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Subject: FYI -- FW: Need to revise or supplement the Mountain Valley Pipeline DEIS
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Attachments: [Need for a revised or supplemental DEIS.pdf](#)

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Subject: Need to revise or supplement the Mountain Valley Pipeline DEIS

Greetings:

Earlier today, a coalition of 27 conservation and community groups filed comments with the Federal Energy Regulatory Commission (FERC) regarding the need for FERC to revise or supplement the draft environmental impact statement (DEIS) for the proposed Mountain Valley Pipeline and Equitrans Expansion Projects (FERC Dockets CP16-10-000 and CP16-13-000). The comments are attached. In addition, you can access the comments and exhibits via FERC's eLibrary at the following link:

http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14505441

Thank you,
Ryan

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October 19, 2016

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

Re: Draft Environmental Impact Statement for the Mountain Valley Pipeline (Docket No. CP16-10-000) and Equitrans Expansion Project (Docket No. CP16-13-000)

Dear Secretary Bose:

On behalf of Allegheny Defense Project, Appalachian Mountain Advocates, Appalachian Voices, Chesapeake Climate Action Network, Friends of Nelson, Friends of the Lower Greenbrier River, Greenbrier River Watershed Association, Heartwood, Indian Creek Watershed Association, Mountain Lakes Preservation Alliance, Natural Resources Defense Council, Ohio Valley Environmental Coalition, Preserve Giles County, Preserve Greenbrier County, Preserve Monroe, Preserve Montgomery County Virginia, Preserve Newport Historic Properties, Protect Our Water, Heritage, Rights (POWHR), Save Monroe, Sierra Club, Summers County Residents Against the Pipeline, The Border Conservancy, Virginia Chapter of the Sierra Club, West Virginia Chapter of the Sierra Club, West Virginia Highlands Conservancy, West Virginia Rivers Coalition, and Wild Virginia, we submit the following comments regarding the need for a Revised or Supplemental Draft Environmental Impact Statement (“DEIS”) for the proposed Mountain Valley Pipeline and Equitrans Expansion Projects (collectively, “MVP Project” or “Project”) in the above-referenced dockets. In the comments below, we outline many of the substantial deficiencies in the DEIS that must be corrected through the issuance of a Revised or Supplemental DEIS, including the failure to fully evaluate the need for the MVP Project and the failure to fully evaluate the impacts to water resources, wetlands, cultural resources, threatened and endangered species, and climate change implications. Correcting these deficiencies will require significant new analysis and the incorporation of high quality and accurate information regarding the MVP Project’s impacts. Public scrutiny of environmental decisionmaking, informed by high quality and accurate information, is essential to compliance with the National Environmental Policy Act (“NEPA”). 40 CFR § 1500.1(b). In light of these circumstances, we urge FERC to issue a Revised or Supplemental DEIS for the MVP Project, and provide sufficient opportunity for public comment. FERC must supply information and analysis regarding the MVP Project in a manner that facilitates meaningful analysis and public participation. The Commission should use this as an opportunity to correct the substantial deficiencies in the DEIS, thereby furthering the purposes of NEPA.

I. Legal Requirements for a Revised or Supplemental Environmental Impact Statement

NEPA’s EIS requirement “guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). Information must be provided in a timely manner to ensure that the public can

meaningfully participate in the decisionmaking process. *League of Wilderness Defenders/Blue Mountain Biodiversity Project v. Connaughton*, 752 F.3d 755, 761 (9th Cir. 2014) (“Informed public participation in reviewing environmental impacts is essential to the proper functioning of NEPA.”). An agency must “not act on incomplete information, only to regret its decision after it is too late to correct.” *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 371 (1989).

When an agency publishes a draft EIS, it “must fulfill and satisfy to the fullest extent possible the requirements established for final statements in section 102(2)(C) of the Act.” 40 C.F.R. § 1502.9(a). “If a draft statement is so inadequate as to preclude meaningful analysis, the agency *shall* prepare and circulate a revised draft of the appropriate portion.” *Id.* (emphasis added). “The agency shall make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action.” *Id.* An EIS that fails to provide the public a meaningful opportunity to review and understand the agency’s proposal, methodology, and analysis of potential environmental impacts violates NEPA. *See e.g., California ex rel. Lockyer v. U.S. Forest Service*, 465 F. Supp. 2d 942, 948-50 (N.D. Cal. 2006); *see also Idaho ex rel. Kempthorne v. U.S. Forest Service*, 142 F.Supp.2d 1248, 1261 (D. Idaho 2001) (“NEPA requires full disclosure of all relevant information before there is meaningful public debate and oversight.”).

Furthermore, NEPA requires a supplement to an EIS when significant new information or changes in a project implicate significant changes in the environmental analysis. The NEPA regulations require that:

- (1) [Agencies] . . . [s]hall prepare supplements to either draft or final environmental impact statements if: (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.
- (2) [Agencies] may also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so.

40 C.F.R. § 1502.9(c). The use of the word “shall” is mandatory and creates a duty on the part of the agency to prepare a supplemental EIS if substantial changes are made or if there is significant new information relevant to environmental concerns. *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 372 (1989) (recognizing the duty where there are significant new circumstances or information); *see also Dubois v. U.S. Dep’t. of Agric.*, 102 F.3d 1273, 1292 (1st Cir. 1996).

When determining if new circumstances or new information require an agency to issue a supplemental EIS, the following factors should be considered: (a) the environmental significance of the new information; (b) its probable accuracy; (c) the degree to which the agency considered the new information and considered its impact; and (d) the degree to which the agency supported its decision not to supplement its impact statement with explanation or additional data. *Warm Springs Dam Task Force v. Gribble*, 621 F.2d 1017, 1025 (9th Cir. 1980); *Commonwealth of Massachusetts v. Watt*, 716 F.2d 946 (1st Cir. 1983).

II. FERC must prepare a Revised or Supplemental DEIS for the MVP Project.

A. FERC must prepare a Revised DEIS due to the substantial lack of information in the DEIS regarding the need for the MVP Project and its environmental impacts.

1. FERC must analyze and discuss the purported need for the MVP Project in the DEIS.

NEPA regulations require FERC to “specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” 40 C.F.R. § 1502.13. FERC must “exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the project.” *Simmons v. U.S. Army Corps of Eng.’s*, 120 F.3d 664, 669 (7th Cir. 1997) (*quoting Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 209 (D.C. Cir. 1991) (Buckley, J., dissenting)). FERC “cannot restrict its analysis to those ‘alternative means by which a particular applicant can reach his goals.’” *Id.* (*quoting Van Abbema v. Fornell*, 807 F.2d 633, 638 (7th Cir. 1986)); *see also Nat’l Parks & Cons. Ass’n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1072 (9th Cir. 2009) (finding a purpose and need statement that included the agency’s goal to address long-term landfill demand and the applicant’s three private goals was too narrowly drawn and constrained the possible range of alternatives in violation of NEPA).

Despite the clear requirement to discuss the need for the MVP Project in the DEIS, FERC says that it will not address project need until *after* the environmental analysis is over:

[T]his EIS is not a decision document, and it does not address in detail the need or public benefits of either the MVP or the [Equitrans Expansion Project]. The Commission will more fully explain its opinion on project benefits and need *in its Orders* for the MVP and the EEP.

DEIS at 1-9 (emphasis added). FERC has made similar statements in other recent DEIS documents for major greenfield pipelines. *See, e.g., Atlantic Sunrise DEIS* at 1-2 (“While this EIS briefly describes Transco’s stated purpose, it will not determine whether the need for the Project exists, because this will later be determined by the Commission.”) (Docket No. CP15-138-000). The EPA expressed concern that “project need will not be vetted in the [Atlantic Sunrise] EIS, but outside of the NEPA process by FERC.” EPA, *Comments on the Atlantic Sunrise DEIS – Cover Letter*, at 2 (June 27, 2016) (“EPA Atlantic Sunrise Comments”) (Ex. 1). Without assessing the need for the project in the DEIS, FERC undermines the development of alternatives to the proposed project, which is a “critical component of the NEPA process.” *Id.* EPA has stated that without this information in the DEIS, FERC failed to “provide transparency in the decision-making process,” thereby frustrating the public’s “opportunity to provide comment” on the DEIS. *Id.*

The MVP DEIS suffers from the same deficiencies. Without assessing the need for the MVP Project in the DEIS, FERC undermines the development of reasonable alternatives to the proposed project. The alternatives analysis is the “heart of the [EIS].” 40 C.F.R. § 1508.14.

Without disclosing and discussing the need for the MVP Project, FERC fails to provide transparency in the decisionmaking process and thereby frustrates the public's opportunity to provide meaningful comments on the DEIS. The public's right to weigh in on the assessment of need is particularly critical for a project such as MVP, which would impact both state and federal public lands and require the use of eminent domain over the objections of numerous landowners along the proposed route. In such instances, there must be even greater scrutiny of project need in the DEIS. The procedures of the Natural Gas Act cannot replace the full and fair public participation in the decisionmaking process that NEPA mandates. Therefore, the DEIS is "so inadequate as to preclude meaningful analysis" and FERC "shall prepare and circulate a revised draft[.]" 40 C.F.R. § 1502.9(a).

2. Lack of Relevant Environmental Information

In addition to failing to properly disclose and consider the need for the MVP Project, the DEIS lacks sufficient information about the MVP Project and its potential environmental impacts on a wide variety of resources, including water resources, wetlands, cultural resources, threatened and endangered species, and climate change implications. The DEIS recommends that some of this missing information be supplied by the applicants either by the end of the DEIS comment period or before construction begins. *See* DEIS at 5-20 – 5-24. That means the public will not have an opportunity to meaningfully review and comment on this information before the final EIS is issued. Therefore, this information should have been included in the DEIS.

Only the issuance of a revised or supplemental DEIS that thoroughly analyzes this missing information will satisfy NEPA's public comment procedures, which "[encourage] public participation in the development of information during the decision making process." *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 508 (9th Cir. 1988). Simply adding this missing information to the final EIS is insufficient, as it does not allow the same degree of meaningful public participation. *Id.* (citing *California v. Block*, 690 F.2d 753, 770-71 (9th Cir. 1982)) ("It is only at the stage when the draft EIS is circulated that the public and outside agencies have the opportunity to evaluate and comment on the proposal...No such right exists upon issuance of a final EIS."); 40 C.F.R. § 1500.1(b).

FERC's failure to include significant amounts of critical environmental information in the DEIS seems to be part of a recent trend in draft EISs prepared by FERC for major greenfield pipelines. For example, in comments on the DEIS for the Constitution Pipeline, EPA stated that a substantial amount of information was omitted from the DEIS, including information regarding impacts to geology and soils, waterbodies, wetlands, wildlife and vegetation, air emissions, and cumulative impacts. EPA, *Comments on the Constitution Pipeline DEIS* at 3-9 (Apr. 9, 2014) (Ex. 2). EPA repeatedly explained that the lack of information prevented other agencies and the public from meaningfully participating in the NEPA process. *See, e.g., id.* at 3 (The lack of information "negates the ability of agency specialists and the public to review the analysis and comment on it.").

In comments on the Atlantic Sunrise Pipeline DEIS, EPA stated it was "concerned about the amount of detailed information that has yet to be filed and is not evaluated in the DEIS." EPA Atlantic Sunrise Comments at 2. This missing information includes:

surveys for land, rare, species, historic resources, water supplies, air modeling, mitigation measures to manage and dispose of contaminated groundwater, proposed mitigation measures for source water protection areas, geotechnical feasibility studies for HDD crossing locations and mitigation measures to minimize drilling risks, and a detailed aquatic resource compensatory mitigation plan.

Id. EPA explained that this information is both “relevant and critical to evaluation of potential impacts” and that “a fully informed decision may not be made without this information.” *Id.* EPA also stressed that this missing information needs to be “disseminated and appropriately evaluated with the resource agencies and public stakeholder participation prior to the issuance of any certificates by FERC.” *Id.* EPA specifically recommends that FERC do this “through the use of a revised DEIS.” *Id.*

In comments on the DEIS for the Sabal Pipeline, EPA said that it had “very significant concerns over the FERC’s process and full and objective compliance with the NEPA regulations at 40 CFR Part 1500.” EPA, *Comments on the Southeast Market Pipeline Project DEIS* at 1 (Oct. 26, 2015) (Ex. 3). EPA even suggested that FERC “appear[ed] to be justifying decisions made prior to implementing the NEPA process.” *Id.* at 9.

In comments on the DEIS for the PennEast Pipeline, EPA said it had “significant concerns regarding the alternatives analysis, a number of important topics for which *information is incomplete*, and the direct, indirect and cumulative impacts of the proposed action on the environment and public health, including impacts to terrestrial resources, including interior forests, aquatic resources, and rare, threatened and endangered species.” EPA, *Comments on the PennEast Pipeline DEIS*, at 1 (Sept. 16, 2016) (Ex. 4) (emphasis added). EPA emphasized that “[a] significant amount of information is omitted from the DEIS and is proposed to be filed by the project proponent at a future date.” *Id.* at 3. EPA stressed that “[f]ailing to consider this information in the DEIS leads to gaps in the data and lack of potentially important information for the decision maker.” *Id.* As it did in comments on the Atlantic Sunrise DEIS, EPA specifically requested that FERC prepare a “revised DEIS” for the PennEast Pipeline to account for these significant deficiencies.

Recent EPA comments indicate that FERC is not remedying these deficiencies before publication of a Final EIS (“FEIS”). For example, in comments on the DEIS for the Leach Xpress Pipeline, EPA said that FERC:

... did not include estimates of the GHG emissions associated with the production, leakage, and combustion of the natural gas transported by this proposal. Because of the causal relationship between this project and the emissions, it is appropriate and consistent with NEPA and CEQ regulations to consider and disclose the emissions levels in NEPA analyses.

EPA, *Comments on the Leach Xpress Pipeline DEIS*, at 20 (June 6, 2016) (Ex. 5). EPA recommended that “the FEIS include estimates of emissions from production, leakage, and

combustion of the natural gas transported by the proposal.” *Id.* EPA also faulted FERC for comparing project-level GHG emissions to State-wide emissions. *Id.*

In comments on the Leach Xpress Pipeline FEIS, EPA said that FERC “perpetuates the significant omission documented through our comments on the DEIS with respect to a proper climate change analysis to inform the decision making process.” EPA, *Comments on the Leach Xpress FEIS*, at 2 (Oct. 11, 2016) (“EPA Leach Xpress FEIS Comments”) (Ex. 6). In particular, EPA said that:

The FEIS did not include estimates of the indirect GHG emissions that would be caused by the proposal and its alternatives, including effects of production, and combustion of the natural gas transported by this proposal. FERC’s response to EPA’s comments on its Draft EIS indicated non-concurrence with the recommendation to calculate the indirect emissions associated with end use product combustion. Combustion of the product is a reasonably foreseeable effect of this project, and falls squarely within the obligation to consider indirect impacts under NEPA. The CEQ GHG Guidance makes this same point, and uses the end use product combustion of fossil fuel as a specific example of the kind of indirect effect that should be considered under NEPA.

Id. at 6-7. EPA was also critical of FERC continuing to compare project-level GHG emissions to State-wide emissions when “that concept is not included in the final [CEQ GHG Guidance].” *Id.* at 7. Consequently, EPA says:

We view FERC’s response to our comments as very concerning in light of CEQ’s GHG Guidance and request a headquarters level meeting with us to seek a definitive resolution to this matter before you publish a Record of Decision (ROD) and so that you do not continue to take this approach in additional NEPA documents.

Id. EPA’s comments reveal a pattern of FERC publishing significantly deficient draft statements for major greenfield pipelines before it obtains critically important information from the applicant – information that is needed in order to fully understand the project and its environmental consequences. EPA’s comments on the Leach Xpress Pipeline FEIS reveal that those deficiencies are not addressed or remedied in the FEIS.

Here, FERC has published a DEIS for another major greenfield pipeline project, the MVP Project. Once again, there is a substantial amount of critical information and analysis that is omitted from the DEIS. Notably, the MVP DEIS suffers from the same deficiencies regarding GHG emissions that EPA criticized in the Leach Xpress DEIS and FEIS.

