EXHIBIT A

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November 12, 2010

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

Re: Tennessee Gas Pipeline Company, Docket No. PF10-23-000
Northeast Upgrade Project
Response to Notice of Intent to Prepare an Environmental Assessment and Request for Comments on Environmental Issues

Dear Ms. Bose:

On behalf of the New Jersey Highlands Coalition, the New Jersey Chapter of the Sierra Club, the Delaware Riverkeeper Network, and Save the Park, we submit the following comments on the scope of the Environmental Assessment ("EA") to be prepared by the Federal Energy Regulatory Commission ("FERC") with respect to the Northeast Upgrade Project (the "Project") proposed by Tennessee Gas Pipeline Company ("TGP").

The Project threatens to disturb pristine open space in the New Jersey Highlands region. The Highlands region is important both ecologically and economically as it provides clean drinking water to over 5.5 million people and to key industries such as food processing and pharmaceuticals. The Highlands is one of the last remaining landscapes of contiguous forest, threatened and endangered species habitat, and breathtaking vistas in New Jersey, which underscores the need for FERC to seriously examine all primary, secondary, and cumulative impacts that would result from the Project.

The federal government acknowledged the exceptional value of Highlands resources and the urgent need for their preservation in 2004 when Congress passed the Highlands Conservation Act.[1] The Act "recognize[s] the importance of the water, forest, agricultural, wildlife, recreational, and cultural resources of the Highlands region, and the national significance of the Highlands region to the United States."[2] The New Jersey Legislature also recognized the significance of the Highlands and afforded special protection to the region and its resources in

[1] Highlands Conservation Act, Pub. L. No. 108-421, 118 Stat. 2375 (2004).
[2] *Id.* § 2.

2004 with the passage of the Highlands Water Protection and Planning Act.[3] The Act created the Highlands Water Protection and Planning Council and the Regional Master Plan to ensure resource-availability-based planning would be used in the Highlands to combat sprawl and the depletion of water quality and quantity.[4] This Project will not only significantly impact the critical resources of the Highlands region, but also High Point State Park, the Appalachian National Scenic Trail ("AT"), and the Delaware Water Gap National Recreation Area ("DWGNRA").

Furthermore, the Project, and others like it, fit into a larger picture of exploding shale gas development in the Marcellus Shale region. Records maintained by the Pennsylvania Department of Environmental Protection show that drilling of wells in the Marcellus Shale increased by nearly 400 percent between 2008 and 2009, from 195 wells to 768 wells.[5] The increased development is not limited to the drilling of wells. FERC has reported that 5.6 billion cubic feet per day of pipeline capacity was constructed in the Northeast in 2008 and 2009, and an additional 1.2 billion cubic feet per day will have been constructed in the region by January 2011.[6] According to FERC, "[m]uch of the new pipeline capacity in the area is targeted at improving the access of shale gas to markets."[7] In fact, TGP itself acknowledges that "th[is] Project will increase natural gas delivery capacity in the region by approximately 636,000 Dth/day…[and] will also provide access to natural gas supplies from the Marcellus Shale supply area."[8] Thus, the proposed Project is both a product of the development of the Marcellus Shale and a likely catalyst for further gas development. The impacts of the Project cannot be understood apart from the totality of the past, present, and reasonably foreseeable future actions associated with Marcellus Shale development.

These comments begin by calling FERC's attention to recent and ongoing action by the Delaware River Basin Commission ("DRBC") that call into question the necessity of this Project. The comments next address the need for a full Environmental Impact Statement ("EIS") to assess this Project's environmental impacts. FERC must evaluate all impacts the Project will have on the resources along the right-of-way ("ROW"), the ROW buffer, access roads, and any secondary and cumulative impacts that will result from project construction. Next, these comments identify crucial matters not listed in the October 8, 2010 Notice of Intent to Prepare an Environmental Assessment (the "Notice of Intent") that FERC must assess.[9] Finally, the

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[3] Highlands Water Protection and Planning Act, N.J. Stat. Ann. §13:20 (2003).

[4] *Id.* §§ 13:20-4, 13:20-8 (2003).

[5] *See* Bureau of Oil & Gas Mgmt., Pa. Dep't of Envtl. Prot., *Wells Drilled in 2008* (Dec. 31, 2008), http://www.dep.state.pa.us/dep/deputate/minres/oilgas/BOGM%20Website%20Pictures/2008/2008%20Wells%20Drilled.jpg; Bureau of Oil & Gas Mgmt., Pa. Dep't of Envtl. Prot., *Wells Drilled in 2009* (Jan. 25, 2010), http://www.dep.state.pa.us/dep/deputate/minres/oilgas/BOGM%20Website%20Pictures/2009/2009%20%20Wells%20Drilled.jpg.

[6] Fed. Energy Regulatory Comm'n, *Winter 2010-11 Energy Market Assessment* 10 (Oct. 21, 2010), http://www.ferc.gov/market-oversight/mkt-views/2010/10-21-10.pdf.

[7] *Id.*

[8] Letter from Jacquelyne M. Rocan, Senior Counsel, Tennessee Gas Pipeline Company, to Kimberly D. Bose, Secretary, Fed. Energy Regulatory Comm'n on Request to Use Pre-Filing Procedures 3 (July 6, 2010).

[9] Fed. Energy Regulatory Comm'n, Docket No. PF10-23-000, Notice of Intent to Prepare an Environmental Assessment for the Planned Northeast Upgrade Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings (Oct. 8, 2010) [hereinafter "Notice of Intent"].

comments address the issues that FERC must consider within the seven categories of potential impacts listed in the Notice of Intent.

I. FERC Must Not Approve the Project Before the DRBC Takes Further Action Regarding Shale Gas Development.

The Project is a major component of TGP's plan for accessing and distributing gas extracted from the Marcellus Shale. TGP has negotiated twenty-year contracts with two Marcellus Shale natural gas producers, Chesapeake Energy Marketing, Inc., a wholly owned subsidiary of Chesapeake Energy Corporation, and Statoil Natural Gas LLC, a wholly owned subsidiary of Statoil, both natural gas shippers.[10] TGP will allocate 100 percent of the Project's capacity to gas purchased under these contracts, meaning that the pipeline will only carry gas produced through hydraulic fracturing in the Marcellus Shale region.[11]

Currently, DRBC is drafting specific regulations that will govern natural gas development in the Delaware River watershed and, pending its final adoption of these regulations, DRBC has placed a moratorium on all production gas wells and some exploratory wells.[12] DRBC will not release draft regulations until November or December of this year at the earliest, after which there will be a public comment period and two public hearings.[13] It is not likely that DRBC will be able to adopt final regulations until its May 2011 meeting.

Meanwhile, congressional representatives with constituencies in the Delaware River watershed have called for a cumulative impact study on hydraulic fracturing in the Marcellus Shale to be prepared by the DRBC and the US Geological Survey.[14] Funding for the study is awaiting congressional approval in the federal budget.[15] Environmental organizations throughout the Delaware River watershed, including the Highlands Coalition and the Delaware Riverkeeper Network, have called on the DRBC to defer any approvals of natural gas drilling projects until that cumulative impact study is completed, so that DRBC will be able to incorporate its findings into its regulations. The findings of the cumulative impact study must also be included in any review of pipeline projects that are specifically being constructed to transport Marcellus Shale natural gas. The Project must not be given approval until the true environmental consequences and cumulative impacts of drilling in the Marcellus Shale region are known through the federal study.

In addition to environmental impacts, the cumulative impact study will also assess the potential productivity of wells in the Marcellus Shale region. Currently, their production

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[10] Tennessee Gas Pipeline Company, Application of Tennessee Gas Pipeline Company for a Certificate of Public Convenience and Necessity, FERC Docket No. PF10-23, Initial Draft Resource Reports 1 and 10, at 1-4 (Aug. 2010) [hereinafter "Draft Resource Reports"].

[11] *Id.*

[12] *See* Delaware River Basin Commission, Natural Gas Drilling in the Delaware River Basin (Nov. 3, 2010), http://www.state.nj.us/drbc/naturalgas.htm (detailing the DRBC's actions with respect to gas drilling over the past year and projecting future developments).

[13] *Id.*

[14] Hinchey, Holt, Sestak Secure House Panel Approval of $1 Million to Study Cumulative Water Impacts of Natural Gas Drilling in Delaware River Basin (July 23, 2010), http://holt.house.gov/index.php?option=com_content&task=view&id=554&Itemid=18.

[15] *Id.*

potential is unknown, making investment in infrastructure projects risky. The strength of DRBC's eventual regulations, not yet public, will also affect the amount of natural gas that can be extracted from the region. At this time it is impossible to project the amount of natural gas that will be produced and exported from the region, and whether that amount will be large enough to justify new pipeline infrastructure. If the DRBC implements highly restrictive regulations, the current capacity of the El Paso system may be sufficient to transport the volume of natural gas produced in the Marcellus Shale region. Until the productive capacity of the region is known, FERC should not approve applications to expand pipeline infrastructure. Communities throughout the Delaware River watershed will suffer the environmental harms of the Project; FERC must not impose these harms on them while the anticipated utility of the Project is unknown.

II. The Project Will Significantly Affect the Quality of the Environment and Requires an Environmental Impact Statement.

The National Environmental Policy Act ("NEPA") requires all federal agencies to prepare an EIS prior to taking "action[] significantly affecting the quality of the human environment."[16] FERC has promulgated regulations to implement NEPA that describe major actions significantly affecting the environment normally requiring the preparation of an EIS.[17] One such action is "major pipeline construction projects under section 7 of the Natural Gas Act using right-of-way in which there is no existing natural gas pipeline."[18] Further, FERC has determined that "major greenfield pipelines normally call for EIS's being prepared first."[19] Because this Project is a major pipeline construction affecting significant greenfields, FERC must prepare a full EIS to assess the myriad environmental consequences of the Project.

