values.296

Finally, the draft ROD fails to explain why the planning requirements related to "water resources" and "ecological integrity of riparian areas" are not relevant to the amendments considered for the Monongahela National Forest.

This seemingly arbitrary distinction must be explained. Like the amendments proposed for the George Washington, the soil-related amendments proposed for the Monongahela are directly related to the planning rule requirements for "water resources" and "ecological integrity of riparian areas," and the Forest Service must determine if they satisfy these requirements and will "maintain and restore" the protected values.297

D. Forest Fragmentation

We submitted detailed comments on the flaws and inadequacies in the analysis in the Draft EIS of the Atlantic Coast Pipeline's fragmentation impacts on interior and core forests and associated wildlife, especially interior forest-inhabiting neotropical migrant bird species.298 Our comments also addressed the failure of the mitigation measures proposed in the Draft EIS and the Migratory Bird Plan to offset or even squarely address the impacts of the fragmentation of interior forest habitat that will occur due to this project.299

As addressed in this section, these inadequacies remain. The Final EIS is flawed on the subject of forest fragmentation impacts, and the Forest Service's Draft ROD cannot stand on it. These NEPA failures lead to similar failures to comply with the NFMA, including the failure to adequately consider impacts on Management Indicator Species associated with large patches of mature forest (especially the Ovenbird,300 Cerulean Warbler,301 and other relevant species302) and other species dependent on or benefitting from large patches of unfragmented mature forest, especially species of viability concern, such as the Cerulean Warbler and other species dependent on large blocks of unfragmented mature forest and undergoing range-wide population declines.

1. The Final EIS fails to assess the impacts of interior forest fragmentation.

In a letter to the FERC on August 21, 2017, experts from commonwealth agencies, as part of the Virginia Forest Conservation Partnership ("VFCP"),303 wrote that the "[i]mpacts of forest fragmentation on a diverse suite of forest ecosystem services is [sic] not thoroughly acknowledged, analyzed, nor quantified in the ACP Final EIS."304 We agree.

The Final EIS pays lip service to acknowledgment of the various negative impacts of forest fragmentation, and the loss or fragmentation of interior forest habitat, citing to two "comprehensive literature reviews."305 These reviews do restate in general many of the impacts of habitat fragmentation on wildlife and ecosystems.

Critically, however, the Final EIS fails to grapple with or even acknowledge relevant scientific information.306 NEPA requires that "relevant information" be made available so that the public can evaluate projects proposed by federal agencies.307 Here, the failure to fully acknowledge the extent and impacts of forest fragmentation is arbitrary and capricious in failing "to consider an important aspect of the problem."308

2. The Final EIS fails to assess the full scope of impacts of forest fragmentation.

The impact of forest fragmentation in converting thousands of acres of interior forest to edge habitat309 alone stands in contrast to the assertion made in the Forest Service's Draft ROD that "[t]he construction phase of the project on NFS lands would disturb 430.4 acres of land[.]"310

The analysis of forest fragmentation presented in the Final EIS is an improvement from that presented in the Draft EIS in that it provides an accounting of forest interior cores that will be fragmented by the pipeline, and catalogues them according to their size. However, the Final EIS does not consider the landscape context of forest blocks to be fragmented by the pipeline. This landscape context is critical to consider because, in the words of the VFCP, "[u]nfragmented, large patches of forest contribute greater ecological benefits than the same total area of forest distributed among smaller patches."311

According to Dr. Lesley Bulluck, Ph.D., Assistant Professor of Avian Ecology at Virginia Commonwealth University, "[f]ragmentation of the few remaining core interior forests has a larger impact than the fragmentation

of smaller forest remnants."312

The Final EIS considers the size of the individual forest cores and patches that will be fragmented by the pipeline, but does not "take[ ] into account the relative amount of interior forest in an area," which is "preferable [to] simply summing the edge habitat created by the pipeline."313

Todd R. Lookingbill, Ph.D., a landscape ecologist and Chair of the Department of Geography and the Environment at the University of Richmond, assessed the forest fragmentation impacts of the Atlantic Coast Pipeline in a seven-county study region: Pocahontas and Randolph Counties in West Virginia, and Bath, Highland, Augusta, Nelson, and Buckingham Counties in Virginia.314 His report was attached to and discussed in our comments on the Draft EIS. Dr. Lookingbill evaluated the landscape context of the pipeline route and found that Pocahontas and Randolph Counties in West Virginia are both 90% forested and Bath County in Virginia is 89% forested - the highest in the study region.315 Likewise, the three counties are standouts in terms of the percentage of land within each that is dominated by forest: Bath County is 98% forest- dominated, Pocahontas County 97%, and Randolph County 95%.316

The outstanding intact forests in these counties are exactly the areas where the pipeline route will impact the Monongahela National Forest and the George Washington National Forest, and the fragmentation impacts to these largely intact forests are incompletely characterized. Dr. Lookingbill calculated that, of the 7,092 acres of interior forest converted to edge habitat by the construction of the pipeline corridor within the 7 counties studied, about 18% would be on the two National Forests.317

The expertise of the VFCP in recommending not merely the calculation of direct clearing of forest and acreage converted to edge, but quantifying the full areal scope of indirect impacts, should be fully taken into account. VFCP quantified "indirect impacts pertaining to three fragmentation effects: increased edge effects, creation of smaller fragments from once larger forest cores, and reduced size of original forest cores (Didham 2010)."318 Their analysis concluded that, among the highest quality C1- and C2-ranked Virginia Natural Lands Assessment (VaNLA) forest cores alone, there would be 1,072 acres of direct impacts and 19,945 acres of indirect impacts. The total acreage of indirect impacts for C1 - C5 forest cores in Virginia is found by VFCP to be 44,227 acres. This stands in stark contrast to the Final EIS' assessment of edge creation alone, where it found 17,435.8 acres of edge would be created in Virginia.319

The Final EIS' analysis of forest fragmentation impacts violates NEPA because it fails to account for the true scope of indirect impacts to forests. "Failing to account for indirect impacts of the ACP to forests would gravely underestimate the extent to which Virginia's forest habitat would be affected by the project."320 The Final EIS considers the number and size of cores being fragmented, and the total acreage lost to clearing and edge creation, but fails to "address the full range of loss of forest values [that occurs] when irreplaceable cores are permanently fragmented"321 because it fails to consider fragmentation in the landscape context.322

3. The Final EIS and the Migratory Bird Plan fail to assess and present the impacts of forest fragmentation on forest interior songbirds and rely on misrepresentation of scientific data.

The Final EIS and its appendix, the Migratory Bird Plan, fail to disclose and assess the impacts of forest fragmentation on migratory birds, particularly forest interior migrant songbirds. Both documents fail to account for or engage with detailed scientific information and analysis provided in comments on the Draft EIS, and in expert reports323 attached to and informing those comments.

For example, the Migratory Bird Plan asserts that "vegetation clearing time restrictions will also minimize direct impacts on nesting . . . cerulean warbler[,]" referring to a restriction on clearing vegetation between March 15 and August 31.324 The Final EIS ignores scientific information provided in our Draft EIS comments and the attached report of wildlife and conservation ecologist Laura S. Farwell (the "Farwell Report") about Cerulean Warblers' preferential use of ridgetops as breeding habitat,325 failing to acknowledge or assess this impact while it points

out that 82% of the Atlantic Coast Pipeline within the Monongahela National Forest will be routed on ridgetops, and 65% within the George Washington National Forest.326 Other forest interior songbird species also use ridge-associated habitat to breed, and ridge-associated habitat is used "in high concentrations by raptors and songbirds during spring and fall migration[.]"327 Also unacknowledged by the Final EIS is growing evidence that species are migrating upward in elevation in response to the effects of climate change, or any exploration of the effects of the construction and operation of the pipeline on this process.328

In another example, the Final EIS states that "Atlantic identified 35 acres as the minimum size of interior forest habitat that would support most interior forest bird species (Robbins et al., 1989)."329 There follows no scientific assessment or evaluation of this claim, and no cited support aside from the single cited article. The Draft EIS made the same statement,330 and the Farwell Report addressed the 35-acre claim, and the representations made about the Robbins article, in detail.331 In the words of Ms. Farwell, the use of a 35-acre patch-size threshold is a misrepresentation of the original citation; Robbins et al. (1989) do not advocate use of a 35 acre (14 ha[.]) forest patch-size as a minimum habitat requirement for forest interior birds. In fact, the authors repeatedly state that many forest interior birds require continuous forest blocks nearly an order of magnitude larger (>100 ha[.] / 247 acres).332

Ms. Farwell notes that the habitat requirements of the 26 forest bird species evaluated by Robbins et al. (1989) range from 0.5 to 2,471 acres, "which underscores the fallacy of using a one-size-fits-all definition of forest interior habitat."333 The continued uncritical acceptance in the Final EIS of Atlantic's representation of the minimum habitat size requirement for "most" interior forest birds is unsupported by the scientific literature, and the Final EIS failed to respond to or include the information provided by Ms. Farwell.

The Final EIS also makes broad, unsupported statements about the lack of impacts to "common species,"334 while failing to consider impacts to forest interior species experiencing rapid and range-wide declines. The Bulluck Report points out that the Cerulean Warbler "is one of the most rapidly declining migratory songbirds in the US" and that nearly one-third of its breeding range overlaps the Utica/Marcellus Shale regions, including one-half of the "core/high abundance areas of its breeding range[.]"335 "The cumulative impacts of forest fragmentation in this region from future roads and pipelines will likely have significant impacts on these and other already declining forest dependent birds whose global populations rely on this region more than any other."336 The Final EIS ignores this reality.