For example, FERC estimates total annual emissions of the MVP Project at 40 million tons per year. *See* DEIS at 4-516. FERC claims that gas transported by the MVP Project could “result in the displacement of some coal use, thereby potentially offsetting some regional GHG emissions.” *Id.* At no point, however, does FERC analyze whether the MVP Project emissions are “instead of” or “in addition to” existing emissions. This is an important factor since the total

annual emissions for the MVP Project is larger than emissions from the top three coal-fired power plants (Amos, Harrison, and Mount Storm) in West Virginia. *See* EPA, Air Markets Program Data, available at <https://ampd.epa.gov/ampd/> (Ex. 7).

In addition, FERC does not analyze the significance of the total annual MVP Project GHG emissions in any meaningful way. Instead, FERC compares the total annual GHG emissions of the MVP Project to “the global GHG emission inventory.” DEIS at 4-516. This comparison serves only to minimize the MVP Project’s GHG emissions and does not provide any meaningful information. *See id.* (noting that GHG emissions from MVP Project would be “negligible” compared to the global GHG inventory). EPA recently criticized FERC for comparing the estimated emissions of the Leach Xpress Project “to state GHG emission levels.” EPA Leach Xpress FEIS Comments at 7. EPA explained that “[c]omparing one project’s direct and indirect emissions to aggregated totals is not an appropriate way to consider the impact of emissions” and is inconsistent with the CEQ GHG Guidance. *Id.*

In addition to the significant flaws regarding GHG emissions, there is a significant amount of information regarding other environmental impacts that is missing from the DEIS and will not be provided by the applicants in a manner that facilitates meaningful public disclosure and participation. This includes the following:

- **Information that MVP does not have to provide until the end of the DEIS comment period:**
 - Documentation of continued coordination with the Forest Service and other Appalachian Trail stakeholders regarding the newly adopted pipeline crossing, including visual simulations modeling both “leaf-on” and “leaf-off” scenarios at the crossing.
 - Results of on-site surveys for the Mount Tabor Route Alternative to assess constructability and identify karst features that shall be adopted if the alternative is adopted into the proposed pipeline route.
 - Additional information on the tracts identified in table 3.5.3-1 of the DEIS.
 - A complete list of any locations not already found acceptable by FERC staff where the pipeline route or access road parallels a waterbody within 15 feet or travels linearly within the waterbody channel.
 - Plans and maps that illustrate how permanent impacts on wetlands would be avoided at the WB Interconnect. If such impacts cannot be avoided, MVP shall propose a new upland location for the facility and include new site plans and maps.
 - Site-specific justifications for each of the wetlands for which MVP requests a right-of-way greater than 75 feet.
 - A plan that describes how long-term and permanent impacts on migratory bird habitat would be minimized, with an emphasis on high quality and/or larger intact core interior forest areas.
- **Information that Equitrans does not have to provide until the end of the DEIS comment period:**

- The current status of easement negotiations for the Redhook Compressor Station and alternative sites and analysis if those negotiations have been unsuccessful.
- Information regarding the potential construction feasibility of the Cline Route Alternative, including more detailed analysis of potential issues associated with either an open-cut or road crossing at Raccoon Creek and Raccoon Run Road.
- **Information that MVP does not have to provide until after the certificate is issued:**
 - A plan for the avoidance of active mines, or copies of agreements with coal companies regarding compensation for loss of coal resources.
 - A revised Landslide Mitigation Plan that includes:
 - An analysis of the potential landslide hazards at the GCSZ, Peters Mountain, Sinking Creek Mountain, and Brush Mountain based on the results of investigations conducted by Schultz and Southworth (1989), and further identified and discussed in USGS Bulletin 1839-E;
 - An identification of landslide hazards where the pipeline routes through areas comprised of both steep slopes and red shale bedrock of the Conemaugh, Monongahela, Dunkard, and Mauch Chunk Groups;
 - An analysis of a potential debris flow zone within the Jefferson National Forest from MP 195.5 along the Kimballton Branch to the junction of Stoney Creek; and
 - Minor route adjustments as a method to avoid areas of potential slides and debris flows.
 - Results of MVP's fracture trace/lineament analysis.
 - Site-specific plans, including details regarding materials to be used and installation methods, for the use of permanent culverts and permanent fill in waterbodies and wetlands for access roads. MVP shall include a detailed analysis of all reasonable alternatives to the use of culverts and permanent fill.
 - Results of quantitative modeling for turbidity and sedimentation associated with wet open-cut crossings of the Elk River, Gauley River, and Greenbrier River. The analysis shall address the duration, extent, and magnitude of turbidity levels and assess the potential impacts on resident biota. The analysis should also include a discussion on the physical and chemical characteristics of the sediments, the estimated area affected by the transport and redistribution of the sediments, and the effect of the suspension and resettlement on water quality as well as an assessment of the effectiveness of the proposed turbidity curtains.
 - HDD feasibility and geotechnical studies for the alternative alignments identified for the Pigg River crossing at MP 286.8 and the Blackwater River crossing at MP 262.8.
 - Contingency plans outlining measures that would be taken to minimize and mitigate potential impacts on public surface water supplies with intakes within 3 miles downstream of the crossing of the MVP pipeline, and ZCC within 0.25-mile of the pipeline.
 - Results of all remaining environmental surveys (water resources, wetlands, cultural resources, and threatened and endangered species) for all cathodic protection groundbeds.

- Evidence of landowner concurrence with the site-specific residential construction plans for all locations where construction work areas would be within 10 feet of a residence, as indicated in bold in table 4.8.2-1.
 - Documentation that the Weston and Gauley Bridge Turnpike Crossing Plan was reviewed by the COE.
 - Documentation that the Blue Ridge Parkway Crossing Plan was reviewed by the National Park Service.
 - Documentation that the U.S. Highway 50 and North Bend Rail Trail Crossing Plan was reviewed by the WVDOT and WVDNR.
 - Documentation of further coordination with TNC and VDCR of regarding the Mill Creek Springs Natural Area Preserve and include any impact avoidance, minimization, or mitigation measures developed.
 - Documentation that MVP's VOF parcels crossing plans were reviewed by the VOF.
 - Documentation that the TNC Property Crossing Plan was reviewed by TNC.
- **Information that Equitrans does not have to provide until after the certificate is issued:**
 - HDD noise mitigation plan to reduce the projected noise level increase attributable to the proposed drilling operations at the NSAs.
- **Information that neither MVP nor Equitrans has to provide until after the certificate is issued:**
 - The location of all water wells, springs, swallets, and other drinking water sources within 150 feet (500 feet in karst terrain) of the pipeline and aboveground facilities.
- **Information that MVP does not have to provide until after the certificate is issued:**
 - All outstanding biological surveys for federally listed species (*i.e.*, Ellett Valley millipede, bog turtle, and running buffalo clover).
 - Remaining cultural resources survey reports, site evaluation reports, avoidance plans, or treatment plans.

DEIS at 5-20 – 5-24. This list makes clear that FERC has not “ma[d]e every effort to disclose and discuss at appropriate points *in the draft statement* all major points of view on the environmental impacts of the alternatives including the proposed action.” 40 C.F.R. § 1502.9(a) (emphasis added).

The information described above should have been included in the DEIS; without this information, FERC cannot perform a fully informed evaluation of potential impacts and pipeline routing decisions. By publishing the DEIS without the foregoing information, FERC failed to “guarantee[] that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The missing information will almost certainly not be disclosed in time for affected landowners and the broader public to adequately review and comment during the DEIS comment period. Thus, the

DEIS is “so inadequate” that it “preclude[s] meaningful analysis” and FERC “shall prepare and circulate a revised draft[.]” 40 C.F.R. § 1502.9(a).

B. Alternatively, FERC must prepare a Supplemental DEIS after the applicants submit all of the currently missing environmental information.

As explained above, the DEIS is inadequate due to the substantial amount of incomplete information and analysis, which precludes meaningful review. 40 C.F.R. § 1502.9(a). Thus, FERC must prepare a revised DEIS. Alternatively, due to the sheer volume of information that FERC is not requiring the applicants to provide until either the end of the DEIS comment period or before construction, this information (once submitted) will constitute significant new information for which a Supplemental DEIS “shall” be prepared. 40 C.F.R. § 1502.9(c)(1)(ii). This information is also likely to result in substantial changes to the proposed action for which a Supplemental DEIS “shall” be prepared. *Id.* § 1502.9(c)(1)(i). Moreover, preparing a Supplemental DEIS that considers this new information will further the purposes of NEPA. *Id.* § 1502.9(c)(2).

C. The issuance of a Final EIS with a comment period is inconsistent with the requirements and purpose of NEPA

Issuance of a Final EIS with a comment period, in lieu of a Revised or Supplemental DEIS, would not satisfy the requirements and purpose of NEPA. NEPA was enacted to “insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.” 40 CFR § 1500.1(b). It is essential that that environmental information is high quality and based upon “accurate scientific analysis, expert agency comments and public scrutiny.” *Id.* Furthermore, part of the NEPA process includes the public’s opportunity to understand the agency’s response to these comments. Even with a comment period, a Final EIS will not allow informed public scrutiny of and input into the decision making process before a “decision is made and before actions are taken.” *Id.* See also *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 508 (9th Cir. 1988). For the reasons outlined in this letter, FERC must prepare a Revised or Supplemental DEIS that corrects the significant deficiencies in the DEIS that have been identified above.

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Enclosures (7)

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Jeffrey D. Lapp (EPA, Region 3, Office of Environmental Programs)
Tom Speaks (U.S. Forest Service)
Wendy Janssen (National Park Service)
Bruce Dawson (Bureau of Land Management)
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Sen. Mark Warner
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Rep. Don Beyer
Rep. Bobby Scott
Rep. Robert Goodlatte
Rep. Morgan Griffith
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State Sen. John Edwards
Delegate David Toscano
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ORIGINAL



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 SECRETARY OF THE
 COMMISSION
 JUN 27 2016
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 FEDERAL ENERGY
 REGULATORY COMMISSION

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

Re: Atlantic Sunrise Project Draft Environmental Impact Statement; Pennsylvania, Maryland, Virginia, North Carolina and South Carolina; May 2016 (FERC Docket No. CP15-138; CEQ# 2016-11223)

Dear Deputy Secretary Davis:

In accordance with the National Environmental Policy Act (NEPA) of 1969, Section 309 of the Clean Air Act and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for Transcontinental Gas Pipe Line Company, LLC's (Transco or the applicant) Atlantic Sunrise Project. The DEIS has been prepared by the Federal Energy Regulatory Commission (FERC) tasked with approving certificates for interstate natural gas pipeline facilities. Additionally, EPA is concurrently reviewing the Clean Water Act Section 404 Public Notice (PN) issued by the U.S. Army Corps of Engineers (Corps or USACE) Baltimore District, a cooperating agency on the DEIS, and will also be providing comments on the proposed project in response to the PN.

Transco proposes to construct and operate an expansion of its existing natural gas transmission system in Pennsylvania, Virginia, Maryland, North Carolina, and South Carolina. Transco's project purpose is to provide an incremental 1.7 million dekatherms per day (MMDth/d) of year-round firm transportation capacity from the Marcellus Shale production area in northern PA to Transco's existing market areas, extending to the Station 85 Pooling Point in Choctaw County, Alabama. The EIS will not determine whether the need for the Project exists, as this will be determined by the Commission later; however the purpose of NEPA is informed decision making, using relevant information and public engagement in the process, which could be compromised by deferring this analysis.

The Atlantic Sunrise project, in the alignment of Transco's preferred alternative, includes the construction and operation of 197.7 miles of pipeline to provide ability to transport 1.7 MMDth/d natural gas. Atlantic Sunrise is proposed to be collocated for 54.6 miles (28 percent) with or adjacent to existing pipelines and/or electric transmission utility rights-of-way. The

majority of the line is new 30 inch and 42 inch natural gas pipeline. Atlantic Sunrise also proposes the construction and operation of two new compressor stations in Wyoming and Columbia Counties, PA, and modification to three existing compressor stations in Columbia and Lycoming Counties, PA and Howard County, MD. Minor modifications at existing aboveground facilities at various locations in Pennsylvania, North Carolina, South Carolina, and Virginia to allow for bi-directional flow and the installation of supplemental odorization, odor detection, and/or odor masking/deodorization equipment are also proposed.

The DEIS presented alternatives beyond the applicant's preferred alternative, including the no-action alternative, two system alternatives, three major route alternatives, other minor route modifications and variations, and aboveground facility site alternatives. FERC has recommended that several minor modifications be incorporated beyond those that were incorporated by Transco. Beyond these minor modifications, all other system and major route alternatives were dismissed. Only the applicant's preferred alternative was carried forward for detailed analysis in the DEIS. It is not clear if there are additional route modifications that could be made to the applicant's alternative which may reduce adverse environmental impacts.

The alternatives analysis presented in the DEIS seems to include reasonable alternatives which were not carried forward for detailed consideration. Based on the information provided in the study, EPA recommends two system alternatives be retained for further detailed study, including the Transco system alternative, which is collocated for 91% of its route, and the expanded PennEast alternative, which would expand the 111 mile PennEast pipeline by 80 miles and eliminate the need for the Atlantic Sunrise pipeline. EPA recommends FERC fully consider these two alternatives and include the analysis in the EIS. These two alternatives appear to have the potential to meet the project purpose and need while minimizing adverse environmental impacts. Without additional analysis of alternatives, it is not clear that the preferred alternative is the only one to meet the stated purpose and need.

EPA is concerned by the statement in the EIS that project need will not be vetted in the EIS, but outside of the NEPA process by FERC. The purpose and need is the basis for the alternatives analysis and is the foundation for the analysis under NEPA. Assessing the need and a full suite of alternatives is a critical component of the NEPA process, and a component in which the public has shown great interest as well as concern. We recommend FERC provide transparency in the decision-making process and include as much of this information within the NEPA document for full disclosure to the public and afford the public the opportunity to provide comment.

EPA is concerned about the amount of detailed information that has yet to be filed and is not evaluated in the DEIS. This includes surveys for land, rare species, historic resources, water supplies, air modeling, mitigation measures to manage and dispose of contaminated groundwater, proposed mitigation measures for source water protection areas, geotechnical feasibility studies for HDD crossing locations and mitigation measures to minimize drilling risks, and a detailed aquatic resource compensatory mitigation plan. This information is relevant and critical to evaluation of potential impacts. EPA is concerned that a fully informed decision may not be made without this information. EPA is interested in discussing with FERC when and how this information will be assessed and disclosed to the public.

EPA is concerned about direct, secondary and cumulative impacts to aquatic resources, groundwater, and water quality. Aquatic resources have the potential to be impacted by many activities, including waterbody crossings, clearing, blasting, and water withdraws for hydrostatic testing. Some of the resources within the project are high quality and sensitive resources, including Exceptional Value (EV) and trout streams. The full assessment of these simultaneously occurring impacts to resources needs to be conducted. With the potential for complex impacts to occur, such as changes in recharge patterns and flow status, additional avoidance and minimization measures may be necessary to protect the aquatic ecosystem. Additional comments on aquatic resources can be found within the enclosures to this document.

The EIS reports that a total of 50.4 acres of wetlands would be either crossed by the Project, affected by temporary extra workspaces, or located within the construction right-of-way. The Project would involve 331 waterbody crossings. EPA believes additional information on aquatic resources should be included in the EIS, including impact breakdowns and compensatory mitigation concepts, which are provided in the Corps' PN, detailed stream and wetland assessment data on the quality or functions of the systems, and detailed, or at a minimum conceptual, compensatory mitigation plans. Additionally, as part of the Section 404, CWA permit process, a detailed compensatory mitigation needs to be prepared and submitted. Without more detailed information it is uncertain if the proposed mitigation will compensate for the functions lost.

Large impacts to terrestrial resources, including forest and forest interior dwelling species (FIDS) habitat, are also of concern to EPA. Construction of the Project would disturb about 3,905.8 acres of land, including pipeline facilities, aboveground facilities, pipe yards, contractor yards, and staging areas, temporary and permanent construction access roads, and right of way. Permanent operations would require about 1,208.3 acres of the 3,905.8 acres of construction lands. The Project would cross 45 interior forests along CPL North and South and would affect 270.4 acres of interior forest habitat during construction. About 118.9 acres of the affected interior forest would be permanently eliminated due to Transco's maintenance of the right-of-way during operation of the pipeline facilities. Using the distance of 30 feet from the edges of newly created edge habitat into interior forest, the DEIS estimates that 1,993.8 acres of interior forest would be indirectly impacted. This may be an underestimation of indirect interior forest impacts, as the use of only a 30 foot buffer is not supported or documented in the EIS. Mitigation should address the loss of mature forest and FIDS, which may take decades to replace.