TGP's August 23, 2010 Initial Draft Resource Report states, "[o]f the 638.1 acres required for construction of the Project facilities … 112 acres are new permanent easement for the Project."[20] According to TGP, "[a] typical post-construction permanent ROW of 75 feet will be maintained for the new pipeline loop segments … This permanent ROW generally consists of 25 feet of new permanent maintained ROW and 50 feet of existing permanent ROW associated with the existing 300 Line pipeline."[21] Further, the Project will not only require TGP to attain additional rights-of-way where there are currently no natural gas pipelines, but will also impact sensitive and protected land and water resources, including the Delaware Water Gap National Recreational Area and the Monksville Reservoir.

The Project will significantly affect the quality of the human environment and a brief EA cannot on its own address its secondary and cumulative impacts. The high value of the resources along the ROW requires a more thorough level of study. Because the Project will have a significant impact on these resources, a full EIS is necessary to properly characterize the whole of the affected environment and the full extent of multiple classes of potentially severe impacts.

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16 National Environmental Policy Act, 42 U.S.C. § 4332(C) (2006).

17 18 C.F.R. § 380.6 (2010).

18 *Id*.

19 *See* Order Denying Rehearing and Request for Stay, 116 FERC P 61,182, ¶ 84, 2006 WL2461766, at *61788 (Aug. 25, 2006) (quotations omitted).

20 Draft Resource Reports, *supra* note 10, at 1-9.

21 *Id*. at 1-36.

III. FERC Must Assess Crucial Matters Not Included in the Notice of Intent.

NEPA[22] and its implementing regulations[23] require agencies to consider a full range of environmental impacts, including "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, [and] cultural" impacts, "whether direct, indirect, or cumulative."[24] The Notice of Intent fails to address several important issues that FERC must assess as part of the NEPA review process.

A. Legal Requirements in National Park Units

The Project will affect the DWGNRA, the Middle Delaware National Scenic and Recreational River, and the AT. All three of these environmental resources are protected by federal legislation.[25] The National Park Service ("NPS") has already submitted comments on the Project to FERC, but if they are to serve their role as a cooperating agency in this NEPA review, the document produced must ensure that the Project meets key requirements of the legislation governing the affected resources. In particular, it is questionable at best whether the Project can be constructed a way that would constitute statutory non-impairment of the DWGNRA and that would not contravene the conservation purpose of the AT.

The enabling legislation of the DWGNRA makes it clear that the public's recreational use and enjoyment is paramount.[26] Furthermore, the Secretary of the Interior may only authorize utilization of natural resources within the DWGNRA after having developed management policies to ensure that such utilization "is consistent with, and does not significantly impair, public recreation and protection of scenic, scientific, and historic features contributing to public enjoyment."[27]

Section 1.4.5 of the NPS's *Management Policies 2006* defines "impairment" as an impact that "would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values."[28] Section 1.4.5 then elaborates on this definition:

> An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is
> - necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or

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22 42 U.S.C. §§ 4321-4370f (2006).

23 40 C.F.R. §§ 1500-08 (2010).

24 40 C.F.R. § 1508.8 (2010).

25 *See* 16 U.S.C. § 460o (2006) (establishing the DWGNRA); 16 U.S.C. § 1274 (a)(20) (2006) (establishing the segment of the Delaware River within the DWGNRA as a wild and scenic river); 16 U.S.C. § 1241 (2006) (establishing the AT and the Pacific Crest Trail as the initial components of the National Trails System).

26 16 U.S.C. § 460o (2006) (stating that the purpose of the park is "for public outdoor recreation use and enjoyment of the proposed Tocks Island Reservoir and lands adjacent thereto").

27 16 U.S.C. § 460o-4 (2006).

28 *See* Nat'l. Park Serv., U.S. Dep't of the Interior, Management Policies 2006, at 11 (2006), *available at* http://www.nps.gov/policy/MP2006.pdf.

- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.[29]

If constructed, the Project will impact recreational use of the Milford Beach site, approximately one mile downstream of the Project, and the Kittatiny Canoes campsite, which, although privately owned, increases recreational use of park land.

The AT's enabling legislation states that National Scenic Trails must be "so located as to provide for maximum outdoor recreational potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural or cultural qualities of the areas through which such trails may pass."[30] The upgrade and expansion of a natural gas pipeline is not compatible with the preservation of these wilderness qualities and will impair the recreational value and resources of the Trail. ROW expansion during construction in all parks would require the deforestation of critical forest resources resulting in loss of significant ecosystem services, forest connectivity, and threatened and endangered species habitat. Long-term maintenance of the ROW would prevent these values from being restored to park lands and encourages invasive species infestations, all of which detracts from the natural integrity of the park and the preservation of its scientific features. Thus, the NEPA document must thoroughly consider whether the proposed natural gas pipeline expansion would impair the resources of the DWGNRA and AT.

During the NEPA process, FERC must also evaluate whether any of TGP's proposed alternatives would result in the construction of new roads or facilities or the alteration of existing roads or trails on federal lands within the DWGNRA, including access roads to the ROW. The construction of any such roads and facilities would lead to permanent adverse effects on park landscapes in violation of the NPS Organic Act[31] and the individual pieces of enabling legislation noted above. FERC must evaluate in the NEPA document whether it could authorize a certificate of public convenience and necessity for the Project that would be consistent with the non-impairment mandate of those laws.

B. <u>Climate Change and Greenhouse Gases</u>

Carbon sequestration in forest cover is a critical mechanism in combating climate change. Forests serve as carbon sinks, removing excess carbon dioxide from the atmosphere and storing the compound over several decades. The applicant proposes to clear-cut a stretch of 37 miles of forest, decreasing the ecosystem's ability to provide carbon sequestration services. This impact must be addressed in the NEPA document.

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29 *Id*.

30 16 U.S.C. § 1242(a)(2) (2006) (establishing requirement for siting of National Scenic Trails).

31 *See* 16 U.S.C. § 1 (2006) (requiring the NPS to "promote and regulate the use of Federal areas known as national parks, monuments, and reservations hereinafter specified . . . as provided by law, by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.").

The construction of the Project will require a large amount of fossil fuel to power construction equipment. The NEPA document must explore what impact construction vehicle emissions will have on global warming.

Further, FERC should consider the cumulative impacts of the Project's direct and indirect GHG emissions. Direct emissions may include but are not limited to carbon dioxide ("CO2") and nitrous oxide ("N2O") emissions from compressor engines, line heaters, and generators; fugitive methane emissions from compressors and pipelines;[32] and black carbon emissions from diesel vehicles and equipment. Notably, methane is 56 times and N2O is 280 times more warming than CO2 over a twenty-year period,[33] while black carbon is estimated to be 2,200 times more warming than CO2 over the same period.[34]

Indirect emissions, "which are caused by the [proposed] action and are later in time or farther removed in distance, but are still reasonably foreseeable,"[35] are among the effects that agencies are required to consider under NEPA.[36] CEQ Draft Guidance has noted that "for Federal actions that require an EA or EIS *the direct and indirect GHG emissions from the action should be considered in scoping*," and these GHG impacts should be considered in the context of the "aggregate effects of past, present, and reasonably foreseeable future actions."[37] One indirect effect of the Project's transportation of natural gas from the Marcellus Shale region is that this gas will be combusted for use, releasing greenhouse gases that cause climate change. This effect is not only reasonably foreseeable, it is certain. Where CEQ has called for NEPA analyses of GHG sources to "take account of all phases and elements of the proposed action over its expected life,"[38] such certain downstream effects of a gas pipeline should be assessed. Moreover, cumulative impact analysis requires that these GHG emissions be considered in the context of GHGs emitted from the aggregate of natural gas that have been and will reasonably foreseeably be extracted from the Marcellus Shale region.

C. Energy

Energy impacts must also be examined in the NEPA document. Aspects of the Project that should be studied for their energy impact include: all energy-consuming equipment and

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32 "The U.S. natural gas transmission network contains more than 279,000 pipeline miles. Along this network, compressor stations are one of the largest sources of fugitive emissions, producing an estimated 50.7 billion cubic feet (Bcf) of methane emissions annually from leaking compressors and other equipment components such as valves, flanges, connections, and open-ended lines." Envtl. Prot. Agency, Lessons Learned from Natural Gas STAR Partners 1 (Oct. 2003), *available at* http://www.epa.gov/gasstar/documents/ll_dimcompstat.pdf.

33 *See* United Nations Framework Convention on Climate Change, *Global Warming Potentials* http://unfccc.int/ghg_data/items/3825.php (last visited Nov. 10, 2010).

34 *See* L. Bruce Hill, Clean Air Task Force, The Carbon Dioxide-Equivalent Benefits of Reducing Black Carbon Emissions from U.S. Class 8 Trucks Using Diesel Particulate Filters: A Preliminary Analysis 3 (2009), *available at* http://www.catf.us/resources/publications/files/CATF-BC-DPF-Climate.pdf.

35 40 C.F.R. § 1508.8(b) (2010).

36 *See id.* § 1508.25(c).

37 Council on Envtl. Quality, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions 5, 9-10 (Feb. 18, 2010) (emphasis added), *available at* http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf (notice of availability published at 75 Fed. Reg. 8,046 (Feb. 23, 2010)).

38 *Id.* at 5.

processes that will be used during the construction and operation of the Project; the energy efficiency of required materials, fuels, and equipment; the number of maintenance trips necessary for maintaining the ROW; the mode of transportation and use of fuel for these activities; and an estimate of the total energy requirements for each proposed alternative.

The NEPA documents should also examine the impacts of increased energy consumption that will result from upgrading the natural gas pipeline. Part of this analysis should discuss how bringing more energy into New Jersey will affect future energy conservation efforts.