In general, the Final EIS fails to address Ms. Farwell's extensively researched critique, or to provide relevant high quality information and scientific analysis337 contained therein.338 Likewise, the Final EIS fails to engage with scientific information provided by Lesley Bulluck, Ph.D., of Virginia Commonwealth University regarding changes in the forest interior bird community following construction of a pipeline.339

4. The mitigation measures put forward in the Final EIS and the Migratory Bird Plan do not address the impacts of the harm they purport to offset.

The Final EIS and the Migratory Bird Plan put forth mitigation measures that fail to address the adverse impacts caused by the fragmentation of intact interior forests. First, and fundamentally, the mitigation measures cannot address the full scope of adverse impacts because these impacts have not been fully disclosed or assessed by the Final EIS. Second, the mitigation measures put forward will not offset the harms being caused.

The discussion of mitigation in the Final EIS includes restoration and rehabilitation of the construction corridor and operational right-of-way, limited mowing of the corridor, planting of native forbs, and other such measures.340 We agree with the VFCP that "[w]hile some of these measures would yield some benefits, they would not offset the substantial indirect impacts to interior forests, including reduction in ecosystem services, resulting from construction of the ACP."341

The Migratory Bird Plan claims that "[d]irect impacts on nesting birds are not anticipated due to the timing of construction activities" and that impacts to habitat will be temporary "as suitable habitat is available in areas adjacent to the right-of-way[.]"342 This assertion is "over-simplistic and unsupported by the literature[,]"343 as it was when made in the Draft EIS. This view of the impacts to migratory birds ignores the impacts to the adjacent habitat of the fragmentation that will occur as a result of pipeline construction.

This degradation in habitat quality and reduction in habitat area available to nesting forest interior migrant songbirds will have impacts on nesting birds. The time-of-year restrictions on construction will prevent the felling of trees containing active bird nests, but do not mitigate these other impacts.

The Farwell Report points out that "there are no proposed plans for pre-construction surveys of forest-interior [Birds of Conservation Concern], nor are there any plans for monitoring birds in impacted areas, post-construction."344 The Final EIS has not addressed the impacts of the pipeline on these species, and the Migratory Bird Plan does not address how to mitigate those impacts. Aside from raptor nests and winter roosts and wading bird rookery surveys, Atlantic has surveyed for only five avian species.345 Two (Golden-Winged warbler and Loggerhead Shrike) prefer open and successional habitat; two (Northern Goshawk and Northern Saw-whet Owl) are raptors; one (Red-cockaded Woodpecker) inhabits pine savannas. Incredibly, Atlantic did not survey for a single forest interior songbird species along the route, nor did it consult publicly available data on bird occurrence and abundance, such as the North American Breeding Bird Survey.346

The Migratory Bird Plan claims that species such as Golden-winged Warbler and Loggerhead Shrike will benefit from open and successional habitat created by the pipeline corridor. As set out in the Bulluck Report, this assertion is subject to significant caveats.347 Further, the assumption that the destruction and fragmentation of interior forest habitat is mitigated by the creation of edge and early successional habitat is "over- simplistic and fraught with issues."348 These issues include the widespread population declines in forest interior species and the lack of such declines in edge species; the creation of a corridor by which predators and brood-parasitic Brown-headed Cowbirds may penetrate forests; biotic homogenization (replacement of habitat specialists with habitat generalists); loss of endemic species and ecosystem services they provide; and evidence that linear corridors "may comprise suboptimal habitat for many species (both forest and edge species), and may even function as ecological traps . . .[which] develop when natural cues that provide information about habitat quality become disconnected from reality[.]"349

All of this scientific information was made available to the FERC in our Draft EIS comments, but was not addressed in the Final EIS or the revised Migratory Bird Plan.350 This information calls into question the efficacy of the mitigation measures offered in the Migratory Bird Plan. Some, but not all, of these impacts, were discussed in either the Final EIS or the Migratory Bird Plan, but, critically, were not incorporated into a discussion of mitigation of forest fragmentation, loss of interior forest, and creation of edge.

The Migratory Bird Plan also states that Atlantic has acquired 2,820 forested acres "to be preserved across the project," and that these acquisitions "are intended to mitigate for adverse impacts (e.g., habitat loss) occurring on state/commonwealth-owned lands and will also offset habitat fragmentation impacts resulting from the ACP."351 No analysis is presented demonstrating how these acquisitions offset habitat fragmentation and habitat loss impacts. Are the properties comparable in habitat type and quality? Are the forests intact interior forest, inhabited by the species of interior forest migrant songbirds being adversely impacted by the Atlantic Coast Pipeline? These basic questions go unanswered. In addition, these properties were acquired purportedly to mitigate for impacts to state- owned lands, not federal lands. Finally, even if the habitat types and quality are comparable, the mere conservation of other forested lands does not "offset" the adverse impacts to forests along the pipeline route.

While we have not had time to perform a detailed review of the mitigation measures and methods put forth by VFCP,352 it is clear that state officials are correct in stating that the mitigation measures discussed in the Final

EIS and the Migratory Bird Plan "would not offset the substantial indirect impacts to interior forests,"353,354 including the migrant songbirds that depend on them.

5. The Forest Service's draft record of decision cannot stand on a defective final Environmental Impact Statement.

In the Draft ROD, the Forest Service states that "[o]ur independent review of the FEIS finds it meets the requirements of the NEPA, Council on Environmental Quality (40 CFR 1500-1508)" and that "[u]sing the best available scientific information, the FEIS provides an adequate analysis and discloses the environmental effects related to" the use and occupancy of Forest Service lands by the pipeline and the attendant proposed amendments of the two National Forest Plans.355 As set forth above, this assertion is inaccurate with respect to the substantial forest fragmentation impacts that the pipeline will cause to National Forest lands. The Forest Service's adoption of the FERC's Final EIS for the Atlantic Coast Pipeline project under 40 C.F.R. [sect] 1506.3(c) is unlawful, because the Final EIS does not "meet[ ] the standards for an adequate statement" under the NEPA regulations.356 This means that the Forest Service has no basis to conclude that it is not violating plan direction related to forest fragmentation and species dependent on this interior forest habitat. This would potentially render the proposal inconsistent with the Monongahela and George Washington National Forest Plans and, consequently, in violation of the NFMA.357

E. The Forest Service's evaluation of impacts to old growth violates NEPA, NFMA, the 2012 planning rule, and the GWNF Forest Plan.

The Conservation Groups have submitted comments on flaws and inadequacies in analysis of impacts on old growth forest.358 These inadequacies remain in the Final EIS, and the Forest Service's Draft ROD cannot stand on it. Moreover, the proposed amendment of GWNF Forestwide standard FW-85 related to old growth violates NFMA and the 2012 Planning Rule.

1. The Final EIS does not adequately assess the project's impacts on old growth forest.

The Final EIS fails to satisfy its NEPA obligations to thoroughly analyze the impacts of cutting old growth forest to clear land for the pipeline corridor. The Final EIS concludes that cutting old growth would not have any "substantial adverse effect" on old growth. Alarmingly, the Final EIS does this without completing the first step in analyzing impacts on old growth: site-specific old growth field surveys to identify existing old growth. Having failed to do so, the Final EIS cannot analyze impacts of cutting the identified existing old growth patches. Absent this analysis, there is no basis for the Forest Service's conclusion.

a. Management and protection of old growth forest on the GWNF

The Forest Service's management of old growth on the GWNF is based on NFMA359 and the 1997 Regional Guidance, Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region ("Regional Guidance").360 The Region and GWNF recognize that old growth is a valuable natural resource worthy of protection, restoration, and management that provides a variety of ecological, social, and spiritual values.361 Old growth is recognized as a wildlife and botanical resource, as well having recreational, research and scientific, educational, and cultural and spiritual values.362

In light of these values, a Desired Condition for the GWNF is "a well-distributed and representative network of large, medium, and small old growth patches is provided over time for biological and social benefits. These patches are expected to be embedded in a forest matrix dominated by mid and late successional forests. Old growth areas are generally interconnected by mature forests."363

Per Regional Guidance and the GWNF Plan, old growth is characterized as Existing Old Growth, Possible Old Growth, and Future Old Growth.364 Possible old growth is defined as forest that meets "preliminary inventory criteria[hellip]based on stands age from current FSVeg data."365 In other words, possible old growth is forest identified through "desktop analysis" using the Forest Service database known as FSVeg; it has not been verified on-the-ground. Existing old growth, on the other hand, is forest that has been determined through a field survey

to meet four criteria related to age, disturbance, basal area, and tree size.366 The old growth field surveys are conducted in accordance with the GWNF Old Growth Survey Protocol.367

During Plan revision for the GWNF, the agency estimated Possible Old Growth, as well as acreage objectives for different old growth types, based on the FSVeg stand database.368 In these estimates, FSVeg forest types were aggregated into old growth forest types, as described in the Regional Guidance, and those stands meeting the minimum age were identified as possible old growth.369 The agency described this as "an initial screen and inventory" only, acknowledging that most of the old growth identified through this process "has not been visited to verify the existence of old growth" and that "[d]uring project implementation those stands in the project are identified as possible old growth will be examined to determine if they meet the four criteria and are therefore considered existing old growth."370 "This inventory [of existing old growth] will be a field survey."371

Based on these estimates of possible old growth, the Forest Service developed a Plan- level management strategy for old growth: to conditionally allow cutting of two types of old growth forest (OGFT 21 and OGFT 25) if project-level analysis demonstrates that the identified existing old growth patch does not contribute to the representation, distribution, and abundance of all specific forest types within the old growth community classifications and the desired condition of the appropriate prescription. 372 Moreover, because the Plan does not specify precise criteria for adequate representation, distribution, and abundance of all specific forest types within the OGFT 21 and OGFT 25 community classifications at the relevant scales (e.g., watershed and compartment), those issues must be considered during plan implementation (i.e., projects).373

This strategy is the basis for Forestwide Standard 85, which provides:

During project planning, inventory any stands proposed for timber harvest for existing old growth conditions using the criteria in Appendix B (Guidance for Conserving and Restoring Old Growth Forest Communities on National Forests in the Southern Region (Forestry Report R8-FR 62, June 1997)).