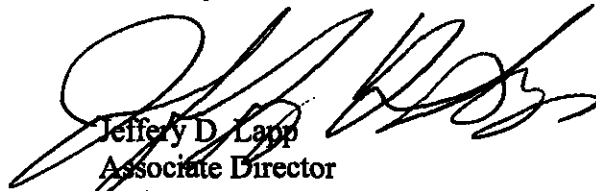
EPA acknowledges that the DEIS cumulative impact analysis included natural gas infrastructure, including gathering lines, FERC-jurisdictional natural gas transmission projects, and natural gas wells. Consideration of natural gas production, transmission and use could be expanded in the analysis to provide a more comprehensive understanding of impacts. It is recommended that FERC actively seek to unravel and describe the highly complicated, inter-related network of pipelines. This is important for public understanding and also a step toward identifying cumulative impacts from combinations of past, present and reasonably foreseeable infrastructure and non-infrastructure activities. Please consider our detailed comments regarding cumulative impacts presented in enclosure to this document.

EPA is concerned that the selection of the current preferred alternative may result in significant adverse environmental impacts. EPA recommends that available systems alternatives be retained for detailed study. EPA also recommends that the information not currently included in the DEIS be disseminated and appropriately evaluated with the resource agencies and public stakeholder participation prior to the issuance of any certificates by FERC. EPA is interested in discussing with FERC the most appropriate way for system alternatives and other information to be considered and included for public information and agency consideration, which may possibly be accomplished through the use of a revised DEIS.

Based on our review of the DEIS and the amount of detailed information which has not been included or completed, EPA has rated the environmental impacts associated with all of the action alternative corridors as Environmental Concerns ("EC") and the adequacy of the impact statement as "2" (Insufficient Information). This rating is due to the direct, indirect and cumulative impacts of the proposed corridors on terrestrial resources, including interior forests, aquatic resources, rare, threatened and endangered species. EPA recommends additional alternatives be explored to help further reduce impacts to resources resulting from the proposed action. Details on the basis for this rating are contained in the remainder of this letter. A description of our rating system can be found at: www.epa.gov/compliance/nepa/comments/ratings.html.

Please consider the issues, questions and comments included in this letter and enclosure. We recognize the complexity of the analysis needed and difficulty in balancing impacts to natural resources, farmland and communities for any build alternative. We would appreciate the opportunity to discuss the comments provided here, at your convenience. Thank you for allowing EPA with the opportunity to review and comment on the Atlantic Sunrise DEIS. If you have questions regarding these comments, the contact for this project is Ms. Alaina McCurdy; she can be reached at (215) 814-2741 or mccurdy.alaina@epa.gov.

Sincerely,



Jeffery D. Lapp
Associate Director
Office of Environmental Programs

Enclosure (1) Narrative Technical Comments
(2) Detailed Technical Comments

Enclosure 1 – Narrative Technical Comments
Atlantic Sunrise DEIS

Enclosure 1 includes Narrative Technical Comments on the following topics:

- 1) Purpose and Need
 - 2) Alternatives
 - 3) Geology
 - 4) Streams and Wetlands
 - 5) Vegetation
 - 6) Rare, Threatened and Endangered Species
 - 7) Land Use, Recreation and Public Lands
 - 8) Conservation and Visual
 - 9) Cumulative Impacts
 - 10) Climate Change
-

Detailed Technical comments on these and other topics are provided in Enclosure 2.

1) Purpose and Need

EPA is concerned that the need is not part of the calculus in combination with the stated purpose to provide transport ability of 1.7 MMDth/d natural gas. The purpose alone may narrow and limit the range of available alternatives to need a prescribed need. As stated in the above letter, establishing a project need is critical to help determine alternatives that should be studied and the degree to which the proposed action or other alternatives may meet the stated purpose and need. Specific dekatherm capacities are provided, although it is unclear how these units were determined or generated. In the absence of this type of supporting documentation (markets, etc), it is unclear if the stated purpose and need is too narrow thereby limiting the available range of alternatives. We suggest that a broader purpose and need statement be developed which would allow for a broader range of alternatives to be considered in the EIS. For example alternatives which include a lesser diameter pipe, or a different capacity level could meet needs.

The EIS notes that there are precedent agreements for 1.7 MMDth/d of capacity, which are able to be terminated under certain conditions are not met, including regulatory approvals. Additional information on these agreements should be provided, and clarification provided to identify if these agreements are duplicative of other agreements entered into by the applicant for other pipeline projects in this region. Table 1.1 provides the shippers and contract quantities. Information on the receipt points and gas receivers has not been provided, which is essential to understanding the purpose and need of the proposed project.

2) Alternatives

EPA is concerned that there may be alternatives to the applicant's preferred alternative that may meet the project objectives which were not considered in detail in the DEIS. Some alternatives which at the screening level would have similar impact may need to be considered further for detailed study. A higher level of study would allow for complex resources and

project impacts to be fully evaluated and considered. The alternatives analysis should describe alternatives that were dismissed from further study as well as the rationale for their dismissal. Alternative locations for project beginning and end points should also be evaluated.

We believe FERC should consider in greater detail available system alternatives, including PennEast and the Transco system alternative. Based on the limited information provided, it appears that the system alternative has potential to meet the stated purpose and need/objectives of the applicant's preferred alternative and could be a reasonable alternative which should be considered in the DEIS. We encourage FERC to consider this system alternative in greater detail alongside of the proposed project in the EIS. Upon detailed evaluation it is possible that there are environmental advantages or that there are less damaging practicable alternatives to the applicant's preferred alternative.

The Transco system alternative included several of the same components as the applicant's proposal (the Unity and Chapman loops, portions of CPL North, compression at CS 517 and 520, and pipe replacement) as well as additional compression and 10 pipeline loops. The Transco system Alternative would be co-located for about 91% of its length. The total amount of compression estimated for this system alternative would be 183,000hp, which is approximately a 25% increase above the compression for the preferred alternative. It is concluded that the Transco system alternative has environmental disadvantages that outweigh the environmental advantages and is not considered to be preferable to the proposed project. It may be beneficial to note that these estimates have not included efforts to avoid and minimize adverse impacts, as was done for the preferred alternative, which could identify additional potential to reduce adverse impacts of the system alternative. Table 3.2.3-1 shows that the Transco system alternative has greater mileage and construction ROW than the preferred alternative; a more detailed analysis could reveal that the collocated project minimizes impacts. It appears that the system alternative has potential to meet the stated purpose and need/objectives of the applicant's preferred alternative. We encourage FERC to consider this system alternative in greater detail alongside of the proposed project in the EIS. Upon detailed evaluation it is possible that there are environmental advantages or that there are less damaging practicable alternatives. EPA is uncomfortable dismissing this alternative without additional information.

An expanded PennEast Project was briefly discussed in Section 3.2.2. The expanded PennEast Project would require 80 additional miles of pipeline to the currently proposed PennEast Project, which is 111 miles and would also connect to the Transco Pipeline. As the Atlantic Sunrise pipeline is 198 miles long, if the expanded PennEast project moved forward and Atlantic Sunrise did not, it appears that PennEast would result in approximately the same mileage as Atlantic Sunrise. It is not clear why this alternative has been dismissed as it appears to have the potential to eliminate the construction and operation of 110+ miles. Considering an expanded PennEast route may have the potential to meet the project purpose and need as well as potentially reduce adverse impacts. EPA recommends FERC consider this system alternative in further detail.

We recommend that an alternatives analysis for above-ground facilities, including all compressor stations, be conducted and included in the EIS to potentially minimize impacts to forest and FIDS habitat, aquatic resources, RTE species and air quality. Alternate locations for

compressor stations beyond those included in the proposed action should be considered and included in the EIS. Rationales for why alternative sites were dismissed from further consideration should also be included. Additional detail on the siting criteria used should also be provided. Further comments on alternatives, including system alternatives, major route alternatives and aboveground facility alternatives can be found in Enclosure 2.

3) Geology

Challenging geologic conditions are likely to be encountered during project construction. Steep slopes (15% or greater) or side slopes cross or comprise about 58.1 miles of the proposed route. The EIS notes that there is significant karst topography along portions of Atlantic Sunrise, with approximately 28 miles of CPL South crossing karst topography and one HDD location proposed in karst areas. Sinkholes, subsidence and caves are also noted as common. Rock removal is anticipated as 138 miles (about 70%) of PA pipeline facilities will encounter shallow bedrock. Of these, about 120 miles potentially could require blasting and could require blasting in 55 streams. Twenty-two mine pool drainages were identified close proximity to the workspace; twelve of these are within the workspace.

Blasting, in combination with steep slopes, karst topography, Abandoned Mine Land (AML) and mine pools, has the potential to result in adverse impacts that were not considered or fully evaluated in the EIS. We recommend that the EIS describe the nature, extent, frequency of potential blasting impacts water wells, springs, wetlands, nearby aboveground facilities, and adjacent pipelines and utility lines. It is unclear if there are resources of special concern that may be impacted by blasting, as it does not appear that detailed analysis was conducted. Changes to geology resulting from blasting may directly and indirectly affect wildlife and local residents, which should also be considered within the scope of the EIS. The potential effects of these geologic hazards, including AML related subsidence, landslides and flash flooding, on pipeline construction and operation should also be evaluated. We recommend that impacts, especially in high risk areas, be evaluated specific to this project. Further avoidance and minimization of impacts to effected lands might be appropriate; contingencies should be made clear in the NEPA analysis. Further comments on geology can be found in Enclosure 2.

4) Streams and Wetlands

Avoidance and minimization of adverse impacts to wetlands and streams have been detailed in the Section 404 public notice (PN). The DEIS did not include the same level of detail as the PN, therefore the DEIS should clearly describe the avoidance and minimization efforts are being incorporated into the project design and construction. For analysis in the EIS avoidance and minimization measures not only apply to direct impacts, such as the discharge of fill material or crossings, but also indirect impacts (e.g. potential increased downstream sedimentation), as well as by the proposed water withdrawal. Water withdrawal can affect recreational and biological uses, stream flow, and result in impacts to stream and wetland habitat. EPA recommends that FERC conduct further detailed analysis of specific streams and wetlands of concern or high sensitivity and work with the resource agencies to determine if additional avoidance and minimization efforts may be necessary to reduce impacts to these important resources.

Page 4-101 states that a detailed site-specific blasting plan will be prepared for each location requiring blasting in or near a stream. We suggest that these plans be approved by both FERC and the USACE, and if appropriate, other regulatory agencies, in advance of blasting. Site specific plans should identify special resource considerations during blasting to determine if a pre-blasting, and post blasting monitoring plan is appropriate, including the need for secondary impacts including effects to stream base flow. A map with the waterbody locations that may require blasting, including karst topography, wetlands and water withdrawal locations should be included.

At this time the entire proposed project corridor has not been surveyed. Remote sensing of wetlands was used for areas that were not surveyed in the field. It is stated that about 29% of the surface waters were identified via remote sensing. Please clarify how much of the proposed project was field surveyed. EPA recommends that these surveys be completed and verified prior to the issuance of a CWA Section 404 permit or the FERC certificate. The applicant should use an appropriate functional assessment to evaluate the impacts, both temporary and secondary, to the aquatic ecosystem. Using an appropriate assessment will ensure that functions and values are accounted for in the impact assessment and that the proposed compensation plan is adequate to offset the loss, including temporary loss, of aquatic resource functions. Without completed surveys and a functional assessment of the aquatic resources, it is unclear if sufficient wetland and stream information has been collected to support informed decision-making.

Transco is proposing off-site permittee-responsible compensatory mitigation for palustrine forested wetlands disturbed by construction and operation of the Project. The DEIS indicates an impact ratio of 2:1 is proposed for palustrine forested conversions and exceptional value palustrine forested wetlands would be mitigated at a ratio of 2.5:1. Additional conceptual mitigation information was provided in the PN which was not incorporated into the EIS. A detailed compensatory mitigation plan (CMP) has not been included as part of the EIS or the PN. EPA requests an opportunity to review and comment on the CMP. We suggest that additional detailed information included in the PN be incorporated in the EIS. It is unknown if the proposed mitigation to address the conversion and temporal loss of wetlands and aquatic resources will be adequate. Information is not provided on how the success of these proposed mitigation sites will be determined. The CMP should include appropriate success criteria as well as a monitoring plan of the converted wetlands to assure that they remain waters. FERC may wish to consider whether additional mitigation to address impacts to aquatic resources beyond the CWA Section 404 context may be appropriate.

5) Vegetation

Transco determined it would cross 45 interior forests along CPL North and South and Chapman Loop would affect 270.4 acres of interior forest habitat during construction. About 118.9 acres of the affected interior forest would be permanently eliminated and converted to forest edge habitat due to Transco's maintenance of the right-of-way during operation of the pipeline facilities. Approximately 28% of the forests impacted during construction are interior forests. Newly created edge habitats would be established by maintenance of the permanent right-of-way, and the indirect impacts could extend for 300 feet on each side (600 feet total) of

the new corridor into the remaining interior forest blocks. Transco calculated indirect impacts as a measurement of the acreage 30 feet laterally from the edges of the construction workspaces into interior forests. The Project would indirectly affect 1,993.8 acres of interior forest in this manner. It is unclear how this method of calculating indirect impacts to interior forest was determined. Although the EIS states that indirect impacts could extend 300 feet, a distance of only 30 feet was selected. EPA is concerned that the indirect impacts to interior forests may have been underestimated.

The EIS should consider any state specific vegetation/tree laws and requirements as well as any state specific definitions of interior forest. For example, interior forests that are habitat for forest interior dwelling species are protected under the Maryland Critical Area law, which defines forest tracts which are greater than 50 acres in size. Maryland defines interior forest habitat as forest greater than 300 feet from the nearest forest edge. How would using this definition compare with the method used in the EIS?

6) Rare, Threatened and Endangered Species

Several surveys were incomplete and survey reports for RTE species were not available for the DEIS, including Indiana bat and the Alleghany wood rat. However, in some cases, FERC has recommended that this information be filed prior to the end of the DEIS comment period. We further recommend that this report and all associated data be reviewed and incorporated as appropriate into the Final EIS. It is not clear what specific avoidance and minimization efforts or route and construction changes have been incorporated with regard to RTE species, including the Indiana bat and northern long-eared bat. Please update the status of consultation with US FWS, and include all correspondence relating to ESA requirements in the EIS. If any avoidance and minimization measures are committed to, please be sure to capture those in the Record of Decision. The EIS doesn't not conclude whether impacts to RTE species will be significant.

Bog turtles are present, however not all areas have been surveyed, partially due to access restrictions. It appears that some surveys would be completed in 2016. The phase 2/3 report has not been submitted for FWS/FERC review. The DEIS states that Bog turtles are not using the portion of the wetland that will be impacted by the project. What avoidance and minimization measures were taken in order to reduce the potential impact to wetland habitat being used by the bog turtle? Are any ATWS or ROW width being requested for this particular wetland? It is not clear how the conclusion that the project may affect, but not likely to adversely affect the bog turtle was reached.

EPA is concerned that as a result of the many incomplete surveys, there may not be sufficient information for FERC to make a fully informed decision as to the projects effect on RTE species. It is unclear if this information will be available prior to FERCs decision and how survey information once available will be reviewed and incorporated into the decision-making process. Information on the potential impact to RTE species, including the Indiana bat, northern long-eared bat, bog turtle and Alleghany wood rat, should be available to the public, other stakeholders and regulatory agencies for consideration and comment during the NEPA process. This information should be considered, in consultation with FWS and other agencies, and factored into any decisions made by FERC on this project.

7) Land use, Recreation and Public lands

The Project would cross a total of 4.0 miles of state game land (SGL) and forest, and would temporarily affect 80.9 acres of SGL and forestland. In four of the five areas, the pipeline route would follow three existing pipelines and one existing electric transmission line rights-of-way; the new permanent right-of-way would abut the existing rights-of-way in these areas. The project would also cross the Appalachian Trail within SGL 211. Ricketts Glen State Park would be crossed in two locations by the proposed project; this entire length will be collocated with Transco's existing Leidy Line system, resulting in an additional 1.7 acres to be maintained as permanent ROW adjacent to the existing ROW. The Glens Natural Area, a National Natural Landmark, is located 0.4 miles from the proposed route.