Energy consumption impacts should be calculated for the lifetime of the proposed Project and Project alternatives, and should be an aspect of the irreversible commitment of resources section of the NEPA document.

D. Infrastructure, Access, and Circulation

FERC must examine the potential degradation of roadways due to utilization by construction vehicles. The heavy construction machinery and high traffic volumes associated with Project construction activities could ruin roads, leaving taxpayers to pay for repairs. FERC should consider this eventual tax burden as it weighs alternatives during the NEPA process.

Moreover, construction activity traffic will impact visitor experience at federal, state, and county parklands as portions of these parks will be completely inaccessible or will require detours. Visitors will have to fight congestion to access the parks, and the messy sight of construction activity will greet them once they arrive. Park visitation may well decrease, causing an adverse impact on the local economy.

FERC must also address localized impacts along access roads arising from the removal of vegetation, which will in turn lead to loss of forest connectivity, increased edge effects on the core forest, and increased erosion. The heavy construction equipment utilizing these roads will compact the soil, leading to a degradation of groundwater recharge capabilities. Finally, the installation of fill materials along these roads will also import invasive species to the ROW. The NEPA document must examine these long-term effects.

E. Environmental Justice

The Project affects an area that includes the Ringwood, New Jersey and Ramapo Mountains areas, which raises substantive environmental justice issues. FERC is obligated to address these issues in accordance with Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations").[39] In particular, this region is home to Ramapough Lenape American Indians, who have suffered adverse social challenges as an unrecognized tribe that has suffered from past discrimination.[40]

The Ramapough Lenape people and other residents continue to undergo health and social harm as a result of having to deal with the Ringwood Mines Superfund site.[41] This site was a

[39] Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994).

[40] *See* New Jersey Committee on Native American Community Affairs, Report to the Governor Jon S. Corzine (Dec. 17, 2007) (affirmed on Oct. 1, 2008 by Gov. Jon Corzine's Executive Order #122).

[41] *See* Envtl. Prot. Agency, EPA Ringwood Mines/Landfill Superfund Site Community Involvement Program, http://www.epa.gov/region2/superfund/npl/ringwood/cip_plan_for_ringwood.pdf (accessed Nov. 12, 2010).

former waste dump associated with the Ford Motor Company plant located in Mahwah, New Jersey. The waste products included car parts, solvents, paint sludge, and potentially other toxic materials, and they were dumped both on the ground surface and possibly also in abandoned mine shafts.

This history of environmental destruction caused significant harm to the Ramapough Lenape, who depend on natural resources for their livelihoods, such as by subsistence hunting of small game. Sinkholes and paint sludge were discovered on properties throughout the region. At the same time, health impacts were found including heightened levels of respiratory disease, skin disease, female reproductive disorders, miscarriages, birth defects, learning disabilities, behavioral problems in children, and various cancers. In addition, the Ramapough Lenape community was warned against their vital hunting activities.[42]

This past experience powerfully demonstrates how the Ramapough community living in the area impacted by the TGP particularly relies on the conservation of the natural environment. The disproportionate impact on this community must be included in the scope of FERC's environmental review.

F. Land Pricing

FERC must require the applicant to consider alternative routes that do not impact public open space. Utilities routinely propose pipeline routes that impact public open space because these lands are valued at a lower rate when compared to non-preserved lands.[43] FERC must not permit this "savings" to the applicant to drive the siting process. Public and preserved lands must be priced according to their value to the utility. The commenters urge FERC to be mindful of the distorted pricing of open space as it evaluates alternative routes for this Project and as it considers the cumulative environmental harms of the proposed pipeline expansion. The commenters respectfully suggest that FERC's historical approach to evaluating cumulative impacts, exhibited in FERC's approval earlier this year of TGP's 300 Line Project, gives inadequate consideration to the distorted incentives of utility companies.[44]

IV. FERC Must Thoroughly Assess All of the Potential Impacts Identified in the Notice of Intent

The Notice of Intent identified seven categories of impacts that could occur as a result of

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[42] *See N.J. Warns Hunters Not to Eat Squirrel Meat Possibly Contaminated by Toxic Dump,* Associated Press, Jan. 25, 2007, *available at* http://www.foxnews.com/story/0,2933,246803,00.html.

[43] *See* Portland Natural Gas Transmission Sys. v. 19.2 Acres of Land, 195 F. Supp. 2d 314, 323-4 (D. Mass. 2002) (valuing "industrial park" parcels at $50,000/acre and $30,000/acre; valuing "open space" parcels at $983/acre); Letter from John J. Donahue, Superintendent, Delaware Water Gap National Recreation Area, Nat'l Park Serv., U.S. Dep't of the Interior, to David Hanobic, Fed. Energy Regulatory Comm'n 2 (Oct. 8, 2010) (hereinafter "Nat'l Park Serv. Comment") ("[u]tility companies normally assert the least environmental impacts result from utilizing utility corridors located in this national park unit. This is flawed logic and can adversely affect the natural and cultural resources in [the DWGNRA] as well as the mission of the [NPS].").

[44] *See* Order Issuing Certificate and Approving Abandonment, 131 F.E.R.C. ¶ 61,140, at ¶ 84, 2010 WL 2007482, at *20 (May 14, 2010) (finding no "significant cumulative impact" on "special water resources in Pike County" from the concurrent development of the 300 Line Project, the Susquehanna-Roseland Electric Transmission Line project, the Columbia Gas Pipeline (Line 1278/Line K Replacement) Project, and Marcellus Shale Development Activities).

the construction and operation of the Project:

- geology and soils;
- water resources, fisheries, and wetlands;
- vegetation, wildlife, and endangered and threatened species;
- cultural resources;
- land use and cumulative impacts;
- air quality and noise; and
- public safety.[45]

FERC must address these impacts in light of the fact that parts of the Project will traverse the Highlands region,[46] a portion of New Jersey that is subject to additional protections and regulations under the Highlands Water Protection and Planning Act due to its critical resources.[47] Although the Highlands Council will conduct its own review of the Project if FERC decides to approve it, in the first instance, FERC must consider that many of the above categories of impacts are strictly regulated under the Highlands Act as implemented by the Highlands Council's Regional Master Plan.[48]

The following comments identify particular issues of concern within the Notice of Intent's first six categories. Given the dramatic growth of natural gas development in the Marcellus Shale, and the significant environmental degradation resulting from that development, the comments begin with FERC's obligations to consider the cumulative impacts of this Project.

A. Cumulative Impacts and Land Use

i. Cumulative Impacts

Cumulative impacts are:

> impact[s] on the environment which result[] from the incremental impact of the action *when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions*. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.[49]

The Council on Environmental Quality ("CEQ") has emphasized that cumulative effects analysis includes a "[f]ocus on truly meaningful effects" of "past, present, and future actions" as well as "all federal, nonfederal, and private actions."[50]

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45 Notice of Intent, at 5.

46 Draft Resource Reports, *supra* note 10, at 10-12.

47 Highlands Water Protection and Planning Act, N.J. Stat. Ann. § 13:20-1 to -35 (2004).

48 New Jersey Highlands Council, Regional Master Plan (2008), *available at* http://www.highlands.state.nj.us/njhighlands/master/rmp/final/highlands_rmp_112008.pdf.

49 40 C.F.R.§ 1508.7 (2010) (emphasis added).

50 Council on Envtl. Quality, Considering Cumulative Effects Under the National Environmental Policy Act 11 (1997), *available at* http://ceq.hss.doe.gov/nepa/ccenepa/sec2.pdf.

CEQ has made clear that "[t]he statutory clause 'major Federal actions significantly affecting the quality of the human environment' is to be construed by agencies with a view to the overall, cumulative impact of the action proposed (and of further actions contemplated)."[51] Whether a project "significantly" affects the quality of the human environment[52] depends on "considerations of both context and intensity."[53] Intensity refers to "the severity of impact" and requires consideration of factors including "[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts."[54] "Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts."[55]

The requirement to consider cumulative impacts applies to EAs.[56] In fact,

> The importance of analyzing cumulative impacts in EAs is apparent … consider[ing] the number of EAs that are prepared. The Council on Environmental Quality noted . . . that "in a typical year, 45,000 EAs are prepared compared to 450 EISs . . . . Given that so many more EAs are prepared than EISs, *adequate consideration of cumulative effects requires that EAs address them fully*."[57]

Cumulative impacts caused by "reasonably foreseeable" future actions are cognizable under NEPA.[58] Moreover, FERC must consider the cumulative effects of actions similar to the proposed action, whether existing or reasonably foreseeable.[59]

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[51] Statements on Proposed Federal Actions Affecting the Environment, 35 Fed. Reg. 7,390, 7,391 (May 12, 1970).

[52] 42 U.S.C. § 4332 (C) (2006).

[53] 40 C.F.R. § 1508.27 (2010).

[54] 40 C.F.R. § 1508.27(b)(7) (2010).

[55] *Id.*

[56] *See* Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062, 1076 (9th Cir. 2002); Soc'y Hill Towers Owners' Ass'n v. Rendell, 210 F.3d 168, 180 (3d Cir. 2000).

[57] *Kern*, 284 F.3d at 1076 (quoting Council on Envtl. Quality, *supra* note 50, at 4) (emphasis in original).

[58] *See* 40 C.F.R. § 1508.7 (2010); Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1214-15 (9th Cir. 1998).