Any stands in Old Growth Forest Types 1 (Northern Hardwood), 2a (Hemlock-Northern Hardwood), 2b (White Pine-Northern Hardwood), 2c (Spruce Northern Hardwood), 5 (Mixed Mesophytic), 10 (Hardwood Wetland Forests), 22 (Dry and Xeric Oak Forest), 24 (Xeric Pine and Pine-Oak Forest and Woodland), 28 (Eastern Riverfront) that meet the age criteria for old growth will be unsuitable for timber production, regardless of whether they meet the other criteria for existing old growth.

Stands in Old Growth Forest Types 21 (Dry Mesic Oak) or 25 (Dry & Dry-Mesic Oak-Pine) may be suitable for timber harvest. Decisions to harvest these stands would be made after consideration of the contribution of identified patches to the distribution and abundance of the old growth community type and to the desired condition of the appropriate prescription during project analysis.374

The Final EIS for the GWNF Plan supports this approach, explaining "prior to scheduling any silvicultural practices on lands classified as suitable for timber production in OGFT 21 [hellip] and/or OGFT 25, stands are inventoried using the [Regional Guidance] depending on the alternative. Silvicultural practices could proceed after site-specific analysis and disclosure which included a discussion on the old growth characteristics found in the stand(s) of the project area, the effect of the action on these characteristics, and the effect the action would have on the contribution of the area to the Forest's 'old growth' inventory."375

This approach makes sense. While the Forest Plan "establishes direction" for future decisions, it must be "implemented through a series of project-level decisions based on appropriate site-specific environmental analysis and disclosure to assure compliance with the National Environmental Policy Act (NEPA)."376 NEPA requires a detailed, reasonably thorough site-specific analysis of existing old growth and the Project's likely

impacts on them.377

Accordingly, at the project level, the Plan requires (1) site-specific information in the form of old growth field surveys, and (2) analysis of the impacts of cutting down the existing old growth patch given those site-specific characteristics.378 No cutting down of old growth can occur on the GWNF until the Forest Service has gone through these steps and disclosed its information and analysis for public review in the NEPA documents.

The old growth field surveys are a critical foundation for thorough NEPA analysis at the project level.379 Given the notorious unreliability of both stand age and stage type within FSVeg data, actual existing old growth, once inventoried on the ground, is likely to be significantly less than the pool of possible old growth.380 Not only is the FSVeg data not equivalent to an old growth field survey, the data is not even comparable to a rudimentary, rapid field assessment of a site for old growth conditions. The database also contains little or no information on one of the criteria: degree of evidence of human disturbance.

So it is highly unlikely that all the FSVeg-derived estimates of possible old growth acres are actually existing old growth. As the Final EIS acknowledges, "[t]ypically, an estimate of possible old growth that is based on minimum age in a database would overestimate the amount of existing old growth because of the influence of the three additional operational criteria in the definition for existing old growth outlined in the [Regional Guidance.]"381

Indeed, existing old growth is very rare in the Southeast. As the Forest Service has acknowledged, even developing the Regional Guidance was difficult because "so few representatives of old growth conditions exist[.]"382 "Old growth communities are rare or largely absent in the southeastern forest from Virginia south to Florida," perhaps representing only 0.5% of the total forest acreage.383

In light of the rarity of old growth on the Southeastern landscape, the lack of field- verified existing old growth on the GWNF, and the century or two required to replace old growth, NFMA, the Plan, and NEPA require project-level, site-specific analysis for the proposed cutting of any old growth.384 To do otherwise would create the risk that rare old growth on the GWNF could be logged based on a predicted amount of old growth forestwide, only for later discovery that the predictions were inaccurate. This would do irrevocable harm to a resource that cannot readily be replaced.385

b. Neither the Final EIS nor the Draft ROD adequately analyzes impacts on old growth as required by the GWNF Plan, NFMA, and NEPA.

The Final EIS acknowledges that old growth field surveys are required but admits that they have not been done: "At this time, Atlantic has not completed an old growth inventory in accordance to the [Regional Guidance] as required by Forestwide standard FW-85."386 Similarly, the Draft ROD acknowledges that the old growth field inventory "is required by the standard FW-85 to identify existing old growth conditions."387

In an attempt to skirt the requirements of FW-85 and excuse this failure, the Final EIS asserts that Atlantic addressed the "intent" of FW-85 by developing an "estimate of late seral trees using aerial imagery[.]"388 Late seral trees are parenthetically described as "mature forest at climax stage."389 Importantly, the Final EIS does not assert that late seral trees are equivalent or even comparable to existing old growth as defined in Regional Guidance. Nor does it assert that the exercise of identifying late seral trees using aerial imagery is equivalent or even comparable to the old growth field inventory mandated by the Plan. As such, the Final EIS has not satisfied the project-level requirement for a field survey using the GWNF Old Growth Protocol to determine which forest meets the age, disturbance, basal area, and tree size criteria, or produced the information regarding existing old growth that is required for analysis.390 To the contrary, we believe that this exercise does not meet the requirement for field surveys to identify (and then assess) existing old growth in the project area.

In likely recognition of this inadequacy, the Forest Service tried another approach. Relying on FSVeg data, the agency estimated that 81.6 acres of possible old growth from three old growth forest community types would be affected by the ACP project.391 The Final EIS also stated that there would be around 345,000 acres of possible

old growth in these old growth forest community types across the forest in 2020.392 Based solely on these two estimates of possible old growth, the Final EIS concluded: "Given the amount of the impacted possible old growth compared to the amount identified across the entire Forest, it is not likely that there would be any 'substantial adverse effects' to the existing old growth communities on the GWNF."393 This is wholly inadequate for many reasons.

First, the GWNF Forest Plan makes clear that identification and analysis of existing old growth is required for project-level analysis and that estimates of possible old growth are insufficient for project-level analysis. During Plan revision, the agency used those estimates to develop a strategy to manage and protect old growth in accordance with its NFMA obligations. But at the project level, the strategy requires that field inventories of existing old growth be done for every project proposing to cut trees.394 Having failed to complete the surveys, Atlantic has no idea how much existing old growth would be cut down.

Second, because the Final EIS has not identified existing old growth patches, it cannot begin to examine how those particular patches contribute to "the representation, distribution, and abundance of the specific forest type within the old growth community classifications and the desired condition of the appropriate prescription."395,396 The Plan, NFMA, and NEPA require that this site-specific analysis - informed by old growth field surveys - be disclosed in the Draft EIS for public review. It was not. Nor was it even produced in the Final EIS. Without this analysis, this project does not comply with the Plan or substantive NFMA requirements.

Third, the project cannot be approved now based on promises to complete the old growth field surveys and analysis later.397 Nor can the Forest Service wait until it issues the Final ROD to disclose the results of old growth field surveys. "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."398

Fourth, due to the unreliability of FSVeg estimates of possible old growth, the Final EIS argues "[t]herefore, the FS would expect that any existing old growth that would be harvested by ACP activities would likely be less than the [estimates based on possible old growth derived from FSVeg]."399 The Final EIS, however, fails to acknowledge that the same unreliability would also reduce the estimated 345,000 acres of possible old growth across the GWNF. This would then undervalue the impacts of the estimated 82 acres of impacted old growth.

Fifth, the Plan conditionally allows cutting of only two types of old growth forest - OGFT 21 and OGFT 25. Based on FSVeg data, however, the Final EIS estimates that over 30 percent of the possible old growth that would be impacted would be OGFT 24 - Xeric Pine and Pine-Oak Forest and Woodland old growth forest community type.400 Per FW-85, any stands in OGFT 24 "that meet the age criteria for old growth will be unsuitable for timber production, regardless of whether they meet the other criteria for existing old growth."401 All Possible Old Growth stands in OGFT 24 "have been identified as unsuitable for timber production."402 If field review of these stands demonstrates that the stands are correctly identified in forest type and stand age, the stand remains unsuitable.403 Moreover, the Plan clearly provides that "[n]ewly discovered patches which meet the operational criteria for Existing Old Growth communities within this [OGFT 24] type will be managed to retain their old growth character."404

Accordingly, if field surveys confirm the presence of OGFT 24, any proposed removal of old growth forest in these stands would violate the Plan and therefore NFMA. The proposed amendment to FW-85 would not change this.

Sixth, related to old growth and the broader point regarding consistency with Plan management prescriptions, the Final EIS fails to disclose and address proposed tree harvest in land that the Forest Plans classify as unsuitable for timber production. The Draft ROD asserts that "[s]ince the harvesting of trees for the purpose of clearing a

right- of-way for a pipeline can occur on both lands suitable and not suitable for timber production, FW-85 does not prevent the cutting old growth trees for this purpose."405

The Plan, however, does not provide such a blanket allowance for any project to clear a right-of-way for a pipeline. Rather, the Plan makes clear that one must refer to the relevant management prescription direction because "some of the uses have certain restrictions or circumstances related to a suitable use within that management prescription area."406 One must also refer to other overlay direction, such as that for old growth. Considering this Plan direction together, it is clear that the Plan intends to prevent the cutting down of existing old growth patches in OGFT 24. Thus, this project would violate both the old growth field survey requirement and the direction to not cut OGFT 24. The proposed plan amendment does not cure these defects.