Limited discussion of impacts and concerns from PGC and DCNR have been included, although it appears that concern has been voiced regarding the affected state game lands (SGL) and Sproul State Forest. It does not appear that any avoidance and minimization has been considered. Clarify if any of the potential blasting areas are within this pipeline segment. EPA is concerned that pipeline construction may alter ground or surface water flow conditions, which may impact the park resources. It is unclear that appropriate compensatory mitigation has been developed for impacts occurring on these lands. Site specific crossing plans are not available for Ricketts Glen, SGL 206, and others. Please update this information and consider the potential impacts from crossings in the EIS.

8) Conservation and Visual

The proposed action would cross several lands that are part of conservation programs. An unknown amount of lands are enrolled in the CRP and CREP programs which are in the process of being identified. Page 4-153 makes the conclusion that construction across herbaceous CRP and CREP lands will not negatively affect enrollment and that forested lands on the permanent ROW would be permanently effected. Unknown restoration measures would be implemented to ensure that properties remain eligible. It is unclear how many lands enrolled in these programs will be affected, if herbaceous lands within the permanent ROW will remain eligible, and what restoration measures are being proposed. We recommend considering all of this information prior to making the determination that impacts on these conserved lands will not be significantly impacted.

9) Cumulative Impacts

EPA is concerned that the temporal and geographic scope of the study is narrow, which has led to a limited analysis of cumulative impacts. Defining the geographic and temporal framework is the starting point of a cumulative impacts analysis. Establishing appropriate spatial and temporal boundaries is at the very core of the study, the selection of inappropriate boundaries leads to subsequent fundamentally flawed analysis and documentation. It is critical to assess past and future impacts. We suggest defining the geographic and temporal scope (or the region of influence) of the analysis early in cumulative impact section, which can vary depending on the resource being evaluated. For example it appears that 0.5 miles for minor

actions, 10 miles for major actions (including gas wells), within watersheds for major actions that would be crossed by the Project, and within the AQCR crossed by the project for actions with potential to result in longer-term impacts on air quality (for example, natural gas pipeline compressor stations).

Some of the resources included in the cumulative impact analysis appears to only consider impacts that occur during construction of Atlantic Sunrise as the temporal boundary and within the project footprint as the geographic boundary. However, cumulative impacts can occur to resources even if impacts do not occur concurrently. Though construction impacts can be short-termed, there are likely prolonged impacts for instance associated with forest fragmentation, invasive species, etc. Even projects that do not overlap geographically can contribute to cumulative impacts to streams, wetlands, forests, habitat, and other resources. We recommend FERC consider expanding the cumulative impact study beyond what is currently considered in the DEIS. Cumulative impacts temporal boundaries are often set a few decades into past and future to include appropriate trend and facility life expectancy. It is typical to use a baseline time frame of 30 to 50 years past, prior to sprawl and extensive highway networks. It is important to analyze the trends in resources, to identify if there have been repeated impacts or degradation of the resources. A thorough analysis of impacts could help guide the selection or placement of appropriate mitigation for Atlantic Sunrise impacts or highlight areas where additional avoidance and minimization may be warranted. EPA would be interested in discussing the selection of a more appropriate and inclusive boundary with FERC.

EPA is concerned about cumulative impacts to aquatic resources, groundwater, and water quality. We recommend that the cumulative impact analysis of surface and groundwater be expanded, including cumulative impacts to water quality, headwater streams, high quality and/or sensitive aquatic resources. Aquatic resources have the potential to be cumulatively impacted by many factors, including waterbody crossings, change in recharge patterns, clearing, blasting, and water withdraws for hydrostatic testing. It may be prudent to consider these impacts in combination with other past, present and reasonably foreseeable actions at the watershed scale.

The cumulative impact analysis of the DEIS considered natural gas wells, gathering lines, and other FERC jurisdictional and non-jurisdiction projects. It was estimated that 1,135 gas wells were permitted in Pennsylvania counties within 10 miles of the project between 2011 and 2015. The DEIS assumes the same rate of permit issuance, which is approximately 260 per year, and projects that between 700 and 800 new wells could be drilled by the time the Atlantic Sunrise Project is scheduled to be completed. Please include the rationale for selecting this timeframe and distance. EPA appreciates that efforts were made to include a more comprehensive cumulative effects analysis of past, present and reasonably foreseeable natural gas related actions.

EPA is concerned by the potential cumulative impact which could result from the preferred alternative, Marcellus Shale development, and other FERC-regulated and non-jurisdictional actions. The DEIS estimated about 340 gas wells will be needed to supply the Atlantic Sunrise Project, using median production rates for wells. It also noted that production over time goes down, so more wells would likely be necessary to maintain supply. Most wells are located in Susquehanna and Wyoming Counties. There are many of the other natural gas transmission

projects which cross or are nearby to the proposed action. The DEIS concludes that in areas of rapid development like Susquehanna County moderate cumulative impacts on vegetation and wildlife would occur. In areas like Susquehanna County which have the potential for cumulative impacts occur, EPA recommends that a more detailed cumulative impact analysis in this area be conducted. A more detailed consideration of cumulative impacts may include a more detailed breakdown of past, present, and reasonably foreseeable actions, consideration of additional avoidance and minimization efforts, as well as looking for additional opportunities to collocate. Presenting the collocation rate by county or watershed may be a useful way to begin considering avoidance and minimization efforts in areas with cumulative impact potential.

The cumulative impact analysis relies on possible state and federal measures, restrictions and requirements for other past, present and reasonably foreseeable actions to minimize the potential for long-term resource losses, such as for fisheries, aquatic resources, RTE, and land use. The EIS also relies on the Atlantic Sunrise ECP and Plans and Procedures to minimize and mitigate for resource-specific cumulative impacts. We recommend that the cumulative impact analysis consider potential cumulative impacts regardless of the various prepared or required plans to be implemented by the project or other actions, or permits or regulatory thresholds. While it may be appropriate to recognize or consider the relation to these, please keep in mind that this is not sufficient to determine potential effects of past, current and reasonably foreseeable future activities to resources or if/ how project impacts can be mitigated.

10) Climate Change

The climate change section is within the cumulative impact portion of the EIS, which concludes that the project would not significantly contribute to GHG cumulative effects or climate change. EPA is concerned that this conclusion is not well supported and that the discussion presented could be improved by considering in further detail the potential impacts of the project contributing to climate change as well as the potential impact of climate change on the proposed action.

The EIS describes and compares the magnitude of Pennsylvania statewide GHG emissions, concluding that the project would have minor emissions when compared to the PA GHG emission inventory (less than 0.1 percent of the 2005 PA total). We do not recommend comparing project level GHG emissions to total state or U.S. emissions because these comparisons obscure rather than explain how to consider GHG emissions under NEPA and do not provide meaningful information for a project level analysis. We recommend using estimated direct and indirect GHG emissions levels as a general proxy to compare emissions levels from the proposal, alternatives, and potential mitigation.

The DEIS does not contain estimates of methane leakage during operation of the proposal. We recommend that FERC estimate expected GHG emissions from leakage and consider potential BMPs to reduce leakage of methane associated with operation of the expansion facilities. EPA has compiled useful information on technologies and practices that can help reduce methane emissions from natural gas systems, including specific information regarding emission reduction options for natural gas transmission operations. This information may be found at <http://www3.epa.gov/gasstar/mehtaneemissions/index.html>.

The discussion on climate change in the DEIS generally states what constitutes climate change, summarizes the IPCC and USGCRP and some of their associated findings and reports. Some general observations of environmental impacts to the northeast region were described. The EIS should describe potential changes to the affected environment that may result from climate change. Including future climate scenarios in the EIS would help decision makers and the public consider whether the environmental impacts of the alternatives would be exacerbated by climate change. If impacts may be exacerbated by climate change, additional mitigation measures may be warranted.

The EIS further states that other major projects considered in the cumulative impact analysis would have air permits and that these permits would minimize GHG emissions in accordance with air permitting requirements. Although not specifically mentioned in Section 4.13.8.10 Climate Change, other activities such as development and production of natural gas were included in the cumulative impact analysis and could be better represented in the discussion of climate change. We recommend the EIS also estimate GHG emissions from the development and production of natural gas being transported through the proposed pipeline, as well as estimate the GHG emissions associated with the end use of the gas due to the reasonably close causal relationship of this activity to the project. In Section 4.13.8.10, FERC states that "Natural gas is a lower CO₂ emitting fuel when compared to other fuel sources." While combustion of natural gas results in lower amounts of GHG emissions than combustion of coal or fuel oil, lower relative levels of impacts do not exempt consideration of the indirect impacts of the proposal and measures to avoid, reduce, or compensate for those effects. Section 4.13.3.1 Wells estimates the number of wells permitted within 10 miles of the project, the rate that new wells could be added, and the number of wells required to provide quantities of gas to supply the project. We recommend that the GHG emissions be estimated the wells, gathering systems, and other natural gas pipeline projects that are included in the cumulative impact analysis.

EPA has recommended that FERC consider additional alternatives beyond the applicant's preferred alternative. Should additional alternatives be retained for detailed study, we recommend that the EIS estimate the GHG emissions potentially caused by these alternatives. These emissions levels can serve as a basis for comparison of the alternatives with respect to GHG impacts. There are a considerable resources, tools and methodologies to estimate project contribution to climate change. We strongly recommend that these be utilized in the EIS. Example tools for estimating and quantifying GHG emissions can be found on CEQ's NEPA.gov website.[1]

Climate adaptation measures based on how future climate scenarios may impact the project in the EIS should be considered. The National Climate Assessment (NCA), released by the U.S. Global Change Resource Program, contains scenarios for regions and sectors, including energy and transportation. Use of NCA or other peer reviewed climate scenarios can inform alternatives analysis and possible changes to the proposal which may improve resilience and preparedness for climate change.

Enclosure 2- Detailed Technical Comments
Atlantic Sunrise DEIS

EPA would like to provide the detailed technical comments on the following topics:

- 1) Alternatives – General
 - 2) System and Major Route Alternatives
 - 3) Aboveground Facility Alternatives
 - 4) Construction, Testing and Restoration
 - 5) Hazardous Geology and Soils
 - 6) Groundwater, Wellhead Protection Areas, and Surface Waters
 - 7) Streams and Wetlands
 - 8) Vegetation
 - 9) Wildlife and Aquatic Resources
 - 10) Rare, Threatened, and Endangered Species
 - 11) Land Use, Recreation and Public Lands
 - 12) Conservation, Historic and Visual
 - 13) Socioeconomics
 - 14) Air
 - 15) Noise
 - 16) Reliability and Safety
 - 17) Cumulative Impacts
-

1) Alternatives – General

- Some of the criteria used to compare alternatives appears to be limiting the range of reasonable alternatives. The third listed criterion is “Does the alternative offer a significant advantage over the Project?” It is unclear what is meant by significant advantage, or how much information is used to make this determination. EPA believes the EIS should carry reasonable alternatives forward for detailed study and that reasonable alternatives should not be dismissed prior to detailed analysis. The use of this criterion seems to imply that alternatives deemed to be of similar or equivalent adverse impact would be discarded. Even if it can be determined at a screening level that alternatives would have similar impacts, it would be unlikely that this low level of detail would consider the function, value, or quality of a resource. EPA reminds FERC and the applicant that resources have varying degrees of function, value or quality, which should also be taken into consideration in addition to estimated impact totals (acreage, miles, etc).
- Page 3-1 notes that not all conceivable alternatives are technically feasible or practical, giving limitations as to why alternatives may be incapable or impractical. While this may be correct, it is still necessary for the alternatives analysis to present the alternatives

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considered as well as the rationale for dismissal from further consideration. Please include the various alternatives to the proposed action that may have been considered but were dismissed from further consideration. The potential to provide a significant environmental advantage over the project is also mentioned on pg 3-1. Please clarify how this potential is determined and if this determination is made within the context of the NEPA document. State why it is assumed that significant environmental advantages over the proposed action do not occur. The differences in impacts between alternatives, particularly for alternatives that may have similar impacts, would best be evaluated in NEPA alongside of the applicant's preferred alternative. EPA suggests that the alternatives analysis be expanded to include additional alternatives that may have been dismissed from consideration.

- Please clarify how the start and end point locations for the proposed project were determined. Consider if system alternatives that utilize different start or end points may meet the project purpose and need. Receipt and delivery points were briefly mentioned over page 3-7 to 3-8, as well as determinations on the optimum location to aggregate the 1.7 MMDth/d and optimum point to tie CPL South into Transco's Mainline system. This discussion should be expanded upon as it provides insight into the rationale for the selected locations of the proposed action.

2) System and Major Route Alternatives

- System alternatives would need to provide additional 1.7 MMDth/d of natural gas to the delivery points required by the precedent agreements and provide services within a similar timeframe in order to be considered viable. Please clarify why these things are needed in order to be a viable system alternative.
- Although Table 3.2.3-1 presents impact amount which in some cases are greater than the proposed alternative, FERC should also consider that the impacts to these resources are not the same. For example, a greenfield alternative which impacts forests has a different impact on forest/habitat fragmentation than collocating a pipeline which would likely effect forest edge habitat as opposed to uninterrupted interior forest habitat. Please consider these types of differences as it may be preferable in some instances to have a greater edge effect than a lesser interior forest effect. Without considering the resource in greater detail it should not be assumed it is always preferable to impact fewer resources. Quality of resources should also be considered.
- It is not clear that the presented system alternative considered upgrading/expanding components of the existing pipeline diameter. This may have the potential to reduce ROW widths and impact amounts presented in Table 3.2.3-1.
- Many of the above comments and systems alternatives comments provided in Enclosure 1 also applies to the evaluation of major route alternatives.

3) Aboveground Facility Alternatives

- Please provide the siting criteria used for aboveground facilities, including compressor stations. Please provide a map of the alternate aboveground facility locations that were considered. It is stated in section 3.4 that FERC evaluated locations for proposed aboveground facilities, which involved desktop review and site visits, however it is not

clear how this evaluation informed the above-ground facility alternatives analysis. Please provide additional information on the evaluation process, as this appears to conflict with the statement in paragraph two of this section that “we did not identify or evaluate alternative locations for the new compressor station facilities.”

- Please describe how the amount of horsepower needed at each compressor station was determined, as well as how the spacing and distribution of stations along the proposed route was determined.
- It is stated on page 3-51 that the locations of the 605 and 610 CSs were being carried forward due to the lack of comments requesting for the stations to be relocated. The lack of comments or concerns about station locations during pre-filing does not eliminate the separate need for a fair alternatives analysis for above-ground facilities to take place. We recommend that an alternatives analysis for above-ground facilities, including compressor stations 605 and 610, be conducted and included in the EIS.

4) Construction, Testing and Restoration

- It is stated that 2,697.5 acres of land disturbed during construction would be restored and allowed to revert to its former use. Please clarify if there will be active work and replanting in these temporary workspaces. What does ‘allowed to revert’ mean? It seems to imply that it will be abandoned in place.
- Construction Right of Way (ROW) widths are given in section 2.2.2. Please clarify if the proposed construction ROW widths are equal to or greater than the standard FERC allowed width. Appendix C lists the locations where additional construction ROW has been requested. It appears that for large portions of the construction ROW additional/extra workspace is requested. For what portion of the ROW is Transco requesting additional workspace? As it seems that additional workspace has been requested for much of the ROW, please clarify how this does not represent the typical construction condition. It seems disingenuous to provide construction ROW widths in Section 2.2.2 although these widths do not appear to be applicable to the majority of the ROW.
- Evaluate impacts related to modifications to existing roads including tree, brush, or structure removal; widening; grading; installation or replacement of culverts; and addition of gravel.
- Table 2.3-1 – for the request modification to procedure:
 - V.B.3.c- clarify if the request is to decrease the 15 foot buffer to waterbodies or eliminate the buffer entirely. In these locations, were modifications to the pipeline considered as opposed to modifying this procedure? Please specify how Transco would ensure each waterbody is adequately protected.
 - VI.A.3 – it is unclear why soil storage must occur in wetlands. Clarify if upland locations were considered, and if why those locations were not utilized.
- We recommend minimizing the use of heavy equipment in environmentally sensitive areas, including wetlands. Hand clearing of vegetation should be considered as one way to reduce the use of heavy equipment in these areas.
- It is stated that wood chips may be spread across the ROW in a manner that does not inhibit vegetation growth. Please clarify if this is referring to a possible maximum depth of wood chips to be spread.