[59] *See, e.g.*, Nat'l Audubon Soc'y v. Dep't of Navy, 422 F.3d 174, 196-97 (4th Cir. 2005) (stating that cumulative impact analysis of a proposed outlying landing field for Navy aircraft should have considered whether flights from and between the aircraft homebase station and the field would "add any significant noise-related or other environmental impacts to those that the *existing* military airspace currently imposes" and whether the proposed field would have cumulative effects in light of the reasonably foreseeable designation of additional military operating areas, even in non-adjacent areas) (emphasis added); Lands Council v. Powell, 395 F.3d 1019, 1027 (9th Cir. 2005) (finding environmental impact analysis of timber harvesting activity inadequate where the agency did not consider "in detail past timber harvesting projects and the impact of those projects," in combination with the proposed timber harvest, on the environment); Grand Canyon Trust v. Fed. Aviation Admin., 290 F.3d 339, 347 (D.C. Cir. 2002) (noting that the EA for the proposed construction of a replacement airport "must evaluate the cumulative impact of noise pollution [on a nearby national park] as a result of construction of the proposed replacement airport *in light of air traffic near and over the Park, from whatever airport, air tours near or in the Park*") (emphasis added); Natural Res. Def. Council. v. Hodel, 865 F.2d 288, 298 (D.C. Cir. 1988) (determining that cumulative impact assessment of an Outer Continental Shelf ("OCS") oil and gas leasing activity must consider the cumulative impacts of "simultaneous OCS development in different areas"); Mountaineers v. U.S. Forest Serv., 445 F. Supp. 2d 1235, 1247-48 (W.D. Wash. 2006) (concluding that cumulative impact analysis that only accounts for

In one particularly instructive case in the Northeast region, the Postal Service proposed construction of a facility that would require the paving of six acres of undeveloped land adjacent to an existing airport and highway.[60] The court found the agency's Finding of No Significant Impact arbitrary and capricious, noting that the EA's consideration of the proposed facility's cumulative impact on water quality only addressed "the interaction of expected runoff from the site with present levels of runoff from the nearby" highway and airport.[61] The court commented:

> This inquiry included no consideration of possible future development of those facilities or of other nearby land. While such an omission may be excusable where future development is unlikely or difficult to anticipate, in the present case there currently exist plans to expand the airport dramatically, and movants have identified substantial additional development in progress or being planned in the vicinity. The impact of this array of near-certain future development will in fact be felt in combination with the effects of the facility's construction and operation, and accordingly must be analyzed.
>
> The failure of the EA to consider the facility's cumulative impact in conjunction with nearby anticipated development is a matter of particular concern in light of the regulations' clear statement that agencies should account for the impact of "reasonably foreseeable future actions."[62]

The Court further found the EA lacking because it "framed its cumulative impact analysis too narrowly by considering only the facility's two immediate neighbors," the airport and highway.[63] "[A] critical consideration in determining the facility's cumulative environmental effects must be the interaction of its runoff with other pollutants . . . from whatever source."[64] In short, the determination that must be made in an EA – whether a proposed project will have "significant" impacts – necessarily includes a consideration of the impact of the action when added to other past, present, and reasonably foreseeable future actions, whether federal, non-federal, or private.[65]

FERC therefore is required to consider the impacts of the Project in the context of existing and reasonably foreseeable Marcellus Shale development, which includes but is not limited to the hundreds of miles of gathering and transportation pipelines that have been and will need to be constructed to move the gas from the thousands of wells that have been and will be drilled to interstate markets.

FERC must examine the cumulative impact of the multiple utility and other linear projects that are being proposed or constructed in the DWGNRA, AT, Highlands region, and in

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the incremental environmental effect of a proposed trail project on current trail use and only in a narrowly defined area is inadequate and must instead address "the overall level of environmental impact caused by the [entire] trail system").

60 *See* U.S. v. 27.09 Acres of Land, 760 F. Supp. 345, 347 (S.D.N.Y 1991).

61 *Id.* at 351.

62 *Id.* (citing 40 C.F.R. §§ 1508.6, 1508.27(b)(7)).

63 *Id.*

64 *Id.* at 351-52.

65 *See* 40 C.F.R. §§ 1508.7-8, 1508.27 (2010).

state and county parks. These projects do not occur in a vacuum. As one by one they steadily deplete the natural and scenic resources of the region, the combined impact becomes potentially devastating. While FERC is reviewing the Project, NPS is preparing an EIS reviewing PSE&G's proposed new 500-kilovolt power transmission line from Susquehanna, Pennsylvania, to Roseland, New Jersey, which passes through the DWGNRA and the AT.[66] If utility infrastructure proposals continue to move forward at this pace, the impact on federally protected parklands will be ruinous. As recommended by the NPS in its comments, FERC must address this phenomenon in the NEPA document.[67]

The Highlands region is also seeing an influx in applications for utility and other linear projects that negatively impact the resources of the region. Another example in addition to the Susquehanna-Roseland transmission line is TGP's own 300 Line Project, which will disturb approximately 230 acres within the Highlands region and result in the deforestation of 45.15 acres of established forested land on state owned properties.[68] It is clear that the 300 Line Project and the Project at issue here are all part of a larger development plan, as they involve interlocking loop upgrades of the same pipeline.[69] TGP must not be allowed to circumvent heightened environmental scrutiny by segmenting their upgrades in such a way. The cumulative consequences of all these projects, many of them previously subject to FERC approval, must be assessed in the NEPA document.

ii. <u>Land Use</u>

Any action by FERC must recognize and address the role that state regulations play in the Project.

The New Jersey Department of Environmental Protection ("NJDEP") administers the Green Acres Program in the State of New Jersey. The Program provides funding for local government units and non-profits "to acquire lands that have significant recreation and conservation attributes and to preserve natural resources for the current population and future

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66 Nat'l Park Serv., Planning, Environment & Public Comment page on Susquehanna to Roseland 500kV Electric Transmission Line (last visited Nov. 11, 2010), http://parkplanning.nps.gov/projectHome.cfm?projectID=25147.

67 *See* Nat'l Park Serv. Comment, *supra* note 43 at 2 (Oct. 8, 2010) (stating that utility company preference for routing projects through park land "can adversely affect the natural and cultural resources in [DWGNRA] as well as the mission of the [NPS]).

68 *See* Highlands Water Prot. and Planning Council, Highlands RMP Consistency Determination Review (Revised) 1 (Jan. 11, 2010), available at http://www.highlands.state.nj.us/njhighlands/projectreview/tgp_gas_cdr_final.pdf (stating total affected acreage); Tennessee Gas Pipeline Co., 300 Line Project: No Net Loss Reforestation Plan 15 (July 29, 2010), available at http://www.state.nj.us/dep/parksandforests/forest/community/images/TGP_PPT_Presentation_NNL_Reforestation_Plan_7-29-10.pdf (Powerpoint presentation detailing forest impacts of the 300 Line Project and stating total affected forested acreage).

69 *Compare* El Paso Corp., 300 Line Project Map, http://www.elpaso.com/tgp300lineproject/images/300Line%20ProjectMap.png (showing that the 300 Line Project will entail construction of roughly "127 miles of 30" looping b/w Sta. 313 and Mahwah, NJ," and showing anticipated loop construction in the 313, 315, 317, 319, 321, 323, and 325 loops of the pipeline) *with* El Paso Corp., Northeast Upgrade Project Map, http://elpaso.com/northeastupgrade/images/NortheastUpgradeProjectMap.pdf, (showing that the Northeast Upgrade Project (the Project at issue here) will entail construction of new pipeline in the 317, 319, 321, 323, and 325 loops of the same pipeline).

citizens of the State."[70] Lands subject to Green Acres restrictions must be used for outdoor recreation and conservation purposes.[71] While the Program recognizes that there may be certain "limited circumstances"[72] under which a government unit could lease or use Green Acres land "for a beneficial public purpose other than recreation and conservation purposes," such a diversion must be approved by NJDEP.[73] The diversion application must propose a mitigation plan for uses that will have an adverse impact on the land's natural resources.[74] Furthermore, NJDEP must hold two public hearings on proposed leases longer than twenty-five years.[75] TGP may not lease or use Green Acres lands in the State of New Jersey without complying with the Program's rules and procedures.

The lease or use of State park land funded by the Green Acres Program must comply with the procedures and regulations described above.[76] Furthermore, the Division of Parks and Forestry must approve a reforestation plan with "a goal of no net loss of existing forested area" before any project that will result in the removal of trees from areas of one half-acre or more in State park land commences.[77]

The Land and Water Conservation Fund Act of 1965 created a fund "for and authorizing Federal assistance to the States in planning, acquisition, and development of needed land and water areas and facilities and … for the Federal acquisition and development of certain lands and other areas."[78] These lands must be "continually maintained in public recreation use unless NPS approves substitution property of reasonably equivalent usefulness and location and of at least equal fair market value."[79] The NEPA document must address whether the Project will impact any lands receiving assistance from the Land and Water Conservation Fund. If the Project will convert such lands "in whole or in part to other than public recreation uses[,]" an application must be submitted to the National Park Service and "[a]ll practical alternatives to the proposed conversion [must] be[] evaluated."[80]

B. Geology and Soils

This section must include a full examination of the geological formations that will be impacted by construction activities, such as groundwater aquifers and water table depth, sinkholes, and springs. An in-depth evaluation of impacts must be prepared for the overturned antiform and overturned synform folds, glacial erratic, and Ramapo Fault in the Ramapo Mountains County Park. FERC must disclose how this Project will avoid all negative impacts to these features.

The geologic resources of the DWGNRA and the Scenic and Recreational River are perhaps the park unit's most significant resources. The remarkably steep topography of the

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70 N.J. Admin. Code § 7:36-1.1 (2010).
71 *Id.*
72 *Id.*
73 N.J. Admin. Code § 7:36-25.14 (2010).
74 *Id.*
75 N.J. Stat. Ann. § 13:1D-52 (2003).
76 N.J. Stat. Ann. § 13:1L-8 (2003).
77 N.J. Stat. Ann. § 13:1L-14.2 (2003).
78 Land and Water Conservation Fund Act of 1965 Pub. L. No. 88-578, 78 Stat. 897 (1965).
79 36 C.F.R. § 59.3 (2010).
80 *Id.*

Delaware Water Gap, the Delaware River valley slopes, and the Kitatinny Ridge maximizes the potential for erosion, rock slides and even avalanches caused by construction of the Project. Significant permanent scarring of the geological resources could occur, with geologic impacts far more severe than would occur in level topography.