Since the Final EIS and Draft ROD no longer propose to place the pipeline route in a newly-designated utility corridor that would be re-allocated to 5C- Utility Corridors, the lands within the right-of-way would remain in their existing management prescriptions.407 Some of those management prescriptions are suitable for timber production; others are unsuitable for timber production. Of the latter, some would allow timber harvest for other resource objectives, which are spelled out in the standard for each management prescription. Given this variability, the Final EIS and Draft ROD must examine whether the relevant management prescription would allow clearing of the pipeline right-of way as an acceptable "other resource objective" and disclose this for public review. But they do not.

For example, on the GWNF, the pipeline corridor is proposed to cross management prescription 7E1- Dispersed Recreation Areas - Not Suitable for Timber Production.408 Predictably, Standard 7E-006 provides that these areas are unsuitable for timber production.409 The standard provides, though, a list of specific activities for which vegetation management activities are allowed:

* To enhance or rehabilitate scenery;
* To improve threatened, endangered, sensitive, and locally rare species habitat;
* To maintain rare communities and species dependent on disturbance;
* To reduce fuel buildups;
* To restore, enhance, or mimic historic fire regimes;
* To reduce insect and disease hazard;
* To control non-native invasive vegetation.
* To provide for public health and safety;
* To meet trail construction and maintenance needs;
* To maintain, enhance, or restore the diversity and complexity of native vegetation;
* To maintain recreation facilities, including roads and trails.410

The standards also provide that "[t]hese lands are classified as unsuitable for timber production. Vegetation management may be accomplished with commercial timber sales as an appropriate method of reducing costs associated with these activities."411 Additionally, salvage of dead and dying trees is allowed where the recreation resource is not impaired by the salvage operation."412

None of the purposes enumerated above indicate that, for management prescription 7E1 areas, trees can be harvested "for the purpose of clearing a right-of-way for a pipeline [hellip] on both lands suitable and not suitable for timber production."413 Moreover, unlike standards for other management prescriptions classified as unsuitable for timber production, the standards for 7E1 do not allow timber "to be cut, sold, or removed" if it is "incidental to the implementation of a management activity not otherwise prohibited."414

As such, neither the Final EIS nor the Draft ROD contains a proper basis for the assertion that trees can be cut for the purpose of clearing a right-of-way for a pipeline. For each management prescription in which Atlantic proposes to clear trees, the Final EIS must address whether timber clearing is permitted by the Plan. 415

Moreover, where the Plan does not allow clearing of trees from the proposed right-of-way, amendments to the Forest Plan would be needed. Of course, this would necessitate additional NEPA analysis and the opportunity for public review.416 Having failed to do so, NEPA is not satisfied and the proposal to cut within certain management prescriptions violates the Plan, as well as NFMA and NEPA.

Lastly, while the agency purports to rely on proposed mitigation measures to reduce impacts to an acceptable level, there appear to be no proposed mitigation measures to address loss of existing old growth.417 Because old growth takes centuries to develop, it is irreplaceable on a human time scale if it is replaceable at all.418 Additionally, no such re- growth could even begin to take place in the right of way until decommissioning, if ever.

In sum, the Final EIS does not include the accurate, high quality information about environmental impacts that NEPA requires and has not addressed information that is plainly relevant to its decision.419 The Final EIS fails to grapple with or even acknowledge relevant scientific information.420 As a result, the Final EIS does not take the requisite "hard look" at the environmental consequences that the ACP project could have on old growth.421 Having failed to do the underlying work needed to inform analysis in the Final EIS, there is no basis in the Final EIS for the assertion that "there would be [no] 'substantial adverse effects' to the existing old growth communities on the GWNF."422 The Forest Service's failure to fully acknowledge the extent and impacts on old growth is arbitrary and capricious in failing "to consider an important aspect of the problem."423 Moreover, the Final EIS is inconsistent with the GWNF Plan and consequently, in violation of NFMA.424

c. The Forest Service is unjustified in adopting the Final EIS.

Moreover, the Forest Service cannot adopt FERC's Final EIS.425 An agency can adopt another agency's Final EIS or portions thereof only if the Final EIS "meets the standards for an adequate statement" under NEPA regulations.426 And as a cooperating agency, the Forest Service can adopt without recirculating the Final EIS of lead agency FERC only after it concludes after an independent review of the Final EIS that its comments and suggestions have been satisfied.427

These conditions are not met here. As with FERC's Draft EIS, the Final EIS lacks requested essential information regarding old growth, including the start and end milepost and acreage impacts on old growth forests according to the GWNF old growth definition.428 The Forest Service requested this missing piece of information in connection with a determination of effects on Regional Forester Sensitive Species (RFSS) because the preliminary draft Biological Evaluation (BE) was incomplete.429 This remains true today. The old growth surveys to assess impacts on existing old growth forests according to the GWNF definition (i.e., forest that has been determined through a field survey to meet four criteria in Regional Guidance related to age, disturbance, basal area, and tree size430) have not been completed.431 (Related to the initial requests, the Final EIS admits that the analysis provided in the draft BE remains incomplete, that surveys regarding GWNF locally rare species remain incomplete, and that an effects determination for RFSS and GWNF locally rare species will not be reflected until the Forest Service's Final ROD.) As detailed above, without the requested information, the Forest Service cannot determine the extent to which existing old growth will be removed, nor can it assess the impacts of that removal. As such, the Forest Service cannot adopt the Final EIS.

2. A proposed amendment to eliminate Plan requirements for Existing Old Growth surveys and analysis violates the 2012 Planning Rule.

As detailed above, the Final EIS and Draft ROD admit that the old growth field surveys are required but have not been done.432 These field surveys and the analysis based on them are the foundation of old growth management and protection for the GWNF. Troublingly, the Forest Service seems to believe that "[i]f Atlantic does not complete the old growth inventory," it can excuse the failure by simply amending the Plan to remove the Plan requirements [.]"433 This is wrong as a matter of law. The 2012 Planning Rule does not allow the Forest Service to amend plans to excuse non- compliance with the Plan and substantive NFMA requirements.

The Forest Service proposes to amend FW-85 by creating a special exception for the ACP project, for which

"possible old growth may be estimated based upon Forest Service forest inventory data [FSVeg]."434 As explained in the Regional Guidance and Plan though, "possible old growth" is, by definition, forest that meets "preliminary inventory criteria[hellip]based on stands age from current FSVEG data."435 So the text of the proposed amendment does not, on its face, change the status quo: for all projects, possible old growth already is identified by stand data in FSVeg. Old growth field surveys are then required to determine: whether possible old growth is actually existing old growth, and if existing old growth is of an old growth forest community type that is entirely protected from cutting or subject to additional analysis before it could be cut.436

It seems that the Forest Service instead intends to eliminate completely the requirement for Existing Old Growth Surveys, which then prevents the required analysis based on those surveys.437 Without such a requirement, the Forest Service would allow Atlantic to cut all old growth forest that stands in the way of the pipeline corridor, access roads, and work areas, without ever needing to identify and then assess the impacts of doing so. This would violate the 2012 Planning Rule, NEPA, and the GWNF Plan in several ways. 438 As such, the Forest Service cannot so amend the GWNF Plan, and the proper analysis must be completed.

a. The proposed amendment is not based on best available science.

The 2012 Planning Rule requires the Forest Service to use "the best available scientific information to inform the planning process [hellip] for amending [hellip] a plan."439 To do so, the Forest Service must determine "what information is the most accurate, reliable, and relevant to the issue." 440 Nothing short of the best, most accurate, most reliable, and most relevant scientific information will satisfy this Rule.

The Draft ROD states that the decision to amend the GWNF Plan was informed by the Final EIS analysis, which it claims used the best available scientific information (BASI).441 The Forest Service's description of the alleged "best available scientific information," however, is both misleading and inaccurate: Databases of old growth stands crossed by ACP are not currently available; therefore, Atlantic determined the miles, acreages, and sizes of trees to be cleared within the pipeline construction and permanent rights-of-way on a desktop analysis using 2015 aerial photography and recent satellite photography. The FS defines old growth as Forest stands that meet one or more of the preliminary inventory criteria from its Regional Guidance. [Citation omitted.] The Forest Service's forest inventory data (FSVeg) was used to estimate old growth presence and to determine the impact on "possible old growth" forests from ACP on NFS lands. It is expected that ACP will complete an old growth inventory in accordance with the Regional Guidance prior to the final ROD. Additional information on old growth is discussed in FEIS in Section 4.4.2 ("Vegetation Communities of Special Concern or Management") and 4.4.8 ("General Impacts and Mitigation on Federal Lands") and 4.8.9.1 ("Forest Service").442

As an initial matter, this statement misstates the definition of old growth, asserting that "[t]he FS defines old growth as Forest stands that meet one or more of the preliminary inventory criteria from its Regional Guidance." That approximates the definition of Possible Old Growth.443 Existing Old Growth is defined as forest that has been determined through a field survey to meet four criteria related to age, disturbance, basal area, and tree size.444 Distinguishing between Possible and Existing old growth is critical when considering what constitutes BASI. After all, if the Forest Service wanted information about possible old growth, FSVeg would, by definition, be the source of that information. 445 For an inventory of actual old growth on the GWNF, however, a field survey to identify existing old growth is BASI. And the GWNF's whole strategy for managing old growth is built around identifying existing old growth through field surveys at the project level.446