- Section 2.3.1.4 states that where necessary, the entire width of the ROW and ATWL would be graded. Please include information on how much of the ATWS will be graded.
- Is anything contained in the protective coating that could be considered hazardous?
- During backfilling is it anticipated that all excavated material will be placed back into the trench? If not, please state where this material will be placed. Where will rock and other items deemed not suitable for backfill be placed?
- It is stated that hydrostatic test water withdrawal location and rates would be in accordance with applicable permits. Although the locations, rates, sequence and timing of withdraws and testing may not be finalized, the currently proposed information is relevant to the EIS and should be included in order for potential adverse impacts to be fully analyzed and available to the public.
- Will test water be recycled from one segment to another? It would also be beneficial to add the flow rates of each water body to better understand if hydrostatic testing will impact water flow in streams and creeks. Please specify if test water will enter and exit the pipeline at the same locations or if different locations.
- It is not clear what will happen with the water after the drilling mud is separated. Will water be discharged back into the waterbody? How much water will be recovered or lost?
- It is stated that areas would be revegetated and would be monitored, evaluated and correct areas requiring remediation, however few specific details are provided. EPA suggests that a detailed revegetation plan, which includes monitoring, performance standards, plans, and an adaptive management plan, be prepared and finalized prior to the start of construction.
- What process or criteria was used in order to identify sensitive resources? Was it determined that all aquatic resources were to be considered sensitive?
- Post-construction monitoring is addressed in section 2.5.5. EPA suggests that a specific monitoring plan, which details monitoring frequency, content, methodologies, performance standards and report contents, be prepared and finalized prior to the start of construction.
- Page 2-38 states that if restoration activities are not adequate at the end of the respective timeframes, the post-monitoring program would be extended. In the event that restoration is not adequate, we recommend that additional restoration or compensatory mitigation be required. The temporal loss of resources should also be considered.
- Page 4-67 states that chemical may be added to test waters to eradicate non-native aquatic species. However it is unclear what specifically chemicals may be added to the water and what they are targeting. It is also unclear if these chemicals have the potential to affect native species as well as non-native species. Will biocides be used before water enters the pipeline or as it exits the pipeline and expelled into surface waterways. Biocides would have a great impact on the environment if used especially into surface waters.
- Page 4-67 states that test waters would be discharged into well-vegetated, upland areas or to receiving waters using energy dissipation devices to minimize the potential for stream scour. We encourage energy dissipation devices to be used both for upland and instream discharges. The discharge of water into uplands may create erosional features contributing sediment into nearby waterway, affect habitat, and become a source of erosion in the future if left unrestored. How will this be monitored, identified and restored if found? After water is used for testing, will it be immediately discharged?

Please explain if the testing process will result in higher water temperatures; if so, consider the potential impact of discharging warmer waters into receiving streams.

5) Hazardous Geology and Soils

- Please evaluate the potential impacts of HDD frack out. The last bullet on pg 4-25 seems to describe a construction monitoring and adaptive management plan. These should be developed and finalized in advance of any construction.
- Active mines and AML were identified. We recommend that a table of all the mines, quarries, and wells and their proximity to the project be provided in the EIS, which can be easily found without having to search for another document in FERC's elibrary.
- We also recommend identifying UST that may be within the ROW. Unanticipated UST may be encountered during construction and we recommend that the *Unanticipated Discovery of Contamination Plan* include USTs.
- Could the discharge or drainage of mine pool water be affected by blasting or other construction related operations? Is there potential for unanticipated new or shifting discharge or drainage locations to develop?
- Please clarify the term "susceptibility moderate" and its difference to "moderate" as used in Table 4.1.5-2.
- Please describe the areas along the pipeline route (construction or operation) that will be impacted by flash flooding, include the distance from the mile markers that the flood area is closest, if there incidences of flash flooding in the past, and a figure showing where flooding occurs.
- Please include a figure of areas along the pipeline project with the potential of landslides. Steep slopes are considered to be 30 percent or great, however it is unclear how this was determined.
- Pg 4-44 states that "Dewatering of trenches may result in temporary fluctuations in local groundwater levels. Trench water would be discharged into well-vegetated upland areas to allow infiltration and to minimize effects on the water table." Consider if the fluctuations in GW levels noted may affect any nearby wells, seeps, streams or wetlands. The discharge of water into uplands may create erosional features contributing sediment into nearby waterway, affect habitat, and become a source of erosion in the future if left unrestored. How will this be monitored, identified and restored if found?
- Testing of wells within 150ft is noted and expected to mitigate any damages caused by construction. EPA recommends that well testing and mitigation should be formalized in an appropriate plan and finalized in advance of construction.
- Vibration associated with blasting does not appear to have been considered, although it is stated that blasts would not be expected to adverse effect pipelines greater than 12ft away from the blast site. Vibration should be clearly addressed in the EIS.
- How will geophysical features in high risk areas be identified? A detailed long term monitoring plan is needed (mentioned on page 4-24). We recommend that a monitoring plan be developed and finalized in advance of construction.
- There are several maps and tables within Appendix J for areas of karst and concerns for karst seems to be missing (examples, Table 1-1 and Figure 1-1). These maps and tables are pertinent that they are included with the DEIS as there are a necessary portion of the

evaluation. Additionally, the DEIS should discuss how and when Transco will obtain access to survey the 12.3 miles to complete the MASW survey.

- The DEIS mentions in Table 4.1.2-2 that “*Compressor Station 155 would require limited or no subsurface disturbance and are, therefore, excluded from this table.*” On the other hand in Table 2.2-1 “the Summary of Land Requirements”, mentioned that Compressor Station 155 will affect 17.7 acres during construction. The FEIS should clarify and explain this information.
- General: A map that includes the Prime farmland of the Commonwealth should be included in the DEIS.
- A figure should be included of the areas of the project that have highly erodible soils. The figure should include the range of highly sloped areas within the project construction area to help the reader understand where the most hazardous places would be. With almost half to the project determined to be highly water erodible, the DEIS should discuss the impacts soil erosion should have on the environment from construction and operation such impacts to water quality, pipeline structure, vegetation, and habitat. If this information is in the construction manual, it should be put into the DEIS. The DEIS should pull the examples from the appendixes of the different mitigation measures used to prevent erosion in construction/operation areas of high gradient and/or highly erodible areas. Because of the safety concerns of construction, the DEIS should also list where these BMP’s will be used in conjunction with the high slope and erodible areas. Additionally, the DEIS should discuss what was done to avoid the most highly sloped areas.

6) Groundwater, Wellhead Protection Areas, and Surface Waters

- Preventing negative impacts to aquifers during construction and other pipeline related activities should be among the highest priorities. While the DEIS identifies five principal aquifer systems, as well as minor systems, it does not specify if these aquifers are Underground Sources of Drinking Water (USDW) under the Safe Drinking Water Act. All groundwater with TDS (total dissolved solids) of less than or equal to 10,000 mg/L is presumed to be a USDW.
- We recommend including which aquifers are used for what purposes, and the water quality and yield information available for each aquifer. Describe the recharge and discharge zones for each aquifer and depict on a map, if possible.
- We recommend including water quality data for the groundwater. Summarize the data and provide references for each aquifer (e.g., USGS, State agency reports, or state geological survey reports.)
- There are 90 identified private wells or springs within 150 feet of the proposed route, and in Pennsylvania 8 of the wells are located in areas of known karst. Please provide a map of these private supplies.
- The propose construction will cross 9 Zone II Wellhead Protection Areas (WHPA) in Pennsylvania, with crossing lengths of 0.3 mile to 1.2 mile. As such, the project has the potential to impact private well drinking water supplies. The DEIS states that Transco has committed to testing water supply wells and springs within 150’ of construction, subject to landowner permission. EPA also advises that in-depth hydrogeological impact

studies may be required to assess potential contamination impacts, in addition to the proposed monitoring plan.

- Groundwater in shallow aquifers and karst terrain is also present in areas along the pipeline route, including in the area of 8 known private water supplies. Due to its connection with surface water through sinkholes, caves and swallets, groundwater in karst geologic terrains is especially vulnerable to contamination. EPA recommends that to prevent impacts on public and private water supplies, the pipeline should avoid karst terrain, and consider route alternatives.
- It is noted in the DEIS that “If possible, Transco would locate trench spoil piles on the downhill side of the karst feature to prevent direct runoff into uncovered features.” EPA recommends that spoil piles be located downhill of the karst feature, or removed from the site if that placement is not possible. It is not recommended that spoils be placed uphill of these features.
- EPA anticipates that impacts to wells may occur where Transco has not conducted this pre-monitoring and Transco should be prepared to fairly address these situations should they occur. The EIS should communicate how those impacts may be mitigated.
- It is noted in the DEIS that blasting along the proposed route may potentially impact yields and/or increase turbidity. Groundwater flow impacts should also be considered. EPA recommends that alternatives to blasting be fully explored. We also recommend that blasting within close proximity to bedrock wells and in karst terrain be avoided and/or should not be conducted.
- Preventing negative impacts to surface waters during construction and other pipeline related activities should be among Transco’s highest priorities.
- The pipeline facilities would cross 9 watersheds or drainage basins. These are properly identified by name, HUC-8, drainage area and location. The 8 watersheds crossed in Pennsylvania are identified as discharging into the Chesapeake Bay.
- The DEIS includes information on the CWA section 303(d) listings for Pennsylvania and Virginia. This information does not appear for other impacted areas.
- The DEIS identifies four potable surface water intakes within 3 miles downstream of waterbody crossings impacted by this project. These intakes are identified by facility, waterbody ID, waterbody name, milepost location, distance to intake structure, water intake operator and the primary use of the four surface water intakes.
- EPA recommends that maps of the source water protection zones be included in the EIS.
- EPA does not recommend that projects pass through any identified Source Water Protection Area, and alternative routing should be considered. For crossings in major waterbodies and SWPAs where route alternatives are not possible, sediment modeling can be conducted to indicate the predicted fate and transport of excavated or dredged sediments. The EIS should also include descriptions of site-specific BMPs that will be employed within each SWPA and WHPA to mitigate any construction or stormwater runoff related impacts.

7) Streams and Wetlands

- It is not clear that the determination that the effects on surface water from hydrostatic testing would be minimized and not significant. It does not appear that any minimization efforts or practices have been included to address the withdrawal of large volumes of

water from streams leading to effects of recreational and biological use, especially when diversions constitute a large percentage of the source's total flow or volume. It does not appear that effects to minimize or avoid loss of habitat, change in water temperature and dissolved oxygen levels, and entrainment or impingement of fish or other aquatic organisms have been considered or included. Without further analysis to specific streams of concern, it should not be assumed that impacts have been minimized and are not significant. EPA is particularly concerned about Fishing Creek, which is a high quality water and fishery. Fishing Creek could face complex impacts resulting from a combination of activities, including water withdrawals, blasting, vegetation removal. The combination of impacts from these activities should be considered, especially for sensitive resources like Fishing Creek.

- Table K-3 in appendix K identifies the waterbody/floodplain locations that would be crossed by the proposed pipeline, however it does not appear that the effects of removing floodplain vegetation have been considered. It is not clear if construction or operation of the pipeline in floodplains will result in increased flooding on adjacent properties. EPA recommends this be evaluated prior to construction, especially as the alternatives analysis states that route variations were specifically included due to placement of the pipeline in a floodplain and flooding concerns associated with vegetation removal.
- Would revegetation along waterbodies be limited to shrub/scrub vegetation or would areas that were previously forested be reforested?
- Please clarify if, where, and the amount of water that will be discharged from stormwater, dewatering structures, or hydrostatic testing. What efforts or practices have been incorporated to reduce potential adverse effects to water quality from these discharges?
- The Public Notice briefly states that additional temporary workspace may be needed. Table K-5 in Appendix K lists additional temporary workspace requests within 50ft of a waterbody and provides a justification for this modification. These locations should be identified within the CWA Section 404 application so that the impacts can be accounted for and the locations monitored for successful restoration after the project's completion.
- Transco has made more than 190 requests for additional temporary workspace within 50ft of waterbodies. This constitutes a request for additional temporary workspace for greater than 50 percent of the crossings proposed by Transco. Although Table K-5 includes Transco's justification, in many cases it does not appear that this modification request is fully supported. Many requests state that there would be less impact than transporting material to be stockpiled elsewhere. What other locations were considered? Include material placement as part of the alternatives analysis.
- Robust success criteria for successful wetland restoration after construction is needed. There are a few limited measures included but they are limited to vegetative success. We suggest that successful wetland restoration also be tied to the CWA Section 404 permit. In the event that wetland restoration is unsuccessful within an appropriate timeframe, we suggest that additional compensatory mitigation be required or evaluated if appropriate.
- The EIS states that the primary impact on wetlands from pipeline construction and right-of-way maintenance activities would be the temporary alteration of wetland vegetation and permanent conversion of forested wetland to scrub shrub or emergent wetlands. The EIS also noted that soil compaction may alter hydrology and soil conditions. We recommend the EIS include how these impacts would be minimized, or mitigated, which appears to have been part of the information provided in the PN. Please consider how to

restore preconstruction wetland hydrology. EPA is concerned that impacts have not been accurately characterized within the EIS.

- The EIS suggests that plowing could be conducted to de-compact soils affected during construction. We suggest that additional information on the proposed plowing, including depth of plow. In areas where compaction is of concern, pre and post construction testing can be conducted in order to measure changes in compaction rate.
- Fifty-one of the 251 total wetlands crossed by the proposed pipelines in Pennsylvania are classified as exceptional value (EV), with 15 of these containing a forest component. The acreage of EV wetlands impacted or crossed by the proposed project has not been provided. It isn't clear what avoidance and minimization measures have been taken with respect to these resources. Were any route alternatives evaluated to reduce impacts to EV waters? It is unclear that the CMP sufficiently addresses EV wetland impacts. It is unclear if CMP includes streams.
- No maps have been provided. EPA recommends that maps of EV areas be provided as they would be particularly helpful.
- Approximately 41.22 acres of wetlands will be temporarily impacted. The applicant should evaluate the temporal functional loss for all wetland types, including PEM, and provide mitigation for these losses.
- The mitigation plan needs to address how the applicant will monitor and control the threat of invasive vegetation within the project boundaries. Disturbed soils offer an excellent opportunity for invasive species to take hold of a sensitive area and can quickly impact the natural flora of the ecosystem.
- Page 13 of the Public Notice states that wetlands will be seeded with annual rye grass. We recommend the disturbed wetland areas be replanted with a wetland seed mix that is appropriate for the location of the impacts, as well as annual rye grass. The rye grass will provide quick stabilization, and the wetland mix will provide seed source for the successful restoration of the impacted area. Additionally, mitigation should discuss seeding will include native pollinator vegetation that will forward the cause for pollinator species such as bees.
- Clearly state when remaining surveys will be completed? Please describe how discrepancies between the remote sensing and field verification will be shared in the event that surveys are not completed prior to the FEIS. Page 4-69 states that the remote sensing methodology was tested for accuracy on field-delineated land area. The EIS does not describe the results of this comparison and testing.

8) Vegetation

- We recommend including a figure of the different types of vegetation communities in a map with an overlay of the pipeline project. This will help the reader better understand the range effect the project will have on the different vegetation types and the variety of vegetation that will be covered by the area of the project.
- Page 4-76 states that modifications to existing compressor stations would have limited effects on vegetation communities. Modifications at CS 517 will impact a total of 32 acres during construction. Modifications at CS 520 will impact a total of 36.1 acres during construction. Modifications at CS 190 will impact a total of 30 acres during construction. Considering that these 3 stations will impact greater than 90 acres.

combined, we suggest that vegetative impacts to these areas be considered and described in the EIS.

- Page 4-80 references figure B-2 from the Draft Migratory Bird Plan found in Appendix M. However this figure is located in Appendix B of the Draft Migratory Bird Plan. The appendices for the plan have not been included in the EIS.
- Please include a map of the interior forests that will be affected by the project. The DEIS should include an explanation of the method used to identify interior forest patches. Additionally, this section of the DEIS should list species that will be affected by the destruction of interior forests habitat and if any of those species are on Federal or state endangered species lists. If this is mentioned in another section in the DEIS, it should be referenced in this section.
- Agricultural lands including specialty crops (orchard and tree farms) and organic and no-till farms were mentioned earlier in the document, however they were not addressed in the vegetation section although impacts to agricultural lands are determined to be temporary to short-term.
- Please formalize the revegetation plan(s), which should include adaptive management. The DEIS does not include Transco Project-specific Noxious and Invasive Plant Management Plan. This plan should be included in the appendixes. This section should include a brief discussion on how the project will reduce the spread of invasive species along edge habitat.
- Some portions of the EIS indicate that forest impacts may take decades to recover to pre-construction conditions. It appears that impacts to forests would be long term if not permanent. Minimization efforts and mitigation for these impacts are not presented, and should be included in the EIS. Despite this, it is concluded that the permanent conversion of forested lands would not result in significant impacts. It is not clear what this conclusion is supported by. We suggest that FERC consider if significant impacts to interior forests may occur as a result of the proposed project.