Several areas of steep slopes will be traversed by the Project. Therefore, the feasibility of erosion control mechanisms in these areas must be evaluated. TGP has proposed to implement special construction techniques only in areas where the slope exceeded 28 degrees.[81] This is inappropriate as the Highlands Water Protection and Planning Act protections apply to all slopes greater than 10 degrees[82] and this standard must be used in the NEPA review since the Project must be consistent with the goals and policies of the Highlands Water Protection and Planning Act to qualify for an exemption from the Highlands Water Protection and Planning Council.[83]

The digging of trenches for the Project will involve excavating tons of soil and requires that soil surveys be conducted in relation to the Project. Construction and re-establishment of vegetation along the ROW provides an opportunity for run-off and the loss of productive soil. Construction activities will change the drainage patterns along the ROW and necessitate detailed studies of impacts to water resources. Expansion of the ROW has the potential to affect the physical properties of the soil along and adjacent to the ROW by clearing land cover, thus changing the sunlight exposure and moisture content of the soil. Reduction in soil moisture increases the risk of wind erosion. ROW expansion will also require increased use of herbicides in federally protected lands and state and county parklands for ROW maintenance, which will chemically alter soil composition. Spillage of fuel oil and the creation of trench breakers during construction activities may also result in the chemical alteration of soil.

Construction activities will also necessitate the removal and disposal of material. The NEPA document must address where the removal will be conducted and where the material will be disposed, whether digging to install the pipeline is likely to intercept the water table, and what effects the resultant pumping will have.

C. Water Resources, Fisheries, and Wetlands

i. Water Resources

The commenters have serious concerns about the applicant's proposal to drill underneath the Monksville Reservoir and through the watershed lands of the North Jersey District Water Supply Commission.[84] The Commission's reservoirs and watershed lands provide drinking water to over 2,400,000 New Jersey residents. Expanding infrastructure for corporate profit while endangering the water supply for state residents is not a wise policy nor is it required by

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81 Draft Resource Reports, *supra* note 10, at 1-23.

82 *See* N.J. Admin. Code § 7:38-1.4 (2010) (defining "steep slope" as "a land area with a grade greater than 10%."); N.J.A.C. 7:38-3.8 (setting forth restrictions on building in steep slope areas).

83 *See* N.J. Stat. Ann. § 13:20-28(a)(11) (2004) (setting forth an exemption for the upgrade of public utility systems provided that the proposed activity is "consistent with the goals and purposes" of the HWPPA).

84 In New Jersey, a request must be made to the DEP to convey "land utilized for the purpose of the protection of a public water supply." N.J. Stat. Ann. § 48:2-23.1 (2003). DEP must "review and make recommendations on an assessment … of the impact that the conveyance, and the prospective use or uses of the land conveyed, would have on the water quality of the affected public water supply." *Id.*

public convenience and necessity. Locating the Project on these lands is especially alarming as the pipelines and gravel surrounding them create new conduits for water, altering the hydrologic pattern of the watershed lands. Water will run parallel with the new pipeline instead of recharging aquifers and river ecosystems, degrading the quality and quantity of water available to New Jersey residents.

The commenters also have concerns about the chemical contamination of water resources. Any expansion of the ROW will require that the applicant provide maintenance to a larger area. Current practices call for the ROW to be clear of vegetative matter to prevent damage to the gas pipeline. Herbicides are used to accomplish this. Widening the ROW will result in increased herbicide use on the federal, state, and county parklands along the ROW and, as run-off capacity will be intensified in the ROW due to lack of vegetation and forest cover, the herbicides may travel downstream to the Upper Delaware Watershed and the Delaware River (a major source of drinking water for New Jersey and Pennsylvania), the Monksville Reservoir, and the Ramapo River and Wanaque River Watersheds (components of the Passaic River Watershed).

Beyond chemical contamination, water quality effects will also result from an increase in suspended solids in the water due to erosion. Upon entering the stream ecosystem, this increase in suspended solids will result in a reduction to the streams' water bearing capacity, in turn reducing oxygen availability and impacting aquatic plant and animal species, especially habitat for fish reproduction and macroinvertebrate diversity.

Impacts to groundwater have not been examined and, as the installation of the Project will involve drilling and digging into the bedrock, potential effects must be considered. If these activities result in interception of the water table, dewatering activities would result in the localized drawdowns of water table elevation and could impact local wells. These construction activities may also result in contamination of groundwater by creating a direct flow of contaminants, including herbicides, into local aquifers due to drilling. FERC must determine whether any of the aquifers along the ROW are sole-source as this would magnify any negative impacts of construction.

Mahwah Township recently completed an Environmental Resource Inventory (ERI) as part of the municipality's petition for conformance with the Highlands Council's Regional Master Plan that underscores the importance of groundwater quality preservation in the Highlands region. The ERI found that "Residents of the Township of Mahwah rely on ground water supplies as a primary source of drinking water. To protect the health, safety and welfare of Mahwah residents and to ensure a supply of safe and healthful drinking water and the protection of the ground water resources that provide water to potable water supply wells is primary goal of the Township of Mahwah."[85] Similar language can be found in Ringwood's ERI, again stating that protection of the groundwater supply is the primary goal of the Borough.[86] As this is the most crucial concern for both Highlands municipalities being impacted by the gas pipeline, the negative impacts to groundwater quality and quantity must be heavily weighted in FERC's

[85] Mahwah Township, Highlands Environmental Resource Inventory 33 (2009), *available at* http://www.highlands.state.nj.us/njhighlands/bergen_county/mahwah/0233_ERI_091208.pdf.

[86] Borough of Ringwood, Highlands Environmental Resource Inventory 33 (2009), *available at* http://www.highlands.state.nj.us/njhighlands/passaic_county/ringwood/1611_ERI_091208.pdf.

review of the public necessity of this Project. This review should also take into account any costs that would be borne by these municipalities or the North Jersey District Water Supply Commission if the Project depleted the quality of the water supply and groundwater to a point that water treatment facilities became necessary.

Increasing the runoff potential of soils will negatively impact the prime groundwater recharge areas surrounding the ROW. By removing the topsoil layer and associated forest litter and humus, runoff will decrease the soil porosity and moisture retention capacity. This will induce even greater levels of runoff and will damage the groundwater recharge capabilities of the ecosystem. The decreased ability to absorb water resulting in runoff and sedimentation severely decreases water quality.

To determine current water quality, the NEPA document must include a survey of the established benthic community in potential impacted streams. This should include the composition, quantity, and diversity of the community.

Construction related water impacts include the possibility of fuel spills and contamination of runoff and further erosion and sedimentation. This concern and possible prevention must be addressed in the general construction activity stormwater permit as required under the Clean Water Act.[87]

Any potential channel relocations that occur due to construction must be studied as an impact. Installing the Project will require stream diversions that will impact wetland areas. These areas of stream channel modification must be identified so that the impacts on wildlife resources be can fully examined with the coordination of NPS, Fish and Wildlife Service, and New Jersey and Pennsylvania agencies as required under the Fish and Wildlife Coordination Act.[88]

In studying impacts to water quality, consideration must also be given to visitor experience and how diminished water quality would affect recreational uses of the Delaware River and state and county parklands (e.g., boating, canoeing, aesthetic qualities, and degradation of fisheries).

Finally, this expansion Project is specifically being proposed to facilitate transportation of Marcellus Shale natural gas and the NEPA document must review the environmental consequences of using hydraulic fracturing techniques in the Delaware River watershed as a cumulative impact of the Project. This must include an examination of the impacts to the Delaware River watershed from withdrawing water for drilling purposes, use, and disposal of water containing fracking compounds back into the ecosystem. The impact on benthic communities stemming from increased total dissolved solids in ecosystems as a result of drilling and water withdrawal activities must be examined.

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[87] *See* 33 U.S.C.§ 1342(p) (2006); 40 C.F.R. § 122.26 (b)(15) (2010); 40 C.F.R. § 450.10 to §450.24 (2010) (except for the turbidity limitations of §450.22(a), which according to §450.10(b), are not applicable to gas pipeline construction activity).

[88] 16 U.S.C. § 662 (a) (2006).

ii. Wild and Scenic Rivers Act

The Middle Delaware Wild and Scenic River will potentially be impacted by the proposed project alternatives. This potentially impacted segment of the Delaware is protected under the Wild and Scenic Rivers Act because the area has "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or … similar values."[89] The Act explains that rivers are given the scenic designation when "shorelines or watersheds [are] still largely primitive and shorelines largely undeveloped… ."[90] This Project as proposed will impact the very reason for protecting this river under the Act. Furthermore, as a scenic river, the environment surrounding this segment of the Delaware must be protected for the benefit and enjoyment of present and future generations. The Act specifically states:

> Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archaeologic, and scientific features.[91]

This Project would mar the scenic landscape, increase significant sedimentation and water quality degradation, and impact aquatic ecosystems and wildlife, thereby damaging the values that caused the river to be protected and interfering with the public use and enjoyment of those values. These impacts must be addressed in the NEPA document.

iii. Wetlands

Any impacts to the physical characteristics of wetlands resulting from the use of fill must be examined. Wetland delineations and assessment of values and functions will be required. As part of this analysis, hydrology, vegetation, and soils must be examined in delineations. Assessment of function and value must consider all ecosystem services being provided, such as groundwater recharge, water quality and sedimentation, wildlife habitat, flood protection, biological diversity, recreation, and aesthetics, so that potential impacts and alternatives can be properly assessed.

The NEPA document must assess impacts to wetlands such as changes in water levels, flow characteristics, circulation patterns, or flooding frequencies due to the Project. Changes in substrate conditions may affect the ability of the wetland to sustain vegetation and wildlife populations. Increased run-off as addressed above may introduce contaminants or more sedimentation to the ecosystem. Increased nutrient loading could produce algal blooms and reduce available oxygen in the water.