The much larger point, though, is that the statement in the Draft ROD ignores an important reality: the GWNF Plan and supporting Final EIS, which were prepared to ensure the GWNF satisfies its substantive NFMA requirements, already identified old growth field surveys as providing the best available scientific information for existing old growth447:

Most of the polygons identified through [the initial inventory of possible old growth] have not been visited to verify

the existence of old growth per the four elements of the criteria. The current inventory is an initial screen and inventory. During project implementation those stands in the project area identified as possible old growth will be examined to determine if they meet the four criteria and are therefore considered existing old growth.448

Based on this analysis, the Plan provides:

Existing, Possible and Future old growth will be identified as described in Appendix B of this Plan and in accordance with Guidance for Conserving and Restoring Old Growth Forest Communities on National Forests in the Southern Region. Currently, little existing old growth has been verified on the ground. However, the amount of Possible and Future old growth is large. Existing old growth, as it is identified, will be managed based on the old growth forest type and the representation of that type in the Existing, Possible and Future old growth inventories. In Northern Hardwood, Hemlock-Northern Hardwood, White Pine-Northern Hardwood, Spruce Northern Hardwood, Mixed Mesophytic, Hardwood Wetland Forests, Dry and Xeric Oak Forest, Xeric Pine and Pine-Oak Forest and Woodland, Eastern Riverfront, Rocky, Thin-Soil Conifer Woodland old growth forest types, any existing old growth will be unsuitable for timber production. In the Dry-Mesic Oak Forest and Dry and Dry-Mesic Oak-Pine old growth forest types, any existing old growth, in areas suitable for timber production, will be evaluated during project analysis to determine its suitability for harvest. If, during project analysis, it can be demonstrated that an identified existing old growth patch does not contribute to the Forest old growth inventory, then the patch could be suitable for timber production and harvest of the patch could occur. The project analysis will include a discussion of the old growth characteristics found in the area, the effect of the action on these characteristics, and the effect the action will have on the contribution of the area to the Forest's old growth inventory.449

Indeed, the Final EIS for this project also recognizes the limitations of FSVeg data regarding Possible Old Growth:

[W]e can estimate the acres of "possible old growth" that would be impacted. It is important to note that age is not the only criteria defining old growth, so this process is not a replacement for field inventory to meet the Regional Guidance. However, it can provide an estimation of the impacts on old growth. Table 4.4.8- 1 displays the results of this analysis.450

If the agency wants to amend this aspect of the Plan, it must show that its reasons for doing so are based on BASI. More generally, the agency must demonstrate that the amended Plan would still comply with its substantive NFMA requirements related to old growth.

Tellingly, the Final EIS does not argue that Atlantic's "desktop analysis" provides better scientific information than old growth field surveys using the GWNF Old Growth Protocol to determine which forest meets the age, disturbance, basal area, and tree size criteria. Nor can it; this same FSVeg information was deemed inadequate for project- level analysis during Plan revision.451

Since the GWNF does not have an inventory of existing old growth, the Plan requires a field survey for existing old growth during planning of any project that proposes to cut timber.452 This field survey is necessary because old growth, by definition, is forest that meets four criteria related to age, disturbance, basal area, and tree size.453 Evaluating these criteria requires a person trained in the GWNF old growth survey protocol to go into the forest, collect data according to approved survey protocols, and then interpret the data.454 This cannot be done by "desktop analysis" that examines aerial photos, satellite imagery, or FSVeg.455 The underlying data does not exist elsewhere. In short, old growth field surveys produce the best available scientific information regarding old growth that exists on the GWNF and the impacts of cutting it.

Because plan amendments must be based on the best, most accurate, most reliable, and most relevant scientific information to justify an amendment, and the proposed amendment was not, it would violate the 2012 Planning

Rule and cannot stand.456

b. The Forest Service incorrectly concludes that substantive NFMA requirements are not "directly related" to the Plan direction being removed by the amendment.

In addition, the Forest Service has improperly concluded that the proposed GWNF Plan amendment to FW-85 does not "directly relate" to the relevant substantive requirements of the National Forest Management Act planning rule, and that therefore the Forest Service need not apply those requirements to the amendments.457

i. The proposed amendment is directly related to substantive requirements of 36 C.F.R. [sect] 219.8.

In the Draft ROD and Final EIS, the only substantive requirement deemed relevant to the proposed amendment is 36 C.F.R. [sect] 219.8(a)(1). 458 This is a requirement that requires forest plans (and amendments) to include components to maintain or restore the ecological integrity of terrestrial ecosystems in the plan area.459 This must include components to maintain or restore structure, function, composition, and connectivity, taking into account (among other things) "contributions of the plan area to the ecological conditions within the broader landscape influenced by the plan area."460

The proposed amendment to FW-85 seeks to remove the requirements for old growth field surveys to identify existing old growth, instead allowing the project to rely on FSVeg estimates of possible old growth. The resulting lack of field survey data then prevents analysis of how the identified existing old growth patches contribute to the representation, distribution, and abundance of all specific forest types within the old growth community classifications and the desired condition of the appropriate prescription.461 This is precisely the analysis that 36 C.F.R. [sect] 219.8(a)(1)(ii) pertains to -the contributions of existing old growth in the pipeline corridor to old growth conditions within the GWNF and the role of old growth in maintaining or restoring ecosystem integrity and ecosystem diversity in the GWNF.462

Yet, as discussed above, the Forest Service concludes in the Draft ROD that "[g]iven the small amount of old growth that could be affected, compared to the amount identified across the entire Forest, I have determined that there would not be any 'substantial adverse effects' to the ecological integrity of the existing old growth communities on the GWNF."463 As detailed above, there is no basis in the Final EIS for this assertion."464 And without a basis, this unfounded conclusion cannot serve as a reason to find that that there is no direct relation between the proposed amendment and the substantive requirements found in 36 C.F.R. [sect] 219.8. Accordingly, the Forest Service must apply the requirements within the scope and scale of the amendment.465

Moreover, the Forest Service failed to even evaluate alternate grounds for finding that a direct relationship exists. The 2012 Planning Rule requires a finding of direct relation "when the proposed amendment would substantially lessen protections for a specific resource or use."466 Here, the proposed amendment would allow old growth to be cut without requiring existing old growth to first be identified or the impacts of doing so to be assessed and disclosed to the public for review. This would gut the management strategy for old growth set forth in the Plan and could prevent the Forest Service from achieving the Desired Conditions, Objectives, Standards, or other components set forth in the Plan.467 Removing the Plan's old growth surveying and analysis requirements would substantially lessen the protections of old growth on the GWNF. Accordingly, the Forest Service must apply the requirements within the scope and scale of the amendment.468

ii. The proposed amendment is directly related to substantive requirements of 36 C.F.R. [sect] 219.9.

The proposed amendment to FW-85 also is directly related to the substantive requirements found in 36 C.F.R. [sect] 219.9(a)(2).469 This requires forest plans (and amendments) to include components to maintain or restore the diversity of ecosystems and habitats throughout the plan area.470 This must include components (among others) to maintain or restore rare terrestrial plant communities.471

As detailed above, existing old growth is very rare in the Southeast. As the Forest Service has acknowledged, even developing the Regional Guidance was difficult because "so few representatives of old growth conditions exist[.]"472 Indeed, "old growth communities are rare or largely absent in the southeastern forest from Virginia

south to Florida," perhaps representing only .5% of the total forest acreage.473

In light of the rarity of old growth on the Southeastern landscape, the lack of field- verified existing old growth on the GWNF, and the century or two required to replace old growth, NFMA, the Plan, and NEPA require project-level, site-specific analysis for the proposed cutting of any old growth.474 The public must also have an opportunity to review and comment on the data and analysis. To do otherwise would create the risk thatrare old growth on the GWNF could be logged based on a predicted amount of old growth forestwide, only for later discovery that the predictions were inaccurate. This would irrevocably harm a resource that cannot readily be replaced and "substantially lessen" the protections of old growth on the GWNF. 475

Because the proposed amendment to FW-85 is directly related to the substantive requirements regarding diversity of plant communities found in 36 C.F.R. [sect] 219.9(a), the Forest Service must apply the requirements within the scope and scale of the amendment.476

iii. The proposed amendment is directly related to substantive requirements of 36 C.F.R. [sect] 219.10.

The proposed amendment to FW-85 also is directly related to the substantive requirements found in 36 C.F.R. [sect] 219.10. 477 This section requires forest plans (and amendments) to include components for integrated resource management to provide for ecosystem services and multiple uses in the plan area.478 To do this, the responsible official must consider relevant uses and values including (among others) aesthetic values, ecosystem service, fish and wildlife species, habitat and habitat connectivity, recreation settings and opportunities, scenery, timber, vegetation, viewsheds, wilderness, and other relevant resources and uses.479

As detailed above, the Region and Forest recognize that old growth is related to the many of the above uses and values. For example, the Final EIS supporting the GWNF Plan and Regional Guidance recognize "old growth forests as a valuable natural resource worthy of protection, restoration, and management that provides a variety of ecological, social, and spiritual values.480 The Regional Guidance identifies old growth as a valuable wildlife and botanical resource, as well having recreational, research and scientific, educational, and cultural and spiritual values."481 In light of these values, a Desired Condition for the GWNF is "a well-distributed and representative network of large, medium, and small old growth patches is provided over time for biological and social benefits. These patches are expected to be embedded in a forest matrix dominated by mid and late successional forests. Old growth areas are generally interconnected by mature forests."482

Here, the proposed amendment would allow old growth to be cut without requiring existing old growth to first be identified or the impacts of doing so to be assessed and disclosed to the public for review.483 This would adversely impact the many forest uses associated with old growth forest. As such, these changes would substantially lessen the protections of old growth on the GWNF. 484 Because the proposed amendment to FW-85 is directly related to the substantive requirements regarding diversity of plant communities found in 36 C.F.R. [sect] 219.10(a), the Forest Service must apply the requirements within the scope and scale of the amendment.485

F. THREATENED, ENDANGERED, AND OTHER SPECIES OF CONCERN

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1. The final EIS omits crucial information about the project's impacts on threatened and endangered species and the mitigation necessary to protect those species in violation of NEPA and the ESA.