9) Wildlife and Aquatic Resources

- 171 waterbodies have been identified by PFBC as containing sensitive fisheries in PA. All but 4 of these special concern waterbodies will be crossed using a dry crossing method. While direct instream work for crossings would have the potential to impact fisheries, there are other construction related activities that may impact fisheries and aquatic resources that should be considered. Vegetation clearing adjacent to streams and in the riparian corridor has the potential to reduce shade over stream, increase stream temperature, reduce carbon inputs to stream, etc. Shading impacts mentioned as temporary, earlier stated that forested areas could take decades to be restored. It is unclear that any active planting is planned.
- Unclear if the construction timing windows in fisheries of concern in PA are focused on fish spawning or recreational fishing.
- The aquatic resources considered only included fisheries. This is a limited consideration of aquatic resources, which can also include benthic macroinvertebrates, salamanders, and other species. No discussion on freshwater mussels was included in the EIS.

- Please be sure that all references noted in the EIS are included in Appendix Q References. Page 4-100 references Beschta and Taylor, 1988, however it does not appear to be included in Appendix Q References.

10) Rare, Threatened, and Endangered Species

- The FWS Pennsylvania Field Office has noted that the Project is within 5 miles of five known Northern Long-eared bat hibernacula in Schuylkill, Northumberland, and either Lancaster or York Counties (Shellenberger, 2015a). Two of the hibernacula are within 0.25 mile of the Project in Northumberland County between CPL South MPs 84.9 and 85.5. FERC has recommended that complete Northern long-eared bat survey data be filed prior to the end of the DEIS comment period. Mist net surveys conducted resulted in the capture of 70 northern long-eared bats. More than 1,000 acres of northern long-eared bat habitat would be impacted by the proposed project. It is not clear what specific avoidance and minimization efforts or route changes have been incorporated with regard to the northern long-eared bat. FERC has determined that the proposed project is likely to adversely affect the northern long-eared bat. Will any additional surveys be completed for this bat, considering that not all parcels were available for survey? Is FWS comfortable moving forward with not all areas surveyed?
- Please clarify if the recommended frequency, duration, and timing of all ESA surveys were followed. Have any of the recommended surveys not been conducted?
- Page 4-113 states that Transco will conduct wetland delineations on all parcels without survey access with potential northeastern bulrush habitat once they become accessible in 2016. Route was modified to avoid impacts to northern bulrush. Please clarify why the FWS recommended 300ft set back will not be attained.
- Incomplete surveys for Alleghany wood rat; the surveys should be finalized prior to decision-making and shared with public and agencies.
- While Transco anticipates avoiding impacts at the Susquehanna River due to the use of the HDD crossing method at the two crossing locations, Transco is considering conducting baseline mussel surveys in case an alternative crossing method becomes necessary or other unanticipated impacts could occur. Please explain how impacts will be assessed and provided to the public. Will further NEPA assessment be made public?
- Concern with how to address changes in crossing methods and unanticipated impacts in the event that a different unevaluated crossing type was necessary.
- No main conclusions were drawn about the impacts to RTE species. It is critical that potential impacts be identified, presented, and acceptable avoidance and mitigation determined.

11) Land Use, Recreation and Public Lands

- The proposed action crosses the Appalachian Trail at MP M-200 0.1 on SGL 211. The permanent right-of-way would create a new corridor although a forested buffer may be maintained along the right-of-way on either side of the Appalachian Trail, pending further evaluation of crossing methods and consultation with the PGC. Concern with crossing AT, and lack of certainty about buffer and veg along trail. Please clarify what the technical limitations of the conventional bore. Although the crossing will use a bore

method, it does not appear that impacts from construction on trail use and user experience has been considered.

- It is stated that Transco will develop a site-specific crossing plan, clarify which of the streams within Ricketts Glen State Park will be crossed and provide any available data about stream characteristics and quality. It is not clear that the user experience has been considered. Is the proposed crossing near any trails, trailheads, or other recreational locations? How will construction impact park users?
- PGC requested no work within October 1- December 30, which has not yet been agreed to. EPA encourages FERC and the applicant to incorporate and comply with the TOY restrictions suggested by PGC for each of the requested SGLs. If work is conducted during this period, please consider and address worker and user safety as appropriate.
- Lebanon Valley Rail – Trail states that since the crossing will be in agricultural land use and would therefore not affect the surrounding landscape. It is not clear why this has been assumed. The proposed action would preclude these areas from becoming forested in the future.
- The Chapman loop would cross Sproul State Forest at four locations, additionally the installation of a new MLV and communication tower is proposed in the SF. Although portions of the loop would be collocated, it is unclear if other avoidance and minimization measures have been considered in order to reduce impacts to the SF. A site specific crossing plan is not available. The EIS states that the looping was sited away from active recreational areas, however no maps or detailed information was presented. It is unclear if recreation within the SF will be impacted.
- Page 4-135 notes that concern from commenters about possible effects on septic systems/drain fields during construction. The EIS concludes that consultation by Transco with landowners to identify and avoid systems as well as compensate or damage that occurs during construction that impacts would be less than significant. Linear projects have the potential to impact these systems. Pipeline construction or maintenance may result in the need for systems to be relocated, or result in systems becoming unviable if it isn't possible for them to be relocated. EPA recommends that an evaluation of these types of impacts to systems be included in the EIS. This could be particularly important where systems are can no longer operate and result in additional displacements.

12) Conservation, Historic and Visual

- It is stated that there is one known WRP is near the construction area and one known FRPP easement is crossed by it. Please clarify if all lands within the construction area have been evaluated for WRP and FRPP easements. Please provide the restoration measures relating to the FRPP crossing.
- The DEIS mentioned that Transco contacted every SHPO's office and that: *"Transco submitted a revised plan for unanticipated discoveries during construction. To date, Transco has not filed the North Carolina SHPO response regarding this plan."* It seems that this statement is the same for each state affected in the DEIS. We recommend including the final concurrence statement from each SHPO office regarding the appropriateness of these plans.

- Please clarify why it was not feasible to use the conventional bore method to cross Tucquan Creek, a State designated Wild and Scenic River. What were the results of the geotechnical investigations that limited this method?
- Please describe the methodology used to identify and evaluate impacts to visual resources. It is unclear if a consistent approach was used to assess visual impacts. Specify if the same method was used for pipeline and aboveground facilities.
- Height information is only provided for communication towers, which will range from 40-190 feet in height. Do communication towers represent a hazard for birds and bats? Are guy wires necessary for communication towers?
- What will be the maximum height of facilities at above-ground facilities, including compressor stations? From what distance will compressor stations be visible? Clarify if compressor stations will be visible from residences, recreational areas, or other key viewpoints. It may be useful to develop a table for compressor stations that is similar to Table 4.8.8-1.
- Please clarify if the vegetation that is stated to provide visual screening will provide screening in all seasons or just through the spring and summer months. Please address facilities that will be visible above the existing tree line or vegetation height. The EIS notes that additional visual screening will be provided by the applicant, however it is not clear what is proposed and what amount of screening it will provide.
- Maps, visual representations, site plans or figures, and/or photos of example aboveground facilities should be included in the EIS. These would be incredibly useful for the public and other stakeholders to have a better understand of that the actual facilities proposed will look like.
- Please consider potential impacts from lights or beacons that may be on communication towers and other aboveground facilities.

13) Socioeconomics

- Page 4-168 concludes that “given the study area population (totaling 12,281,054) and the distribution of the construction workforce, the addition of 6,490 people would not be a significant change.” Please clarify where this total study area population was derived from. Table 4.9.1-1 provides the 2013 populations for each of the counties in PA affected by the project; the total population for those 10 counties is 1,517,537.
- Please provide estimated workforce totals for Counties that are affected by more than one project facility. For example, construction for CPL North, CPL South, CS 610, and the West Diamond Regulator Station will take place in Columbia County. It is unclear if the impacts from these combined construction/workforce have been considered. It be beneficial to consider workforce impacts by spread.
- Several studies relating to property values and mortgages are referenced in Section 4.9.5. It may be useful to include information about the size of pipelines (pipe diameter) in order to more fully understand how these relate to the proposed project.
- Table 4.9.8-1 and 4.9.8-2 should also include data specific to Pennsylvania.
- No maps relating to EJ were provided.
- It would have been preferable for the minority and low-income assessments to have been conducted using the minority and low-income population percentages of the study area as a whole as basis for evaluation. Comparisons of minority and low income populations for the county is appropriate in some cases, but in others may represent too large an area for

meaningful comparisons to be made. Comparison of the demographics of the study area to state, county and local benchmarks made provide more meaningful and insightful information as to the localization of minority and low-income populations of concern. Additionally, Environmental Justice concerns are local, occurring at specific points in communities, rarely are they impacting vast areas at a given time. We encourage FERC to attempt to focus on places where adverse impacts are more likely to occur and assess these impacts more comprehensively.

- As noted above, in some instances it may be more appropriate and informative to consider minority and low income populations at a more refined level of study. Please consider conducting a more detailed study for areas surrounding CSs and other aboveground facilities perhaps using block group of census tract level data.
- Please clarify the location of the 11 open houses and how open house information was disseminated to environmental justice communities within the project area (construction and operation).
- EPA encourages FERC to conduct meaningful engagement of environmental justice communities. It appears that some scoping meetings were located in counties with EJ locations. The DEIS does not disclose if any accommodations, such as an interpreter or providing literature/project information in other languages, were needed or made for non-English speaking communities.
- The DEIS states that “none of the counties that would be affected by the Project in Pennsylvania have the potential to be in environmental justice community based on race.” In the following paragraph, the DEIS states that three counties within the project area have populations larger than the state average, therefore considered an environmental justice community. This discrepancy should be clarified.
- The EJ analysis does not consider construction and displacement impacts on environmental justice communities. The DEIS should analyze if a disproportionate amount of environmental justice communities have construction related displacements, as well as construction truck traffic or water turbidity to areas that are used for subsistence fishing.
- Children’s health was not considered.
- EPA sees this project as a great opportunity to implement Health Impact Assessments (HIA). HIAs from the communities surrounding the new electric compressors and the communities surrounding the traditional gas compressors. The results of these assessments would help to define the services or interventions required to help to prevent or mitigate health problems associated to this type of projects if any. Additionally, the HIAs will ensure considerations of environmental justice (EJ - EO12898), children's health (EO – 13045) and human health as called by the NEPA process. We are providing some resources below. Also, you might contact EPA for guidance on this matter.
<http://www.humanimpact.org/new-to-hia/faq/>
- EPA assumed that the facilities would be equipped with emergency generator(s). EPA wants to make you aware that there are two specific rules for new source engines. One of these rules would apply to a generator for this facility. In order to learn and comply with these rules please visit: <http://www.epa.gov/region1/rice/>.

- EPA has issued three final rules that together will curb emissions of methane, smog-forming volatile organic compounds (VOCs) and toxic air pollutants such as benzene from new, reconstructed and modified oil and gas sources, while providing greater certainty about Clean Air Act permitting requirements for the industry. To comply with these rules please go to: <https://www3.epa.gov/airquality/oilandgas/actions.html>
- EPA recommends that for new equipment utilize contract specifications requiring advanced pollution controls and clean fuels: <http://www.northeastdiesel.org/pdf/NEDC-Construction-Contract-Spec.pdf> and <http://www.epa.gov/cleandiesel/technologies/index.htm>
Implement diesel controls, cleaner fuel, and cleaner construction practices for on-road and off-road equipment used for transportation, soil movement, or other construction activities, including:
 - ✓ Strategies and technologies that reduce unnecessary idling, including auxiliary power units, the use of electric equipment, and strict enforcement of idling limits; and
 - ✓ Use of clean diesel through add-on control technologies like diesel particulate filters and diesel oxidation catalysts, repowers, or newer, cleaner equipment.
- EPA recommends the use of low maintenance trees at the project sites (reduces pollutants emissions from maintenance activities) and the construction of Rain Gardens for erosion and runoff mitigation while decreasing impervious surfaces to improve ground water quality. By adopting these low-cost easy to achieve suggestions, extra enhancements will be achieved such as noise reduction and aesthetics improvement.

14) Air

- Background air quality monitoring data for PA and MD from 2013 was presenting using EPA AirData website as the source in Table 4.11.1-1. Please provide a map of the locations selecting showing their spatial relationship to the proposed CSs. County level data may not provide sufficient detail to analyze site level air quality conditions. No data was presented for Virginia, South Carolina and North Carolina, please explain why sources in these states were 'not considered to be significant'.
- Construction emissions of CO₂ (not CO₂e) are estimated to be 163,535.5 tpy. Does reporting construction emissions in CO₂ not CO₂e effect the analysis? Should it be reported as CO₂e to be consistent with other emissions data?
- Please include operational emissions for CS 605 and 610. No operational emissions were given for CS 605 and 610. These CSs will be electric-driven, and it is stated that minor methane emissions would not have a significant impact on local air quality.
- Emissions data should clearly include estimated emissions related to fugitive emissions, venting, blowdowns, gas-fired emergency shutdowns and gas heaters. The combined CO₂e emissions for existing and modifications at CS 517 and 520 are estimated to be

296,841 tons and 224,792 tons, respectively. It is unclear if venting, blowdowns, and other sources are included in these totals.

- Emissions data for all CSs included in the proposed project should be provided, including CSs 605, 610, 517, 520, 190.
- The emissions for CS 517 and 520 are based on the operating condition of 0 °F. Does the temperature of the operating condition effect the emissions estimated? Why was zero degrees F chosen? Was zero selected for all estimations made? It is unclear if estimates made at zero are conservative estimates or if estimates accurately represent anticipated working conditions.
- Please clarify if the emissions reductions and pollution controls, including low NOx combustor to control NOx emissions, being used at CS 190 will also be implemented at other stations. As it appears that the reductions and controls can be effective, in instances they are not proposed, please clarify why.
- Modifications at several stations is proposed, which will include the installation of gas turbines. Please clarify the rationale for not using electric powered turbines at these locations. The use of electric turbines may result in fewer local emissions at compressor stations.
- The DEIS should clearly explain the methodology used for considering operational emissions to local air quality.
- EPA is concerned by the lack of air modeling analysis provided as well as by the apparent lack of responsiveness by the applicant to FERC's requests for this critical data. According to the DEIS several compressor stations have potential to be significant, however appropriate air modeling has not been conducted and included in the DEIS. Not only will this modeling likely be a required component of any future air permits being sought, it would provide essential information for consideration in this EIS. FERC has recommended that the modeling be completed and filed prior to the end of the DEIS comment period, which EPA strongly supports. We recommend that this modeling data be made available for the public and other stakeholders within the NEPA process.
- Six months of air quality monitoring collected near the stations was available for DEIS. Transco has agreed to gather air data for three years post construction. Please clarify what will be done with the data collected during this time and how it will be shared with the public and other stakeholders. Clarify the steps that will be taken should the data show air impacts are occurring, and how impacts will be mitigated, and how future impacts will be prevented.
- Please include a map of selected air monitoring locations. Selected locations were varying distance from the nearest structure, please clarify if the same siting criteria were used for each stations (CS 517, 520, and 190).
- The data presented was collected CS 520 and 517 was collected while stations were not running at full capacity, which appears to underestimate emissions expected for the project. DEIS states "Compressor Stations 517 and 520 were not operating at the full station loads during air quality monitoring. Therefore, the potential exists for higher impacts from existing sources when Compressor Stations 517 and 520 are operating at full load."
- Additionally, it is not clear if CS 517 was fully operational during the monitoring period, as the EIS states that this location won't be finished by July. So it isn't clear what this data informs. Please more clearly explain what the data collected is meant to inform and

how data collected at less than full capacity is useful for the EIS. EPA is unclear that this information is useful within the DEIS as it may obscure the public's understanding of operational emissions.