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89 Wild and Scenic Rivers Act, 16 U.S.C. §§ 1271-1287 (2006).

90 *Id.* § 1273.

91 *Id.* § 1281.

iv. Floodplains

Beneficial floodplain values identified in the Unified National Program for Floodplain Management[92] should be utilized in examining impacts. These include the accelerated runoff produced along the ROW that will result in more erosion and deposition within streams, increased transport and loading of contaminants, increase in flood peaks due to accelerated runoff (in turn reducing the amount of water entering the ground), decrease in groundwater recharge, blocked or diverted groundwater flow, and the removal of habitat and food source for wildlife and fishery resources. These impacts can also produce a "ripple" effect by upsetting the balanced ecosystem of the landscape through construction activities. The NEPA document must consider these long-term, cumulative impacts.

v. Fisheries

Impacts to the entirety of the Ramapo River, Wanaque River, and Upper Delaware River watersheds caused by the Project must be examined, including tributaries and wetlands.

The headwater streams impacted by the Project must be surveyed for native brook trout. The crossing of multiple streams, all of which are trout waters, will have a large impact on the trout populations and spawning in the region, especially during construction, and will degrade the waterways long after the Project is completed.

Beyond impacts resulting from construction of the Project, the NEPA document must examine impacts to all wetland ecosystems caused by the channelization of groundwater to new areas as it runs parallel to the new pipeline. A recent gas pipeline installation that crosses the Musconetcong River in Asbury, New Jersey has resulted in an alteration in the channelization of groundwater towards running parallel with the pipeline and away from the river, decreasing water levels in the river and negatively impacting trout spawning and macroinvertebrate populations.[93]

D. Vegetation, Wildlife, and Endangered and Threatened Species

i. Vegetation

The Project, as proposed, requires the removal of vegetation from an additional 75 feet off the ROW, creating a new expanded 100 foot ROW for construction.[94] This will have a multitude of secondary effects including increasing runoff potential and erosion, allowing for the encroachment and establishment of invasive species and destruction of wildlife habitat along with primary impacts of loss of biodiversity, loss of forest cover and increase and magnification of forest edge impacts, including deer browse, to the core forest, and increased use of herbicides along the ROW that will impact the surrounding ecosystem. Removal of forest cover would change the light exposure and soil moisture content, which will have impacts to the surrounding vegetative community. Vegetation removal will also be required along proposed access roads and similar impacts should be expected in these areas as well.

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92 The Fed. Interagency Floodplain Mgmt. Task Force, A Unified National Program for Floodplain Management (1994), *available at* http://www.fema.gov/library/viewRecord.do?id=4150.

93 *See* Stephen E. Laney, *Spring Flow Restoration*, The Professional Geologist, March/April 2007, at 43.

94 Draft Resource Reports, *supra* note 10, at 1-10.

ii. Wildlife

Clearance along the ROW and proposed access roads will result in loss of habitat and even individual animals. FERC should assess the likelihood of displaced animals surviving in adjacent areas because often that community will be at a carrying capacity for that particular species.

In areas of highly valued but threatened ecosystems, the best available science must be employed to ensure protection of wildlife and avoid jeopardy to wildlife habitat. Failure to employ the best available science to determine the biological baseline and evaluate potential impacts would thwart the purposes of NEPA.[95]

iii. Endangered and Threatened Species

According to the DWGNRA website, the park is home to a significant number of endangered, threatened, and rare species, including 49 plant species, 9 fish species, 13 mammal species, 7 reptile species, and 10 amphibian species.[96] Bergen County's Natural Resource Inventory for the Ramapo Mountains County Park identifies seven state threatened and endangered plant species within Mahwah and Oakland, three of which are included on the List of Threatened and Endangered Species that are Critically Dependent on Regulated Waters for Survival- Contorted Sphagnum (*Sphagnum contortum*), Sphagnum (*Sphagnum majus* ssp. *norvegicum*), and Small-flowered Halfchaff Sedge *(Hemicarpha micrantha*). The NEPA document must assess how impacts on water quality resulting from construction and operation, such as increased sedimentation of waterways, increased water temperatures, and impacts to groundwater recharge, would affect these plant species. The County Park also contains a globally rare, state-listed endangered species, Torrey's Mountain Mint (*Pycnanthemum clinopodiodes*), which is found in the Ramapo Valley Natural Heritage Priority Site. All possible impacts to this plant resulting from the Project must be studied.

The Ramapo Mountains County Park provides habitat to a number of threatened and endangered fauna, specifically 7 avian species, 1 mammal, 2 mollusks, 1 amphibian, and 1 reptile. The park provides critical contiguous wetland forest habitat that will be interrupted by the deforestation practices and negative impacts to stream quality associated with this Project. Loss of forest cover and stream impacts will destroy habitat for Barred Owl (*Strix varia*), Cooper's Hawk *(Accipiter cooperi*), and Red-shoulder Hawk *(Buteo lineatus*), Eastern Lampmussel (*Lampsilis radiata*), Triangle Floater (*Alasmidonta undulata*) and Wood Turtle (*Glyptemys insculpta*). The Bergen County NRI states, "the forest cover of these wetlands and high water quality of the streams are important factors in maintaining habitat suitable for

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[95] *See* 42 U.S.C. § 4332 (2006) (requiring, "to the fullest extent possible," that "all agencies of the Federal Government shall - (A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and decision making which may have an impact on man's environment"); 40 C.F.R. § 1502.6 (2010) (implementing this statute); 40 C.F.R. § 1502.8 (2010) (interpreting this statute to require Environmental Impact Statements to be written and edited "based upon the analysis and supporting data from the natural and social sciences and the environmental design arts.").

[96] *See* Nat'l Park Serv., Delaware Water Gap Park Statistics (2005) (August 15, 2005), http://www.nps.gov/dewa/parkmgmt/statistics.htm.

protected species."[97] This Project will have significant impacts on steep slope areas and rock outcrops as well, which provide habitat for the state protected Eastern Timber Rattlesnake (*Crotalus h. horridus)* and Bobcat (*Felix rufus*). The NEPA document must carefully assess whether this Project can move forward without disrupting this habitat or resulting in the taking of any of the above listed state protected species. In the 300 Line Project, TGP was obligated to avoid direct impacts to a timber rattlesnake den and to mitigate for the loss of habitat.[98]

New Jersey's Highlands Water Protection and Planning Act extends protections to all rare species as well[99] and as the Project is located in the Highlands region and must be consistent with the goals and purposes of the Highlands Act to receive an exemption from the Highlands Water Protection and Planning Council, the NEPA document must also study impacts to the following rare species:

- Cornel-leaf Aster (*Doellingeria infirma)*
- Log Fern *(Dryopteris celsa)*
- Winged Monkey-flower *(Mimulus alatus)*
- Black-girdle Woolgrass *(Scirpus atrocinctus)*
- Northern Copperhead (*Agkistrodon c. contortrix)*
- Arrowhead Spiketail (*Cordulegaster obliqua*)
- Brush-tipped Emerald (*Somatochlora walshii*)
- New England Bluet (*Enallagma laterale*)
- Sable Clubtail (*Gomphus rogersi*)
- Tiger Spiketail (*Cordulegaster erronea*)
- Williamson's Emerald (*Somatochlora williamsonii*)
- Creeper (*Strophitus undulatus*)
- Cliff Swallow

These species and their suitable habitat must be carefully studies as part of the NEPA document. Species monitoring is an extensive process and the timeframe for conducting these studies must not be cut short simply to satisfy the applicant's desired in-service date. More time may be needed to study the true impacts to these threatened, rare, and endangered species if this Project moves forward.

FERC must provide full information on this aspect of impacts as no federal agency may assist or sponsor any activity that may adversely affect an endangered species in compliance with the Endangered Species Act.[100]

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[97] Townships of Mahwah and Oakland, 2010 Natural Resource Inventory and Assessment: Ramapo Mountains County Park, 88 (Sept. 22, 2010), *available at* http://www.co.bergen.nj.us/planning/os/2010RevisedFinalRamNatResReport.pdf.

[98] *See* Permits # 0000-9-0038.1 FHA10001, 0000-09-0038.1 FWW10001, and 0000-09-0038.1 FWW10002, at 18-20 (State of New Jersey, Dep't Envtl. Prot., Land Use Regulation Program) (Sep. 23, 2010) (requiring avoidance of impacts on rattlesnakes as a condition of issuing the permits).

[99] N.J. Stat. Ann. § 13:20-2 (2004) (finding that the Highlands Region provides habitat for fauna and flora and characterizing such habitats as "exceptional natural resources;" implementing stringent land use regulations to protect such resources); N.J. Stat. Ann. § 13:20-10 (b)(3) and (c)(2) (2004) (stating wildlife conservation as one of the goals of the Regional Master Plan in the preservation and planning areas).

[100] *See* 16 U.S.C. § 1536(a)(2) (2006) (requiring each Federal agency to insure, using the best scientific and commercial data available, that any action authorized by such agency "is not likely to jeopardize the continued

The scope of study for impacts to threatened, endangered, and rare species cannot be limited to the ROW. The ROW forest buffer, and access roads and buffer must be examined for species and habitat. The effects of increased forest edge and habitat degradation due to the impacts of construction and permanent impairment of resources on these species must be analyzed as well.

iv. Invasive Species

Invasive vegetation out-competes native vegetation and spreads rapidly through forest openings.[101] The entire Project would extend the ROW an additional 75 feet during construction,[102] creating edge impacts on forest communities that were previously undisturbed. The newly-created forest edge will be a direct impact of the Project and will be a prime spot for invasive species infestation due to the increased light intensity on the newly-created edge. Moreover, the Project's disturbance of vegetation in the ROW, access roads, and temporary workspace will require re-vegetation following construction, which will itself introduce new invasive species.