The final EIS continues to omit crucial information regarding impacts on threatened and endangered species. Conservation groups made extensive, detailed comments on the draft EIS's analysis of potential impacts on threatened, endangered, and rare species in their April 6, 2017, comments or the Draft EIS submitted to FERC

and the Forest Service.486 Like the draft, the final EIS repeats the conclusion that multiple listed species may be affected, but fails to provide and analysis of the concrete mitigation measures that should be taken to ensure species protection. The Final EIS and draft ROD based on it contain all violations discussed in Conservation Groups' draft EIS comments. The identification of these measures and the assessment of their ability to protect listed species is the purpose of consultation and the preparation of a biological opinion under section 7 of the Endangered Species Act. Here, FERC only initiated formal consultation on July 21, 2017, the same day that the final EIS was released.

"[A]ction agencies must give great weight to the Services' biological opinion before deciding on a proposed action."487 To ensure that this is done, and that recommended mitigation measures can be incorporated into the action, the Fish and Wildlife Service has explained: "At the time the Final EIS is issued section 7 consultation should be completed. The Record of Decision should address the results of section 7 consultation."488 Here, consultation was not even initiated until July 21, 2017. This is precisely the type of "environmentally blind decision-making NEPA was enacted to avoid."489 The final EIS's insistence that this information will be provided in future documents is not a substitute for an adequate NEPA review.490 This comprehensive failure to analyze and disclose impacts to species and possible mitigation measures in the final EIS violates NEPA.491

Moreover, according to the Draft ROD, "[standard] TE07 is identified in the FEIS as a standard that needs modification based on results of biological surveys completed since the DEIS."492 The proposed amendment to Monongahela National Forest plan standard TE07 was not considered in the draft EIS.493 A notice was published in the Federal Register on June 5, 2017, giving public notice of the proposed amendment of three standards not included in the Draft EIS.494 TE07 was not among these. Thus, the Forest Service failed to give adequate public notification of this proposed amendment.495

The final EIS speaks for itself with regard to the defects in its endangered and threatened species analysis. These defects include:

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* In general, the final EIS acknowledges that, project-wide, there remain outstanding biological surveys and that FERC and the Forest Service have not completed consultation with FWS.496
* The Fish and Wildlife Service will also "re-evaluate" the Forest Service's determination for the species after the "pending survey results and finalized conservation measures."497
* Finally, the final EIS includes a table (Table 4.7.1-1) listing species with potential to occur in the ACP and SHP areas. The "Survey Status" is listed as "pending" for over half the species listed.498
* All Bat Species and Madison Cave Isopod: With respect to general conservation measures for all bat species and the Madison Cave Isopod, the final EIS noted that surveys were pending.499 To remedy this problem, the final EIS states that Atlantic would perform additional "investigations in 2018 and 2019 to identify and/or verify the locations of voids to supplement mitigation planning [after] trees have been cleared from the construction right-of-way."500

The Final EIS also provides a species-by-species explanation of the incomplete data and uncertainty regarding species specific impacts, including:

* Virginia Big-eared Bat: Surveys remain to be completed for six suitable hibernacula, 46 acoustic site surveys, 60.7 acres of pedestrian hibernacula, 11 potential hibernacula locations, six mist-net sites on the MNF, and eight acoustic sites on the GWNF.501 Atlantic is also currently consulting with MNF and GWNF regarding revegetation

and seeding requirements.502 Based on this incomplete data, the final EIS concludes that its may affect, not likely to adversely affect determination for Virginia big- eared bat is tentative[mdash]"FERC and FWS will reevaluate this determination upon receipt of pending survey results and proposed conservation measures."503
* Gray Bat: With respect to the gray bat, the final EIS recognizes that additional information is necessary in order to document an expansion of an individual gray bat's foraging range in Nottoway County.504 Surveys also remain to be completed at 2 acoustic sites in Bath County, VA and 8 acoustic sites on the GWNF.505 Again, based on this incomplete data, the final EIS concludes that the may affect, not likely to adversely affect determination for gray bat is tentative[mdash]"FERC and FWS will re-evaluate this determination upon receipt of pending survey results and proposed conservation measures."506

* Indiana Bat: Surveys remain to be completed at 80 acoustic sites, 9 mist-net sites, 23 suitable hibernacula sites, 210.0 acres of pedestrian hibernacula, 49 potential hibernacula, 92.4 acres of potential roost trees, six mist-net sites in the MNF, and 8 acoustic sites on the GWNF.507 Based on this incomplete data, the Final EIS concludes that "ACP and SHP may affect the Indiana bat and are likely to adversely affect the Indiana bat."508
* Northern Long-eared Bat: The final EIS recognizes that "more research is needed to determine where the bulk of the population is over-wintering on the [affected] landscape."509 Surveys not yet completed include 113 acoustic sites and 11 mist net sites in the SHP and ACP survey areas, 23 sites for suitable hibernacula, 210 acres of pedestrian hibernacula, 49 potential hibernacula locations, 92.4 acres of potential tree surveys, a survey of the total acreage of potential occupied and suitable habitat that may be affected by construction, and six sites in the MNF and eight acoustic sites on the GWNF remain to be surveyed.510 Moreover, the Final EIS notes that Atlantic is still consulting with FWS and the Forest Service to finalize conservation measures.511 Based on this incomplete data, the final EIS concludes that the may affect, not likely to adversely affect determination is tentative[mdash]"FERC and FWS will re-evaluate this determination upon receipt of pending survey results and proposed conservation measures."512

* Madison Cave Isopod: The current population size of the Madison Cave Isopod is not known.513 Accordingly, the final EIS notes that "the FWS is unable to quantify the potential incidental takes of this species. This information is required to inform the Biological Opinion and complete section 7 consultation."514 The final EIS states that pending results of the above mentioned missing data, "additional conservation measures may also be required by the FWS to mitigate impacts on this species."515
* James Spinymussel, Yellow Lance, and Green Floater: For each species, the final EIS notes that "[o]n ACP, final survey results for the [species] are pending 2017 surveys[hellip]".516
* Rusty Patched Bumble Bee: The final EIS states that "Atlantic continues to coordinate with the appropriate agencies to identify seed mixes and [restoration] practices and will provide a revised plan."517
* Small Whorled Pogonia and Buffalo Clover: For each species, the final EIS notes that "[o]n ACP, final survey results for the [species] are pending 2017 surveys[hellip]"518 The Service also notes that "pending concurrence from the FWS, [a 500- acre mitigation site] would be monitored and managed for 5 years to enhance the viability of the running buffalo clover population[hellip]".519 Atlantic continues to work with the Service to develop a mitigation plan for both the small whorled pogonia and the running buffalo clover.520 Moreover, the "[Forest Service] has not concurred with Atlantic's determination that the National Forest populations of small whorled pogonia would not be adversely affected"521 and is waiting for information from Atlantic to determine if mitigation measures will be effective."522 Based on this incomplete data, the final EIS concludes that "FERC and FWS will re-evaluate [their likely to adversely affect] determinations upon receipt of pending survey results and proposed conservation measures."523
* Lastly, the final EIS addresses Regional Foresters' Sensitive Species present on the George Washington and Monongahela National Forests. The Forest Service states that "[t]he BE is still in draft form and some field surveys are yet to be completed. Surveys are ongoing and an effects determination for RFSS will be reflected in the FS' Final ROD."524

As the foregoing statements make clear, site-specific mitigation plans remain incomplete and may not be

finalized until 2018 or 2019 after field surveys are finished. Moreover, many of the final EIS's conclusions regarding adverse impacts are tentative pending the completion of surveys and the identification and evaluation of mitigation measures. These defects violate NEPA's obligation to thoroughly investigate the impacts of the proposed pipeline project and evaluate the effectiveness of mitigation measures in the EIS process. And likewise, these defects also violate Section 7 of the Endangered Species Act.

2. The Forest Service violated NFMA when it concluded that amendment of standard TE07 does not "directly relate" to substantive requirements of the forest planning rule.

In addition to the NEPA violations discussed above, the Forest Service has improperly concluded that the proposed Monongahela National Forest plan amendment to standard TE07 does not "directly relate" to the relevant substantive requirements of the National Forest Management Act planning rule, and therefore the Forest Service need not apply those requirements to the amendments.525 In doing so, the Forest Service has violated NFMA, 16 U.S.C. [sect] 1604, and its implementing regulations.

In the draft ROD, the Forest Service states that it has determined that the EIS "meets the requirements of the NEPA, Council on Environmental Quality (40 CFR 1500-1508 and Forest Service regulations (36 CFR Part 220)."526 40 C.F.R. [sect]1506.3(c) provides that a cooperating agency may adopt the environmental impact statement of a lead agency without recirculating only when, "after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied." The Forest Service's assertion in the draft ROD that the final EIS provides sufficient evidence to support its decisions is impossible to reconcile with the numerous statements in the final EIS itself that make clear that the analysis of impacts to threatened and endangered species and other sensitive species is incomplete or postponed.