- Monitoring data provided for CS 520 doesn't include the full dataset for SO₂, by excluding data collected during a system failure. The DEIS states that the failure was corrected and subsequent values were included. Please clarify why data collected during the system failure wasn't this included. The DEIS should consider possibilities of similar system failure to occur in the future and potential impacts.
- The DEIS mentioned: *"Activated carbon filtration would be installed for deodorization at Compressor Station 155. An activated-carbon filter cartridge, housed in carbon-steel filter housing, would be designed to remove mercaptan from the odorized natural gas."* Please clarify and explain this information. Why will mercaptan be removed at this location? Please explain.

15) Noise

- The DEIS should describe the hours the HDD will be used, specifically if construction will be 24 hours until the pipeline is crossed and the estimated days the HDD will be used (example: days or hours). Also, if the HDD fails, how long will this extend the construction? These descriptions could clarify the impacts to NSA's.
- There are several residences north of the Susquehanna River HDD sites that are not considered NSA's (see Figures 4.11.2-7 and 4.11.2-8). The DEIS should consider these as NSA's as they are under ½ miles from the HDD entry/exit site and should be assessed for impacts from noise construction. In some cases, they seem of equal distance to some other NSA's.
- Figures on operational noise should be included in demonstrating the location of NSA's for the new 605 and 610 compressor stations.
- Current noise levels are provided for CS 605, however they are not provided for any of the other proposed CSs. Please provide equivalent information for each of CSs included in the proposed action.
- The DEIS states that "although the noise of a unit blowdown event could be audible at the nearby NSAs, it would not be a substantial noise impact. Moreover, any unit blowdown events would be infrequent and would last for only a short period of time (1- to 5-minute period)." Please clarify or give an example of what a substantial noise impact would be. We also suggest including why blowdown events occur and how often they are expected to occur within certain timeframes (days, month, year, etc).
- The proposed action includes modifying some existing CSs by increasing horsepower. Please clarify if changes in operational noise will be monitored and reported to FERC for any period of time after modifications are made.
- The noise surveys should be made available to the public via appendixes. These appendixes should be referenced in the DEIS.

16) Reliability and Safety

- Page 4-246 states that Transco has committed to several safety measures that exceed requirements. One measure includes hydrostatic testing of the entire pipeline at a higher

level suitable for Class 3 locations. Please clarify if there are different levels of hydrostatic testing requirements based on the Class designation and include this information in the EIS. Will hydrostatic testing of the entire pipeline at a higher level result in different potential environmental impacts? Or are there different water use requirements? While we understand the need to ensure safety, it is not clear if there are alternatives related to these measures that could result in fewer adverse impacts. What level of safety is to be attained?

17) Cumulative impacts

- The mineral facilities/resources included in Appendix I should be included in the CIA.
- Leidy Line system should be included. Crosses Ricketts Glen, and SGL 206. Why are upgrades to this line not viable? Have they been considered? When was this line put in service? Transco's Leidy Southeast Expansion Project³³ (discussed briefly in section 4.13.1) was approved by FERC in December 2014 and placed into service on January 5, 2016. At its closest points in Luzerne, Lycoming, and Columbia Counties, facilities associated with the Leidy Southeast Expansion Project are between 0.0 and 8.4 miles from the Atlantic Sunrise Project. The project was built using a 105-foot-wide construction right-of-way with a 50-foot-wide permanent right-of-way retained for operation, although, due to overlap, most of this comprises existing permanent right-of-way associated with existing Transco pipelines.
- What is the status of the restoration associated with the various projects given, as many are stated to be in service? Have additional plantings been necessary, or even additional mitigation. How were these impacts mitigated? What mitigation was completed? Are they good actors? Do we believe efforts will be successful? Did work have to be stopped, how did those other projects go? Any lessons learned?
- ROW widths for other projects are given, is any estimation of veg, ROW impact provided?
- Please include a map(s) to show the various spatial/geographic boundaries used for the cumulative impact assessment.
- We recommend that the analysis consider potential cumulative impacts to wildlife and FIDS.
- It is unclear what geographic or temporal scope is being used for certain resources, including vegetation and wildlife. We suggest that these be more clearly defined in the EIS.
- It is not clear that past and present actions were included in the cumulative impact analysis for land use or wetlands. The DEIS states "The Atlantic Sunrise Project in combination with other foreseeable future actions listed in the table in appendix P would result in temporary and permanent changes to current land uses."
- The DEIS states regarding cumulative impacts on recreational areas, "At present, we are not aware of recreational areas that would be cumulatively affected by the Atlantic Sunrise Project and other potential actions. As a result, although the Project would impact recreation and special interest areas, we do not anticipate significant cumulative impacts on these areas." Earlier in the EIS it is stated that Atlantic Sunrise will be collocated (or partially collocated) through recreational areas like Ricketts Glen. The lines that the project is being collocated with should be considered as past, present and reasonably

foreseeable actions. We suggest that cumulative disruption to the parks and reduction of resources be considered in the EIS.

- Cumulative impacts to visual resources are presented. This section briefly notes compressor and meter stations but it doesn't consider other CSs from other projects. What CSs are near the proposed CSs associated with Atlantic Sunrise?
- The DEIS concludes that FERC-jurisdictional and non-jurisdictional projects could contribute to cumulative impacts, however these cumulative effects are not expected to be significant. Please clarify this statement address potential cumulative impacts on all resources?
- Please clarify if CS 517 and 520 are being constructed as part of the Leidy Southeast Expansion project, or if the horsepower included as part of Leidy Southeast represent an expansion to a previously existing station. It is not clear that cumulative impacts from CS operation considers other CSs nearby, or valve releases, leaks or blowdowns. Please clarify if the emissions associated with the Leidy Southeast project are accounted for in the EIS.
- The EIS does not appear to include a discussion on potential cumulative impacts on residences, although commercial/residential and mixed development projects were included as past, present and reasonably foreseeable actions. Atlantic Sunrise crosses numerous residential properties and passes within 50 feet of about 90 residential structures, including 68 houses or townhomes and 22 garages or sheds. 73.7 acres of residential land will be affected by construction, of these 20.4 acres would be within the permanent ROW. FERC should consider the cumulative impact on residences and the community.
- Surface water withdraws are discussed on page 4-274, and present withdraw information for the project and for Marcellus Shale compared to state totals, which is contradictory to the cumulative study area for waterbodies and wetlands, which are stated to be at the watershed level. Please revise this data to more accurately compare, or at a minimum include WS scale data. Are any of other withdraws from the same streams proposed to be used by Atlantic Sunrise?
- Although the EIS concludes that some loss of wetland function could occur from cumulative impacts, no discussion of wetland functions and values was included.
- Page 4-275 states that "Although construction of the Atlantic Sunrise Project along with the other actions in the ROI would result in the conversion or reduction in the amount of forested and woody wetlands in the vicinity, the creation of new wetlands and restoration or enhancement of existing wetlands as may be required by the USACE and individual states would appropriately mitigate for these impacts and minimize any cumulative wetland effects." The analysis includes very little consideration of conversion, and does not provide an estimate of what the cumulative impact of conversion is. As previously state in our comments, mitigation should not be relied upon to prevent cumulative impacts. When considering wetlands we recommend looking at resource trends and considering historic wetlands.
- Vegetation and Wildlife—Page 4-275 states "The effect of clearing would be greatest during and immediately following construction and would diminish when the disturbed areas are restored and revegetated and the wildlife that were displaced during construction return." This does not acknowledge that it could take decades for forest to recover, potential change in community, permanent loss of interior forest, possible

introduction of invasive species, etc. Since it is not clear that an active vegetation restoration plan has been developed, it should not be assumed that the area would be revegetated and wildlife would return. Please address the potential for cumulative impacts to interior forest.

- Page 4-277 states “Transco has reduced the potential for cumulative impacts associated with the Atlantic Sunrise Project by collocating the pipeline and aboveground facilities where possible with existing rights-of-way and existing aboveground facilities. Following construction, Transco would revegetate disturbed areas and monitor these areas to ensure revegetation is successful. Previously forested areas occupying the temporary right-of-way and other temporary workspaces would be allowed to regrow, and vegetation maintenance on the permanent right-of-way would be restricted.” Limited detail about the restoration plan has been provided in the EIS. We urge FERC to develop a detailed restoration plan that goes beyond allowing vegetation to regrow.

Document Content(s)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

APR 09 2014

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First St. NE, Room 1A
Washington, D.C. 20426

Reference Docket Nos. CP13-499; CP13-502-000; PF12-9-000

Dear Ms. Salas:

The U.S. Environmental Protection Agency has reviewed the draft environmental impact statement (DEIS) for the Constitution Pipeline and Wright Interconnect Projects (CEQ # 20140039). The proposed pipeline would be located from Susquehanna County, Pennsylvania to the existing Tennessee Gas Pipeline Company and Iroquois systems in Schoharie County, New York. The proposed compressor station would be located at the existing Wright Compressor Station in Schoharie County, New York. This review was conducted in accordance with Section 309 of the Clean Air Act, and the National Environmental Policy Act (NEPA).

The Constitution Pipeline project entails the construction and operation of 124.4 miles of new 30-inch-diameter natural gas pipeline and associated equipment and facilities in Pennsylvania and New York. Constitution also proposed to construct and operate two new metering and regulating (M&R) stations; two tie-ins, and 11 mainline valves; and would install a pig launcher and a pig receiver at the M&R stations. The Wright Interconnect Project would involve the construction and operation of new compressor facilities adjacent to as well as modifications to Iroquois' existing Wright Compressor Station. Iroquois' proposed expansion would be constructed completely within the property boundaries of the existing Wright Compressor Station. The proposed pipeline and interconnect projects would deliver up to 650,000 dekatherms per day (Dth/d) of natural gas supply from Susquehanna County, Pennsylvania ultimately to markets in New York and New England.

EPA has rated the DEIS EC-2 Environmental Concerns, Insufficient Information (see attached sheet) primarily due to the incomplete discussion of a collocated alternative on Route I-88, and lack of an upland forest plan, direct impacts from access roads to wetlands, slope stability analysis, indirect impacts from local sales of natural gas, and an incomplete general conformity applicability analysis. Our detailed comments are enclosed.

EPA does note Constitution's access to 24 percent (approximately 30 miles) of the project area has been denied. Therefore, the impacts reported in the DEIS may be higher than reported for many resources. This lack of information may necessitate supplements as this information becomes available.

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Thank you for the opportunity to comment. If you have any questions regarding this review, please contact Lingard Knutson of my staff at (212) 637-3747.

Sincerely,



Judy-Ann Mitchell, Chief
Sustainability and Multimedia Programs Branch

Enclosures

EPA's Technical Comments on the FERC's Draft Environmental Impact Statement
"Constitution Pipeline and Wright Interconnect Projects, February 2013"
April 7, 2014

Alternatives Analysis:

Section 3.4.1.2 discusses Alternative M, a route that would collocate the pipeline along I-88. EPA is concerned that collocating the pipeline along I-88 has not been fully evaluated. A meeting with New York State Department of Transportation (NYSDOT) is discussed, but no meeting minutes, or letter from NYSDOT is included in the DEIS identifying limitations on collocation. In fact, both NYSDOT and Federal Highways Administration (FHWA) have policies and regulations in place to work with applicants on collocation issues. EPA is not aware of a provision in the transportation regulations for locating a natural gas pipeline along an interstate highway only when no other feasible alternative exists. EPA recommends that FERC, Constitution, NYSDOT, FHWA, and the federal and state resource agencies meet to discuss this alternative fully.

Because of the importance of Alternative M in the possible avoidance of several environmental impacts, EPA recommends that maps of this alternative be made more clear, and delineate the relationship of the pipeline route to I-88 in more detail. It would be helpful if all the maps in the document identified roads to make it easier for the public to identify where the pipeline route is proposed.

"Environmental Hazards" is used several times in tables throughout the alternatives section. This should be defined.

Section 3.4.3.3 discusses minor route variations assessed for impacts on agricultural lands. All minor routes should have been included in the DEIS for review by the public and resource agencies.

Geology and Soils:

In the Executive Summary and Section 4, a Karst Mitigation Plan is mentioned. However, it is not available for review as part of the DEIS. Without it, **the public and agencies are unable to ascertain whether Constitution's Karst Mitigation Plan will be protective of the environment.** EPA also recommends that the environmental construction plan be available for review as part of the EIS or on FERC's website.

The formal slope stability analysis was not included in the DEIS. While FERC recommends that the analysis be completed prior to the completion of the Final EIS, this **negates the ability of agency specialists and the public to review the analysis and comment on it.** EPA concurs with comments by the United States Geological Survey that there is a need for better means to determine landslide susceptibility in the steep slope areas besides relying on ground inspections.

LIDAR imagery, tree structure and other means should be considered for finding old landslide scarps, scars, and slope failure areas.

Any site specific blasting plans should be included in the DEIS. EPA is very concerned that any blasting may change hydrology in the immediate area, which may impact wetlands.

Water:

The DEIS did not include any impacts on water bodies that may be caused by the construction and operation of workspaces. FERC has recommended that Constitution file a description of impacts and any proposed impact avoidance, minimization and mitigation measures for each waterbody that might be impacted by workspace construction. EPA reiterates that all reasonably foreseeable direct and cumulative impacts should be included in the DEIS, allowing them to be reviewed by the public and agencies.

Section 4.3.1.5 discusses the location of water supply wells and springs; however, Constitution has not completed locating all water wells and springs within 150 feet of the pipeline.

Landowners and the state agencies should be apprised of this information within the DEIS.

Table 4.3.1-2 states that two water wells are within the boundaries of contractor yards. Specific best management practices and mitigation plans to protect those wells should be included in the DEIS.

Section 4.3.1.5 (Water Use and Quality) states that Constitution has agreed to provide expert field assessment of seeps and springs within 150 feet of construction workplaces to determine if construction activities could have an impact on the seeps and/or springs. This information should be in the DEIS and include whether the seeps or springs are part of a wetlands complex, and whether changes in flow rate or direction would impact wetlands.

Wetlands:

Constitution proposed to temporarily fill one wetland and permanently fill 13 wetlands (approximately 0.3 acre) for the purpose of constructing access roads. Neither the site specific plans for, nor the purpose of this action, was included in the DEIS.

Section 4.4.4 states that temporarily disturbed emergent and scrub-shrub wetland will be restored by seeding and mulching. Constitution should consider planting shrub saplings in scrub-shrub areas.

Section 4.4.5 states that offsite wetland mitigation is proposed to compensate for temporary impacts to forested wetland and for permanent impacts to forested and scrub-shrub. Mitigation will be a mixture of in-lieu fee credits and permittee-responsible mitigation. Constitution should consider restoring temporarily cleared forested wetland areas in the right-of-way by planting tree and shrub saplings.

Section 4.4.1.4 discusses that Constitution has not completed wetlands surveys for three contractor yards. While Constitution states that it will avoid any wetlands within or adjacent to the yards, the wetland delineations and identifications should have been included in the DEIS, along with avoidance or mitigation plans.

Wildlife and Vegetation:

It is EPA's understanding that the Endangered Species Act (ESA) surveys nor the consultation with the Fish and Wildlife Service (FWS) is complete. Discussions concerning surveys for the Northern Long-Eared Bat (*Myotis septentrionalis*) a candidate species for ESA listing, the bald eagle mitigation plan and the Upland Forest Mitigation Plan have not been finalized. The survey information, and more importantly, the Upland Forest Mitigation Plan should be included in the DEIS for review by the public and agencies. Without a mitigation plan, EPA is unable to assess the true direct impacts to trees from the proposed pipeline. EPA also recommends that FERC verify with FWS that fringe forest habitat is equivalent to interior forest habitat, as assumed in the DEIS.

It also appears that Constitution has not submitted "the remaining surveys for state-listed species that may be present in the pipeline project workspaces." Any surveys for state-listed species should have been included in the DEIS for public and agency review of impacts to wildlife.

The project will incur impacts on 439.7 acres of interior forest during construction, and 217.9 acres during operations. While FERC and Constitution appear to believe that interior forest is equivalent to fringe forest (as will be created by the pipeline easement) in terms of habitat to migratory birds and raptors, this assumption should be verified for this project, and a Habitat Equivalency Analysis (HEA) be completed for the loss of interior forest to migratory birds, bats and raptors. This could be a similar effort to the HEA for Mitigation of the Gateway West Transmission Line prepared by the Bureau of Land Management in June 2012. Forest fragmentation by both interstate and intrastate pipeline and other energy production facilities is increasing in the New York/Pennsylvania area (as evidenced by the list of pipeline projects near the proposed Constitution Pipeline in Table 4.13-1) and those cumulative impacts should be analyzed as well.