The spread of invasive species, whether already established and able to find new favorable habitats due to the Project, or inadvertently brought in during re-vegetation, would have a major impact on the biodiversity of DWGNRA, the AT, and critical state and county parklands through widespread loss of native vegetation. The loss of biodiversity is a tragedy in its own right, but it will also affect visitor experience and may result in less utilization of the affected parklands by flora enthusiasts in favor of more biologically diverse sites in New Jersey and Pennsylvania. The reestablishment of native vegetation, especially considering the effects of deer herbivory,[103] will take many years, and until reestablishment is achieved the area will be susceptible to further invasive species infestation. FERC must consider these impacts in the NEPA document

Moreover, NEPA review must also encompass the impacts of invasive species on groundwater recharge. Invasive species often have shallower root systems than native plants, which allows the soil to erode more readily and to degrade the quality of watersheds by adding to "suspended sediment loads and turbidity."[104]

If TGP anticipates treating restoration sites with lime and fertilizer, infestation by invasive species might be facilitated. The impacts of adding these compounds to the soil

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existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary . . . to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section.").

101 New Jersey Audubon Society, Forest Health and Ecological Integrity Stressors and Solutions: Policy White Paper (March, 2005), *available at* http://www.njaudubon.org/Portals/10/Conservation/PDF/ForestHealthWhitePaper.pdf (stating that unpalatable exotic plants rapidly take over forest openings, because white tailed deer only eat the native plants).

102 Draft Resource Reports, *supra* note 10, at 1-10.

103 *Id.* at 6.

104 T. Stohlgren, C. Jarnevich & S. Kumar, Forest Legacies, Climate Change, Altered Disturbance Regimes, Invasive Species and Water, Unasylva 229, 2007, at 44, 47-8, *available at* http://www.fao.org/forestry/unasylva/8707/en/; Audubon Society of Portland, Invasive Plant Management http://audubonportland.org/sanctuaries/invasives (last visited Nov. 11, 2010).

structure and its effects of creating a suitable habitat for invasive species must be addressed in the NEPA document.

TGP's 300 Line Project, approved by FERC earlier this year, will cross Bearfort Mountain Natural Area, which has special protections under the NJDEP Natural Areas Program.[105] Inside Loop 325, the Loop of the pipeline which will pass through the Natural Area, TGP committed to long-term invasive species management, including inspection and maintenance to coincide with ROW mowing every 3-5 years from 2016 on.[106] TGP further committed to conduct invasive species management in Loop 325 not only within the ROW, but also in the forest buffer outside the ROW.[107]

Unless FERC requires similar management practices for the entire length of the ROW and forest buffer of the Project here, the impacts of invasive species infestations stemming from the Project will be vast, and TGP's proposed mitigation of the 300 Line Project will be for naught. The NEPA document must consider the interaction of these two tandem Projects, especially given that TGP has chosen to segment the two in such a way as to reduce the apparent impact of the proposed construction.

Finally, the financial impacts of invasive species management must be considered. If the applicant does not commit to conducting invasive species management for a long time and outside the ROW in the associated forest buffer, the NPS, NJ Division of Parks and Forestry, and county park programs will be left to foot the bill for future eradication programs and efforts. This will be especially difficult for the NPS as President Obama earlier this year announced his intention to freeze government spending for the next three years.[108] An expansion of an invasive species management program would be difficult under these conditions. State and county entities have suffered similar cuts in funding as Governor Christie has diverted funds from DEP programs to close gaps in the New Jersey State Budget and county governments are looking for ways to stabilize local taxes.[109] Just last year Governor Christie's DEP diverted money set aside for Forest Stewardship Plans on state parklands to close a budget gap.[110] The NEPA document

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105 *See* N.J. Admin. Code § 7:5A-1.8(b) (2010) (stating that the primary purpose of a Natural Area Management Plan is to "describe the natural features of the area and prescribe management practices and public uses to ensure preservation in accordance with the management objective of the natural area."); 7:5A-1.13(a)(4) (designating Bearfort Mountain Natural Area as a conservation preserve and as part of the Natural Areas system).

106 Tennessee Gas Pipeline, Comprehensive Mitigation Plan: Highlands Region 2-40 to 2-41 and Table 2.24-1 (Sept. 2009) (verifying TGP's commitment to use "[m]echanical cutting methods" incorporated into "ROW maintenance/mowing plan" to control invasive species, and its commitment to utilize herbicides on an "as-needed basis" after the third year of monitoring.), *available at* .http://www.highlands.state.nj.us/njhighlands/projectreview/tgp_cmp_091009.pdf.

107 *See* Tennessee Gas Pipeline, Invasive Species Management Plan, 300 Line Project 3 (June 2010).

108 *See* Posting of Jesse Lee to The White House Blog entitled "Budgeting for a New Era of Responsibility" (Feb. 1, 2010, 4:34 PM EST) http://www.whitehouse.gov/blog/2010/02/01/budgeting-era-responsibility.

109 *See* Office of Mgmt. and Budget, Fiscal 2011 Budget in Brief 141 (March 16, 2010), *available at* http://www.state.nj.us/treasury/omb/publications/11bib/BIB.pdf (showing DEP's 2009 actual budget as 445,357 thousand dollars, its 2010 projected budget as 377,259 thousand dollars, and its 2011 projected budget as 380,557 thousand dollars).

110 *See* Fiscal 2011 Budget Statement of Commissioner Bob Martin, Department of Environmental Protection, Before the Assembly Budget Committee, at 3 (April 12, 2010) *available at* http://www.njleg.state.nj.us/legislativepub/budget_2011/Testimony/DEP_testimony.pdf ("The NJ State Park System is managing the impact of its budget reductions through multiple means . . . In developing our FY 2011 budget projections, we have been able to use a variety of non-State General Fund revenues to keep the parks open and

must consider the Project in light of the unavailability of government resources to ensure the applicant's mitigation and restoration projects are successful on public trust lands.

The Project is likely to result in further encroachment of robust and undesirable invasive vegetation species into forest and park lands, destroying biodiversity, reducing the effectiveness of groundwater recharge, and driving away recreational visitors. Further, the Project will jeopardize invasive species mitigation measures that TGP has already promised to undertake in connection with the 300 Line Project. FERC cannot allow TGP to proceed without investigating the possible extent of these impacts during NEPA review, especially at a time when the state and federal budgets cannot cushion the affected communities from the environmental impact.

v. Landscape Connectivity

The expansion of the ROW will create further fragmentation of the forest, allowing edge species, specifically white-tail deer and cowbirds, to encroach deeper into the core forest. These edge effects can negatively impact species at least 300 feet within the forest boundary.[111] As deer herbivory is a major culprit in the declining health and biodiversity of forest sub-canopies,[112] these impacts must be examined to ensure rare, threatened, and endangered plant species populations can be maintained in the ecosystem surrounding the ROW. This will similarly decrease habitat for fauna and result in dislocation of species. These habitats must be examined to ensure no portions of the planned expansion area are an essential functional portion of a species' overall habitat requirements, such as nesting or feeding, and therefore could not or would be very difficult to replace. An overall decline in population numbers could result if the remainder of habitat area cannot meet the specific requirements of the species. Furthermore, species requiring large integral home ranges will be negatively impacted and coordination with NPS and Fish and Wildlife Service is necessary to identify whether such species will be impacted by further forest fragmentation.

E. Cultural Resources

i. Archaeological Resources

FERC must include its cultural resources guidelines in the scope of this study.[113] The DWGNRA website states that there are "487 [archaeological] sites covering more than 500 acres."[114] DWGNRA has the most significant concentration and diversity of known archeological resources, from prehistoric to historic in the northeastern U.S. Montague Township also has two significant archeological sites, Millville Historic and Archeological

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support their operations. These include the use of No Net Loss Revenues ($10 million) and the use of park staff to support wildlife management efforts ($150,000).

111 *See* Janzen, D.H., *The Eternal External Threat, in* Conservation Biology, The Science of Scarcity and Diversity (Soulé, M. E., ed. 1986).

112 *See* New Jersey Audubon Society, Forest Health and Ecological Integrity Stressors and Solutions: Policy White Paper 9 (March, 2005), *available at* http://www.njaudubon.org/Portals/10/Conservation/PDF/ForestHealthWhitePaper.pdf (stating that "[e]levated deer densities have devastating impacts on the understory of forests and even the regeneration of the forest itself.").

113 *See* FERC Office of Energy Projects, Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects (Dec. 2002), *available at* http://www.ferc.gov/industries/gas/enviro/culresor.pdf.

114 Nat'l Park Serv., Delaware Water Gap Park Statistics (2005) (Aug. 15, 2005), http://www.nps.gov/dewa/parkmgmt/statistics.htm.

District and Minisink Archaeological Historic District. There are also a number of archeological sites surrounding the Monksville Reservoir. These resources are protected by the Archeological Resources Protection Act of 1979,[115] which requires that permits be issued to remove or excavate all archeological resources that will be impacted by the Project before construction can begin.[116] Thorough studies must be conducted along the ROW, access roads, and all areas that will be potentially impacted by this Project, i.e. locations along the Delaware River, for such resources to determine impacts and if excavation would be successful. This will require cooperation with tribal groups for permission to remove these remnants.[117] All areas must be identified and studied in depth before permits can be granted to the applicants.

ii. Viewsheds

Bergen County Department of Planning and Economic Development is currently developing a management plan for the Ramapo Mountains County Park, which the existing TGP ROW crosses at Ramapo Reservation. As part of the planning process, a Natural Resource Inventory (NRI) was compiled. This document specifically lists the existing gas pipeline ROW as a constraint, stating, "views [are] interrupted by utility easements."[118] TGP will be widening their ROW with this Project, exaggerating the impact on the Reservation if this Project is approved. As the county has already identified the existing ROW as a constraint that depletes visitor enjoyment of the Ramapo Reservation, this impact must be examined as a serious resource concern, especially with regard to scenic views from Bald Mountain.