Nonetheless, the Forest Service has approved project-specific modification of standard TE07, relating to issuance of special use permits in threatened, endangered, and proposed species habitat.527 The Acting Regional Forester found one substantive requirement of the planning rule to be relevant to the amendment of this standard. 36

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1. [sect] 219.9(b) requires the plan to include "species-specific plan components, including standards and guidelines" in order to provide ecological conditions necessary to: contribute to recovery of federally listed threatened and endangered species,[hellip]within the plan area."528

Citing the "best available scientific information" and the final EIS effects analysis performed, and the incorporation of mitigation measures incorporated into the modified standard via the COM Plan, the Acting Regional Forester concluded that the amendment "will not cause substantial long-term adverse effects, nor a substantial lessening of protections, to [the northern long-eared bat]."529 Therefore, she determined that the substantive requirement "is not 'directly related' to the LRMP amendment, and that this rule provision need not be applied."530 However, because of the defects in the final EIS, the Forest Service has not applied the "best available scientific information" in reaching this decision. Furthermore, the conclusion that the amendments will not result in substantial adverse effects and/or substantially lessened protections for the northern long- eared bat is unsupported by the record.

3. The Forest Service has not adequately considered the impacts of the proposed pipeline on Management Indicator Species in violation of NFMA.

Under the NFMA, national forests must be managed to provide for wildlife and fish and to provide for the diversity of plant and animal communities, among other purposes.531

To implement this direction, the 1982 NFMA regulations instructed that fish and wildlife habitat be managed to maintain viable populations of the native vertebrate species existing within the forest.532 A viable population was defined as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.533

The regulations further required the identification and monitoring of Management Indicator Species, including but not limited to MIS representing the following categories: species with special habitat needs, major biological communities, and water quality.534

The 2012 forest planning regulations set forth a different framework to address similar themes. Plans must provide for ecological sustainability, including to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area.535 The agency takes an ecosystem and species-specific approach to maintaining plant and animal diversity and the persistence of native species in the plan area.536 Thus, plans must maintain or restore the diversity of ecosystems and habitat types throughout the plan area, including key characteristics of terrestrial and aquatic ecosystems, and rare aquatic and terrestrial communities.537 The regulations, however, recognize that in some cases species of concern could fall through the cracks of an ecosystem- and habitat- based approach. Therefore, when providing for diversity at the ecosystem level alone is not sufficient to maintain a viable population of certain species of conservation concern, the plan must provide specific, species-level direction for maintaining or contributing to the ecological conditions needed to maintain viable populations of such species.538 Focal species and other ecological conditions are monitored to assess and ensure ecological integrity, ecosystem diversity, and species viability.539

The GW Forest Plan, revised according to the 1982 regulations and now governed by the 2012 regulations, implements these NFMA and regulatory authorities through plan direction for ecological systems or ecosystem diversity and for species diversity (including but not limited to direction for MIS, threatened, endangered, Sensitive, and Locally Rare species). The Monongahela Forest Plan, also revised according to the 1982 regulations and now governed by the 2012 regulations, implements these authorities through plan direction for threatened and endangered species and for wildlife and fish (including Sensitive species and MIS).

Neither the final EIS nor the draft ROD, however, adequately address the effects of the pipeline project on these forests' Management Indicator Species, Sensitive or Locally Rare species, or other species of viability concern.540 For example, the FEIS inadequately considers the effects of tree clearing and forest fragmentation on the MIS Cerulean Warbler and other declining species which also require large, intact patches of mature forest. In another example, the final EIS inadequately considers the impacts of erosion, sedimentation, potential landslides, and other soil and water impacts to MIS Brook Trout and other vulnerable aquatic species with similar habitat requirements. While the final EIS admits there may be some effects on these species, the final EIS relies on the COM Plan to mitigate impacts, despite the fact that the COM Plan is incomplete, therefore, the effects analysis is incomplete and the actual effects on species diversity and viability are unknown. It is our understanding that surveys within the project area have not even been completed for MIS, Sensitive, and other rare or viability concern species, much less an analysis of effects. There is no analysis (at least not that we have been able to find) that considers the population trends, within the GW and Monongahela national forests, of MIS, Sensitive species, and other species of viability concern and, with that context, considers the project's effects on the species' viability within each forest, including species numbers and distribution. In a supplemental EIS, the Forest Service must fully analyze the pipeline's effects on: MIS; on the suites of species which MIS represent; on Sensitive and Locally Rare species; and on other species of viability concern. And the agency must squarely assess whether and how these effects impair its ability to meet its NFMA, regulatory, and forest plan obligations regarding MIS, ecosystem diversity, species diversity, and species viability.541

G. Access Roads

The Conservation Groups have submitted comments on flaws and inadequacies in analysis of impacts associated with reconstruction work of Forest Road 281, which is within an eligible recreation river corridor.542 Relatedly, the Conservation Groups also have submitted comments on flaws and inadequacies in analysis of impacts associated with construction of an access road through Browns Pond Special Biological Area.543 These inadequacies remain in the final EIS, and the Forest Service's Draft ROD cannot stand on it. Moreover, the proposed amendment of GWNF standard 2C3-015 violates NFMA and the 2012 Planning Rule.

1. Neither the final EIS nor the draft ROD adequately analyzes impacts associated with Access Road Number 36-016.AR1/Forest Road 281 as required by the GWNF Plan, NFMA, and NEPA.

As with the draft EIS, the final EIS also omits any meaningful discussion of the impacts of the Proposed Amendment to management prescription 2C3, which would allow for major reconstruction of existing Forest Road 281, an Eligible Recreation River Corridor associated with the Cowpasture River.544 This proposed access road would be part of the same road that would cross the southern boundary of the Browns Pond Special Biological Area, discussed below. This prescription means that the Cowpasture River, as well as the one-quarter-mile-wide corridors on either side of the river, is eligible to be part of the National Wild and Scenic Rivers System and is managed to protect "outstandingly remarkable values" pursuant to the requirements of the Wild and Scenic Rivers Act of 1968.545 The Cowpasture River is also designated by the Forest Service as a Priority Watershed,546 and the federally endangered James spinymussel inhabits the portion of the river associated with the 2C3 corridor through which the access road would pass.547

In addition to its eligibility for the federal National Wild and Scenic Rivers System, the Virginia Department of Environmental Quality (DEQ) once nominated the segment of the Cowpasture River that includes the corridor that would be affected by the Atlantic Coast Pipeline for an Exceptional State Waters Designation, also known as a Tier III designation.

DEQ's staff site visit summary for the Cowpasture River concluded that the nominated segment satisfies the criteria for an exceptional state waters designation, noting that it is "extremely rare to find such a large stream with so little anthropogenic stress in Virginia" and that the Cowpasture River is "literally exceptional."548

Despite the extraordinary qualities of the Cowpasture and the likelihood of degradation from construction of an access road, the final EIS does no more than mention this proposed access road, document the information that Atlantic has not provided, and express "concerns" about the road:

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* "In a letter dated April 28, 2017, the FS requested additional information in order to make a final determination on impacts from the ACP. To date, Atlantic has not provided the additional information to the FS."549
* "In addition, we note a discrepancy in the acreages of construction and operation impacts from the access road for Brown's Pond SBA in table E-1 Access Roads for the ACP and SHP, and table 4.4.2-1 filed on May 8, 2017. Atlantic contends that it is not proposing construction or reconstruction of FR 281. However, the FS has expressed concern that the existing access road may not be able to accommodate the equipment."550
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"Road construction or reconstruction is allowed to improve recreational access, improve soil and water, salvage timber or protect property, or public safety. Atlantic proposes the use of FR 281 as a long-term access road within this Rx 2C3 area; however, the existing condition of the road and the need for reconstruction remains a concern of the FS for the potential impacts on the Browns Pond SBA."551

Because Atlantic did not provide the requested information, the final EIS does not (and cannot) analyze the issues. Instead, the final EIS requests that Atlantic provide the information later:

"Due to the need for clarification on the extent of improvements and associated impacts related to access road 36-016.AR1, we recommend that:
As part of its Implementation Plan (recommended Environmental Condition No. 6), Atlantic should file with the Secretary, for review and written approval by the Director of OEP, and the FS for review and concurrence, detailed mapping of the existing conditions and proposed improvements to access road 36-016.AR1, including digital data, a description of the construction and operation impacts, including impacts on the adjacent vegetation communities, potential pond crossings identified in appendix K of the EIS, GWNF locally rare species located downslope, and identify the conservation measures that would be implemented to mitigate potential impacts.552 This is not mitigation; it is a request for additional information to be provided sometime in the future. Without any discussion or acknowledgment of the above, the Draft ROD concludes: "[w]ith incorporation of appropriate mitigation, the reconstruction of FR 281 within the Rx 2C3 area would not substantially affect the outstandingly remarkable values associated with the Cowpasture River Segment B (see FEIS, Section 4.8.9), that include Class A-distinctive for fish and wildlife values and for historic and cultural values, Class B-common for scenic values and recreational values, and Class C-minimal for geologic values.553

NEPA, however, requires that "environmental information is available to public officials and citizens before decisions are made and before actions are taken."554 As such, the Final EIS fails to satisfy NEPA's requirements to scrutinize the impacts of the project and assess the effectiveness of proposed mitigation.555 Moreover, any attempt to permit the road reconstruction without this information and the determination required by the forest plan is inconsistent with the plan, in violation of the NFMA's consistency provision, 16 U.S.C. [sect] 1604(i).
2. Neither the final EIS nor the draft ROD adequately analyzes impacts associated with Access Road Number 36-016.AR1/Forest Road 281 on Browns Pond Special Biological Area.

While the proposed plan amendment focuses on the management prescription area for Eligible Recreation River Areas, the Forest Service has also expressed particular concern about the expansion of Forest Road 281 into access road 36-016AR1 along the southern boundary of the Browns Pond Special Biological Area (Management Prescription 4D) and within the Cowpasture River Priority Watershed.556 The access road by Browns Pond SBA is part of the same access road that would cross through the Eligible Recreation River Corridor for the Cowpasture River, discussed above. SBAs like Browns Pond "serve as core areas for conservation of the most significant and rarer elements of biological diversity identified to date on the Forest."557

Road construction in these areas is only permitted "after full consideration of effects on the rare community and associated species and if there are no adverse impacts on threatened or endangered species." As such, SBAs are "unsuitable" for new utility corridors or rights-of- way.558 Located on Tower Hill Mountain, Browns Pond is a montane depression wetland in karst topography. Montane depression wetlands are rare natural wetlands, and Browns Pond features rare plants, multiple sinkholes, and a cave that provides habitat for special cave fauna.

Construction of the proposed access road across the southern boundary of Browns Pond SBA would put the pond and associated sinkholes and caves in the SBA at high risk. Further, one section of the access road would drain toward Browns Pond, jeopardizing the flora and fauna found there.

As discussed above in the Water Resources and Aquatic Life section of these comments, the analysis presented in the final EIS for the Brown's Pond SBA epitomizes the defects in the Forest Service's decision to release a draft ROD.559 Atlantic has yet to respond to the agency's request for information about its plans to expand an access road in the Brown's Pond SBA, the likely impacts of the proposed expansion, the location of pond crossings, and the mitigation measures Atlantic proposes to minimize those impacts.560 As such, the Forest

Service has released a draft ROD without understanding what the impacts are and whether mitigation will minimize those impacts to an acceptable level for the rare pond community in the Brown's Pond SBA.

The draft EIS concluded that as of the time of issuance, "Atlantic ha[d] not provided sufficient justification to the GWNF to support constructing and maintaining a new permanent road at this location."561 The draft EIS therefore included a request that Atlantic submit to the Commission and the GWNF "further justification" for the proposed access road, including a detailed explanation as to why existing roads cannot be used to support construction and operation of the pipeline.562 As with other important missing information discussed in these comments, the Commission's request that Atlantic submit this information "prior to the close of the draft EIS comment period" does not allow for public comment.563

Again, this information has not been provided and these concerns have not been addressed.564 The Final EIS does not assess the necessity of constructing a road at Browns Pond and the impacts to the area. Without that information, the Forest Service cannot make an informed decision and the public cannot meaningfully comment on impacts to this rare and important Special Biological Area. Moreover, any attempt to permit the road crossing without this information and the determination required by the forest plan is inconsistent with the plan, in violation of the NFMA's consistency provision, 16 U.S.C. [sect] 1604(i).

3. The Forest Service is unjustified in adopting the Final EIS.

Given the above inadequacies, the Forest Service cannot adopt FERC's Final EIS.565 An agency can adopt another agency's Final EIS or portions thereof only if the Final EIS "meets the standards for an adequate statement" under NEPA regulations.566 And as a cooperating agency, the Forest Service can adopt without recirculating the Final EIS of lead agency FERC only after it concludes, after an independent review of the Final EIS, that its comments and suggestions have been satisfied.567

These conditions are not met here. As with FERC's Draft EIS, the Final EIS lacks requested essential information regarding FR 281.568 As detailed above, without the requested information, the Forest Service cannot analyze the impacts. As such, the Forest Service cannot adopt the Final EIS.

4. The proposed amendment to exempt Access Road Number 36- 016.AR1/Forest Road 281 for the ACP project violates the 2012 Planning Rule.

The Forest Service proposes to amend GWNF standard 2C3-015 to allow reconstruction of FR 281 for the Atlantic Coast Pipeline project.569 Doing so, however, would violate the 2012 Planning Rule.

a. The proposed amendment is not based on best available science.

The 2012 Planning Rule requires the Forest Service to use "the best available scientific information to inform the planning process [hellip] for amending [hellip] a plan."570 To do so, the Forest Service must determine "what information is the most accurate, reliable, and relevant to the issue." 571

Extensive review and work went into revising the GWNF Plan in order to satisfy the GWNF's NFMA obligations.572 Standards were developed for Special Biological Areas such as

Browns Pond SBA and Eligible Recreation River Areas.573 Neither the draft ROD nor the Final EIS identify what information they are relying on to justify reconstruction of Access Road Number 36-016.AR1. Nor do these documents explain why this information would be more accurate, reliable, or relevant to the issue, i.e., BASI.

Because plan amendments must be based on the best, most accurate, most reliable, and most relevant scientific information to justify an amendment, and the proposed amendment was not, it would violate the 2012 Planning Rule and cannot stand.574

b. The Forest Service incorrectly concludes that substantive NFMA requirements are not "directly related" to the Plan direction being removed by the amendment.

In addition, the Forest Service has improperly concluded that the proposed amendment does not "directly relate" to the relevant substantive requirements of the National Forest Management Act planning rule, and that therefore the Forest Service need not apply those requirements to the amendments.575

i. The proposed amendment is directly related to substantive requirements of 36 C.F.R. [sect] 219.8.

The only substantive requirement deemed relevant to the proposed amendment is 36 C.F.R. [sect] 219.10(b)(v).576 This requires forest plans (and amendments) to protect rivers found eligible or determined suitable for the National Wild and Scenic River system.577 As discussed above, the final EIS and draft ROD conclude that because of unspecified mitigation, the amendment "would not substantially affect the outstandingly remarkable values associated with the Cowpasture River Segment B (see FEIS, Section 4.8.9), that include Class A-distinctive for fish and wildlife values and for historic and cultural values, Class B-common for scenic values and recreational values, and Class C-minimal for geologic values."578 Because this is unsupported by the Final EIS, it is improper to find that there is no direct relation.

Moreover, the Forest Service failed to even evaluate alternate grounds for finding that a direct relationship exists. The 2012 Planning Rule requires a finding of direct relation "when the proposed amendment would substantially lessen protections for a specific resource or use."579 As such, the proposed amendment violates the 2012 Planning Rule.

ii. The proposed amendment is directly related to substantive requirements of 36 C.F.R. [sect][sect] 219.8, 219.9, and 219.10.

Eligible Recreation River Corridors include rivers that are eligible for the National Wild and Scenic River System under the recreational river designation as well as a corridor on each side of the waterbody. For river segments that are eligible for designation, their outstandingly remarkable values and free flowing conditions that made them eligible are maintained. The eligible portions of these rivers and the corridors are managed to meet the requirements of the Wild and Scenic Rivers Act of 1968.

Here, the Forest Service proposes to amend the GWNF Plan to allow an access road associated with ACP to be located within the 2C3 Management Prescription associated with the Cowpasture River Segment B, which is an eligible Recreational river. Current recreation use consists of fishing, canoeing, tubing, and swimming by adjacent landowners and the public along tracts owned by the FS. Public access is limited. Per appendix D of the EIS for the GWNF Forest Plan Revision (2014), the eligibility ratings for the Cowpasture River Segment B are: Class A-distinctive for fish and wildlife values and for historic and cultural values; Class B- common for scenic values and recreational values; and Class C-minimal for geologic values.580

Given these values and attributes, the proposed amendment directly relates to NFMA's substantive requirements regarding:

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* related to ecosystem integrity, including but not limited to protection of water quality, water resources, and riparian areas581;
* Diversity of plant and animal communities, including ecosystem diversity582; and
* Integrated resource management to provide for ecosystem services and multiple uses in the plan area, including but not limited to aesthetic values, ecosystem services, fish and wildlife species, habitat and habitat connectivity, recreation settings and opportunities, scenery, and viewsheds, and other relevant resources and

uses.583

Moreover, the GWNF Plan permits road construction or reconstruction through this prescription only for specific enumerated purposes: to improve recreational access, improve soil and water, to salvage timber, or to protect property or public safety.584 The Atlantic Coast Pipeline serves none of these specific purposes. Accordingly, the proposed amendment substantially lessens the protection of this area.

Because the proposed amendment to 2C3-015 is directly related to the substantive requirements regarding diversity of plant communities found in 36 C.F.R. [sect][sect] 219.8, 219.9, and 219.10, the Forest Service must apply the requirements within the scope and scale of the amendment.585

CONCLUSION AND REQUEST FOR RELIEF

For the forgoing reasons, the Conservation Groups request that the Forest Service address and correct all deficiencies discussed in this Objection and supporting materials. Specifically, the Groups request that the Forest Service withdraw the draft Record of Decision and issue a new decision denying the permit application, based on impacts to national forest lands and resources and on the availability or likely availability of reasonable alternatives that avoid such impacts. If, instead, the Forest Service still insists on further considering and permitting this project, the agency must: withdraw the draft ROD; withdraw its approval and adoption of the current FEIS; make changes to the project necessary to comply with all applicable standards; and prepare and circulate a supplemental EIS that addresses and rectifies all deficiencies described in this Objection and supporting materials (or work with FERC to prepare and circulate such a supplement). As required by the NEPA implementing regulations, any supplemental EIS must be offered in draft form for public comment before being finalized.

Respectfully submitted,

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