Viewshed impacts should be examined in a way that describes any physical changes to the landscape, examines consistency with the objectives of the NPS, Highlands Council, and state[119] and county parkland management plans to preserve scenic resources, compatibility in mass, scale, and prominence, and degree of contrast in line, color, and form.

Viewer sensitivity will be extremely high to viewshed impacts as the lands impacted by the Project are some of the last remaining contiguous forests in the state and are preserved lands highly utilized by recreational visitors. Altering the natural visual environment on these lands through the expansion of a gas pipeline would be adverse to user's expectations that the area will have natural, wild viewsheds. These impacts should be heavily weighted keeping in mind the objectives of the DWGNRA, Appalachian Trail, and the Highlands Act and RMP. Congress has conferred the authority to build critical infrastructure projects on federal lands, But, commenters urge FERC to follow Congress's consistent recognition that any construction must be subject to the long-standing laws (such as the NPS Organic Act and National Trails System Act) that conserve those unique American spaces that still provide scenic, natural vistas ROWs for projects on federal lands.

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115 *See* 16 U.S.C.§§ 470aa-mm (2006).

116 43 CFR §§ 7.4, 7.5 (2010).

117 43 CFR § 7.7 (2010).

118 Townships of Mahwah and Oakland, 2010 Natural Resource Inventory and Assessment: Ramapo Mountains County Park, ix (Sept. 22, 2010), *available at* http://www.co.bergen.nj.us/planning/os/2010RevisedFinalRamNatResReport.pdf.

119 On information and belief, a specific condition of the conveyance of Ringwood Manor to the State of New Jersey included a provision asserting that the scenic view could not be marred.

In particular, the Bureau of Land Management's Visual Resources Management Program under the Department of the Interior sets a high management standard for Visual Resource Management (VRM) class I.[120] Given their substantial importance in terms of scenic quality, cultural importance, and uniquely preserved nature in a highly developed and urbanized region, affected resources like DWGNRA and the AT should qualify for VRM class I status. To properly assess these impacts, following must be identified: probable viewers and their viewer sensitivity, all significant vistas and viewsheds that could be impacted by any of the alternatives, and the dominant elements of the current viewsheds and how each alternative will impact that viewshed or vista. Moreover, the construction activities, expansion of the ROW, and clearing of access roads will produce localized scenic resource impacts that must be assessed in the NEPA document. The document should address all foreground, middle-ground, and background vistas in its analysis of impacts.

F. Air Quality and Noise

i. Air Quality

This Project will have serious impacts on the air quality along the ROW, ROW buffer, access roads, and surrounding landscape. Air quality degradation needs to be examined in relation to visitor experience and wildlife. Diesel emissions during construction will also impact visitor experience and wildlife. Further increases in diesel emissions as a result of the Project may lead to a higher level of ozone along the ROW as the cleared ROW provides more sunlight for nitrogen oxides and reactive organic gases to combine.

The cumulative impact analysis also should include consideration of the incremental impact of the Project on air quality, added to the air quality impacts of existing and reasonably foreseeable Marcellus Shale development in the region, including other pipeline construction. Natural gas and oil production and transmission emit substantial amounts of air pollution, including volatile organic compounds ("VOCs"), nitrogen oxides ("NOx"), and toxic air pollutants.[121] The toxic air pollutants include benzene, a known carcinogen; toluene, nhexane, and xylenes, which can lead to nervous system effects; and ethylbenzene, which can cause blood disorders.[122] Recent tests suggest that compressor stations also may emit harmful levels of formaldehyde, another known carcinogen.[123] VOCs and NOx contribute to local and regional ozone pollution, which has serious impacts on human respiratory and cardiovascular health as well as on vegetation and forest ecosystems.[124] Particulate matter too, whether directly emitted

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120 Bureau of Land Mgmt., Manual H-8410-1 - Visual Resource Inventory, at V.B.1., *available at* http://www.blm.gov/nstc/VRM/8410.html (providing that "[t]he objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention").

121 *See* Al Armendariz & Envtl. Def. Fund, Emissions from Natural Gas Production in the Barnett Shale Area and Opportunities for Cost-Effective Improvements 24 (2009), *available at* http://www.edf.org/documents/9235_Barnett_Shale_Report.pdf; *see also* Envtl. Prot. Agency, Outdoor Air – Industry, Business, and Home: Oil and Natural Gas Production – Additional Information, http://www.epa.gov/oaqps001/community/details/oil-gas_addl_info.html (last visited Nov. 11, 2010).

122 *See Id.*

123 *See* Aman Batheja, *Carcinogen from gas compressor stations being monitored*, Star-Telegram, Oct. 4, 2010, *available at* http://www.star_telegram.com/2010/10/03/2516374/formaldehyde-from-gas-compressor.html.

124 *See* National Ambient Air Quality Standards for Ozone, 75 Fed. Reg. 2,938, 2,938, 3,000 (Jan. 19, 2010);

from exhaust and fugitive dust during construction or from operation of diesel-fired engines or indirectly created from interactions of NOx emissions in the atmosphere, affects respiratory and cardiovascular health.[125]

An examination of 2009 emissions data shows that in north-central Texas, VOCs and NOx emissions from compressor engines in the Barnett Shale area amounted to four times the emissions from all airports in the Dallas-Forth Worth area,[126] which includes the Dallas-Forth Worth International Airport, one of the busiest airports in the world. 2009 NOx and VOC emissions from Barnett Shale oil and gas development generally were comparable to emissions from all the cars and trucks in the nine-county Dallas-Fort Worth metropolitan area.[127] These figures suggest that any proper assessment of a Marcellus Shale development project must consider the cumulative impacts of all oil and gas development in the area in order to truly comprehend the Project's effect on the quality of the human environment.

The NEPA document must assess air emissions from the construction and operation of the Project infrastructure based on the cumulative impact of the proposed hub line's emissions *together with* air emissions from existing and reasonably foreseeable Marcellus development.

ii. <u>Noise</u>

FERC must explore the impacts of construction, operation, and maintenance of the Project on wildlife and visitor experience.

Noise associated with construction can have a devastating impact on wildlife. Certain species depend on hearing for courtship and mating behavior, prey location, predator detection, or homing and will suffer serious detrimental impacts from construction. Such aspects of temporary impacts must be considered.

Noise impacts to visitor experience must be examined as sensitivity to noise is very variable and these impacts may led to less utilization of the associated parklands by the public. These areas are generally given additional protection when projects are evaluated. For example, the Federal Highway Administration's Exterior Noise Abatement Criteria has an activity category "Land where serenity and quiet are of extraordinary importance" and the maximum noise level is 57 dBA.[128] Consequently, we urge FERC to consider the proposed construction area a noise sensitive area and hold the Project to at least the minimal standards[129] given other sensitive areas (i.e. a 55 dBa day/night limit for new compressor stations) and also evaluate whether even that impact might be excessive in terms of affecting natural preservation and public enjoyment of the Highlands wilderness resource.

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see also Judy Fahys, *Ozone Raises Its Ugly Head in Utah*, Salt Lake Tribune, Oct. 21, 2010, *available at* http://www.sltrib.com/sltrib/home/50516943-76/ozone-county-basin-epa.html.csp.

125 Envtl. Prot. Agency, Particulate Matter: Health and Environment, http://www.epa.gov/pm/health.html (last visited Nov. 11, 2010).

126 *See* Armendariz, *supra* note 121, at 25.

127 *See id*.

128 23 C.F.R. § 772.19 (2010) (Table I ("Noise Abatement Criteria") sets a limit of 57 dBA for "[l]ands on which serenity and quiet are of extraordinary significance and serve an important public need and where preservation of those qualities is essential if the area is to continue to serve its intended purpose").

129 *See* 18 C.F.R. § 157.206(b)(5).

In addition, given the scale of the Project and sensitivity of its location, FERC must include construction impacts in the scope of its environmental review. To determine these impacts, the applicant must be asked to provide specific details on construction activities, including the type of equipment that will be used and when it will be used, what season and time of day construction activities will occur, and the specific noise-producing attributes of each piece of equipment. Noise levels produced at 50 ft are about 84 to 85 dBA from backhoes and bulldozers, 91 to 92 dBA from graders, and 80 to 88 dBA from compressors.[130]

The possibility of ground-borne vibration and noise impacts related to construction activities on habitat, steep slopes, etc. must be studied. Resources near the Project will be especially susceptible to ground-borne vibration as the applicant is proposing to construct an underground pipeline that will require the creation of a trench across an extremely sensitive landscape.

Noise impacts to the landscape will be exacerbated by the expansion of the ROW and the removal of vegetation. As the ROW expands, noise from construction, operation, and maintenance of the pipeline will penetrate farther into the forest, affecting wildlife. FERC must assess the severity and nature of this impact.

The movement of construction equipment and long-term maintenance vehicles may impact sensitive receptors in the surrounding local communities along utilized roadways and access roads. Further, if detours are used during the construction project, the roadways that bear the re-directed traffic may be impacted by the increased noise. The NEPA document must address both of these secondary noise impacts.

Conclusion

FERC must require a full Environmental Impact Statement that analyzes the extensive and egregious impacts the Project threatens on water resources, forest ecosystems, habitats, air quality, and parks and open space. The NEPA document must assess cumulative and secondary impacts. To do so, the analysis must be thorough and objective.

Thank you for the opportunity to comment on the scope of the assessment. We look forward to full participation in this important process.

Sincerely,



Susan J. Kraham
Senior Staff Attorney
Counsel for Commenters

[130] U.S. Department of Transportation, FHWA, CADOT, and SBAG 1993.