Pipeline easements through interior forests will also encourage the spread of invasive plant species into those areas. While Section 2.5.5 states that Constitution would perform monitoring for invasive plant species on at least an annual basis for three years following construction, the invasive plants will not stop germinating after three years. Continual mowing of the easement will keep the area disturbed encouraging the growth of invasives. FERC should require continuous invasive plant monitoring and removal for the life of the pipeline, or as long as the easement is present. Constitution should also be required to replant young native trees with a 4" diameter along the sides of the easement to slow invasive species growth and replenish trees taken down for construction purposes.

Section 4.5.1 states that Constitution should file a description of its proposed access roads leading to the two proposed meter stations prior to the end of the DEIS comment period. This information should have been included in the DEIS.

In Section 4.8.4.3, FERC should verify with the New York State Department of Environmental Conservation that tracts enrolled in various conservation programs will not be penalized by the construction of the Constitution pipeline through those lands.

EPA is also concerned that the loss of trees and intact forests will exacerbate climate change due to the loss of carbon sink.

Air:

The General Conformity applicability analysis (Table 4.11.1-4) indicates NOx emissions just below the threshold level, however, **there is no supporting documentation in the DEIS to determine how those emission levels were derived.**

The calendar year(s) covered in Table 4.11.1-4 for the construction emissions should be clarified. General conformity is determined on a calendar year basis.

Supporting calculations and documentation should be provided to show how the NOx and VOC emissions from construction in the general conformity applicability analysis were determined.

EPA recommends that construction emission mitigation options include the elimination of unnecessary idling at job sites and a commitment to use the cleanest available equipment, such as those meeting EPA's Tier 3 or Tier 4 nonroad emission standards.

Cumulative Impacts:

The DEIS states that besides executing binding precedent agreements for the entire proposed 650,000 Dth/d, Constitution has also entered into a Memorandum of Understanding with Leatherstocking Gas Company, LLC to allow Leatherstocking to interconnect with the proposed pipeline and deliver gas to homes and businesses within communities in Pennsylvania and New York. Leatherstocking would construct the necessary infrastructure. The document states "because the specifics of this infrastructure are unknown, impacts are discussed in a general sense where applicable below." However, the impacts are never mentioned again. Any construction or distribution of natural gas by Leatherstocking is an indirect effect of the Constitution pipeline, and any reasonably foreseeable impacts should be analyzed. This should include, but not be limited to, impacts to waterbodies, wetlands, land use, and housing growth.

General:

Section 2.2.1.3 states that **"additional extra workspaces beyond those currently identified could be required during construction of the pipeline".** We find it unsettling that Constitution, a partnering of Williams, a leading energy infrastructure company; Cabot Oil & Gas; Piedmont Natural Gas; and WGL Holdings, **does not know what workspaces they will need to construct the proposed pipeline. All areas used for construction of this pipeline should be determined, analyzed for environmental impacts, and included in the DEIS.**

Section 3.1.2.3 should be updated to include that in January 2013, the Bureau of Ocean Energy Management issued a request to determine whether there is competitive interest in leasing an area offshore New York that the New York Power Authority has proposed for developing offshore wind energy.

Section 4.2.3.3 and Table 4.2.3-1 state that 34.8 acres of prime farmland or farmland of statewide importance will be permanently impacted by access roads, however, Table 4.2.2-2 appears to indicate that only 22.8 acres will be permanently impacted. Explain this discrepancy.

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommend for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1-Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analysis, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From: EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment. ↑

Document Content(s)

CONSTITUTION PIPELINE LETTER DEIS.PDF.....1-8



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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ATLANTA, GEORGIA 30303-8960

October 26, 2015

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FEDERAL ENERGY REGULATORY COMMISSION

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

ORIGINAL

SUBJECT: Draft Environmental Impact Statement for the Proposed Southeast Market Pipelines Project, FERC Docket Numbers: CP14-554-000, CP15-16-000, and CP15-17-000; ERP No. FRC-E03020-FL-AL-GA; CEQ No. 20150256

Dear Ms. Bose:

The United States Environmental Protection Agency (EPA) has completed its review of the subject Draft Environmental Impact Statement (DEIS) pursuant to the Clean Air Act Section 309 and the National Environmental Policy Act (NEPA) Section 102(2)(C) requirements. The Federal Energy Regulatory Commission (FERC) proposes to license the construction of a total of 685 miles of natural gas transmission pipelines and associated facilities consisting of three separate pipeline projects (i.e., Transco's Hillabee Expansion Project, Sabal Trail and the Florida Southeast Connection). The Sabal Trail project is approximately 515 miles of new pipeline and easements from central Alabama through southwest Georgia to Osceola County, Florida. The proposed pipeline is expected to have potentially significant environmental issues related to drinking water supplies (Floridian aquifer), sensitive geologic formations (Karst), wetlands, conservation areas, environmental justice (EJ) communities, and air quality and greenhouse gas (GHG) emissions. The proposed Sabal Trail project alone will provide up to 1.1 billion cubic feet per day of natural gas to central and northern Florida.

The EPA has consistently expressed concerns over the preferred route through the States of Georgia and Florida to both the FERC and its applicant throughout the FERC's NEPA scoping process. The FERC's environmental analysis in the DEIS is primarily focused on identifying and mitigating impacts to the proposed action associated with proposed project and not avoiding and minimizing impacts to environmentally sensitive areas. The EPA has attached detailed review comments to this letter for the FERC's consideration (See attachment).

The EPA has very significant concerns over the FERC's process and full and objective compliance with the NEPA regulations at 40 CFR Part 1500. The FERC's consultations with the Florida and Georgia Geological Societies, Suwannee River Water Management District, Florida Department of Environmental Protection (FDEP), and the EPA occurred after the FERC accepted the applicant's 2014 application and after it approved the applicant's 2013 request to initiate the FERC's NEPA pre-filing process. Both the application and the pre-filing request contained the applicant's preferred route which became the FERC's preferred route as identified in the DEIS. The FERC/applicant's preferred route is the subject of an enforceable contract between the applicant and Florida Power and Light (FPL) that was signed on June 26, 2013. The

FERC's preferred route is also the subject of FPL's December of 2012 request for proposals. Moreover, the applicant has indicated that the route's alternative analyses is severely constrained by precedent agreements with its main client. From the EPA's understanding, the applicant will potentially suffer 'monetary damages' if it cannot meet its pre-committed contractual deadlines. The EPA believes that these pre-conditions may have affected the FERC's ability to rigorously explore other potentially more environmentally-sound alternatives for portions of the proposed pipeline route.

Based upon the EPA's calculations from different tables and sections of the DEIS, it is projected that the proposed pipelines will directly impact a total of 1,255.1 acres of jurisdictional wetlands covering three (3) U.S. Army Corps of Engineers (ACE) Districts (i.e. Mobile, Jacksonville and Savannah). The DEIS does not fully identify avoidance and minimization measures for the preferred alternative's jurisdictional impacts as required by the Clean Water Act Section 404(b)(1) Guidelines. Furthermore, the FERC's compensatory mitigation plan for unavoidable impacts to jurisdictional waters of the U.S. has not been finalized and the draft mitigation plan was not included in the DEIS.

The proposed project will also directly impact 177.8 acres of numerous conservation areas, including the Green Swamp in Florida. The EPA has substantial environmental concerns with these dedicated conservation areas being permanently converted to a pipeline easement. From the DEIS it appears that it is the FERC's and applicant's intent to let these conservation areas naturalize to pre-construction conditions and that this land use conversion will not be a significant long-term environmental issue. From past experiences with utility easements and required maintenance and access, the EPA does not believe that this proposition is accurate and that there will also be potential long-term impacts to natural resources including water quality and aquatic resources in and adjacent to the easements.

The proposed pipeline is expected by the EPA to have significant impacts to karst areas in the State of Georgia and Florida and represents a potential threat to groundwater (and surface waters) resources. The EPA is requesting that the FERC develop an alternative route to avoid impacts to the Floridan Aquifer and its sensitive and vulnerable karst terrain. The EPA has recently received an emergency petition¹ to designate the entire Floridan Aquifer System as a sole source aquifer pursuant to §1424(e) the Federal Safe Drinking Water Act. This designation is for areas that may have no alternative drinking water source physically and economically available to supply all who depend on the aquifer for drinking water. Moreover, the Florida Geological Survey has delineated a 32-county Springs Protection Area to protect the sole source of drinking water and the source of spring discharge, groundwater from the Floridan Aquifer.

The DEIS did not fully address the December of 2014's *Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts* issued by the President's Council on Environmental Quality (CEQ). As described in the guidance, "*Unlike the 2010 draft guidance, the revised draft guidance applies to all proposed Federal agency actions*". The FERC should comply with the guidance and fully address the requirements in either a supplemental or final NEPA document. The EPA generally supports alternative, cleaner fossil fuels such as natural gas to replace coal-fired and oil-fired power plants. However, considering the potential magnitude of the proposed

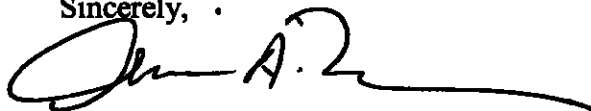
¹ April 28, 2015, emergency petition submitted by the Sierra Club Florida Chapter to the EPA.

project and its resulting greenhouse gas (GHG) emissions, the EPA is requesting that a full life cycle analysis (LCA) be conducted for the proposed pipeline project.

The EPA has rated the DEIS's preferred alternative as 'EO-2', meaning that we have 'environmental objections' to a significant portion of the proposed pipeline route due to the magnitude of the impacts to jurisdictional wetlands and that we are requesting additional information that was not included. As currently proposed in the DEIS, the preferred alternative has the potential to violate the Section 404 requirements of the Clean Water Act. Appropriate and required avoidance and minimization measures to jurisdictional resources have not been documented and the plans to provide compensatory mitigation for unavoidable impacts were not disclosed in the DEIS. Furthermore, the proposed action has the potential to effect the designation of the Floridan Aquifer as a sole source aquifer under the Safe Drinking Water Act. The EPA has substantial environmental concerns that local community water supplies could be adversely impacted in the future. Additional clarification is also being requested for potential impacts to environmental justice (EJ) communities. The analysis performed in the DEIS does not fully inform the public as to the potential direct or indirect impacts to EJ communities resulting from the proposed action.

The EPA has attached its specific recommendations for the FERC's further consideration. The EPA recommends that the FERC re-evaluate its environmental alternatives analysis for routes that avoid environmentally sensitive areas including jurisdictional wetlands, conservation areas, EJ communities and sensitive karst terrain areas prior to proceeding with a final EIS (FEIS). As previously noted, the EPA also requests that the FERC fully investigate compliance with CEQ's guidance on GHG emissions and climate change. For questions regarding EPA's review of the DEIS and the attached detailed comments, please contact Ms. Beth Walls of my staff at walls.beth@epa.gov or 404-562-8309.

Sincerely, .



Christopher A. Militscher
Chief, NEPA Program Office
Resource Conservation and Restoration Division

Attachment: EPA's detailed comments

Cc: Karin Leff, Acting Director, NEPA Compliance Division, EPA HQ
Tony Able, Chief, Wetlands Streams Regulatory Section, EPA R4
Fred McManus, Chief, Ground Water and UIC Section, EPA R4
Philip Mancusi-Ungaro, Office of Regional Counsel, EPA R4

Attachment
EPA Detailed Comments on FERC's Draft Environmental Impact Statement for the
Proposed Southeast Market Pipelines Project
CEQ No. 20150256, ERP Number FRC-E03020-FL-AL-GA.

BACKGROUND: The proposed action consists of construction and operation of three separate, but related, interstate natural gas transmission pipeline systems: the Hillabee Expansion Project, the Sabal Trail Transmission Project, and the Florida Southeast Connector (FSC) Project. The reason for the proposed action centers on Florida Power & Light Company's (FPL) geographically specific request for proposal to construct and operate a new, onshore natural gas transmission pipeline originating near Transco's Compressor Station 85 in Choctaw County, Alabama, extending through southwest Georgia and central Florida, connecting to a hub in Osceola County, FL, then extending to FPL's existing Martin County, Florida, Clean Energy electric generating plant.

Hillabee Expansion Project: Transcontinental Gas Pipe Line Company, LLC (Transco) proposes to construct and operate 43.5 miles of pipeline loop in eight segments, one new natural gas fired-compressor station, modify three existing compressor stations, and mainline valves, pig launchers and receivers, and the necessary appurtenant facilities. The purpose is to increase the volume of natural gas available to source the proposed Sabal Trail Transmission pipeline. Transco's mainline transports natural gas from the Texas Gulf Coast region to southern New England. Transco is currently implementing improvements to ship natural gas from the Marcellus Shale region of the Mid-Atlantic States back toward the Gulf Coast through its main line. Gas from the Marcellus Shale region can then be exported from liquid natural gas (LNG) facilities on the Gulf Coast. These LNG facilities currently are adding liquefaction capacity to export natural gas in the liquid form to overseas markets. According to the FERC, of the five Gulf Coast LNG Export terminals it has recently approved, four are under construction.ⁱ And there are 16 additional proposed liquefaction/export terminals for the Gulf Coast.ⁱⁱ

Sabal Trail Transmission Project: The Sabal Trail Transmission, LLC, proposes to construct and operate the Sabal Trail Transmission System (STT Project). The STT Project consists of 480.9 miles of 36-inch-diameter mainline pipeline to connect to Transco's main line in Alabama. This pipeline will traverse through southwest Georgia, and Florida. It will require the construction of 5 compressor stations to pump gas through the mainline. These stations will be located in Alabama, Georgia, and Florida. This pipeline system includes the construction of a hub, the Central Florida Hub, and 2 pipeline laterals: 13.1 miles of 36-inch-diameter lateral pipeline, called the Hunters Creek Line, and 21.5 miles of 24-inch-diameter lateral pipeline, called the Citrus County Line, both in Florida. The proposed system will also require the construction of mainline valves, pig launchers and receivers, meter and regulations stations, and other necessary appurtenant facilities.

The Florida Southeast Connector Project: Florida Southeast Connection, LLC, proposes to construct and operate the Florida Southeast Connector (FSC) transmission pipeline system (FSC Project). The FSC Project will transport natural gas from the Central Florida Hub to FPL's

existing natural gas-fired Martin Plant, in Martin County, Florida. To do this, FSC will construct and operate 77.1 miles of 36-inch-diameter pipeline and 49.3 miles of 30-inch-diameter pipeline, and associated infrastructure including mainline valves, 2 pig launchers and receivers, meter and regulating stations in southeast Florida.

AFFECTED ENVIRONMENT: The Floridan Aquifer is one of the most productive aquifers in the world. It provides water for hundreds of thousands of people in small communities and rural areas in addition to large population centers of Florida and Georgia. The Environmental Protection Agency (EPA) has recently received an emergency petitionⁱⁱⁱ to designate the Floridan Aquifer System as a sole source aquifer pursuant to the Federal Safe Drinking Water Act (SDWA).^{iv}

The Floridan is composed of a thick sequence of soluble limestone, located in a humid, subtropical climate. It contains fracture systems, indicated by linear traces on the land surface, which are associated with concentrated karst features associated with increased water movement and dissolution. It is highly permeable and highly susceptible to land-use associated contamination. Many of its springs exhibit increased nitrogen levels associated with agricultural practices. The preferred route alternative as presented traverses the Floridan Aquifer where it has the highest transmissivities - horizontal groundwater flow rates - greater than 1,000,000 square feet per day.^v These transmissivities approximate the speed pollutants can move through the aquifer. Additionally, the preferred route traverses areas in both Florida and Georgia where the Floridan aquifer is also unconfined which means it is either exposed to the surface or has a thin cover.^{vi}

The Floridan Aquifer's karst landforms also include sinkholes, caves, disappearing streams, springs, extensive underground voids (caves, caverns, and conduits) and drainage systems.^{vii} Springs are the surface discharge point for its underground drainage system. Sinkholes can occur in the beds of streams, sometimes taking all of the stream's flow, creating a disappearing stream. Dry caves are parts of karst drainage systems that are above the water table, such as Marianna Caverns. Additionally, the Floridan Aquifer contains well-developed underwater, unmapped cavern systems, large enough to be explored by divers, such as the Madison Blue Spring which is still being mapped.

Floridan Aquifer - Georgia

The proposed pipeline route enters the karst-sensitive area of the Floridan Aquifer in southeastern Stewart County, Georgia, 20 miles east of the Alabama border. The pipeline route continues into Georgia within this karst-sensitive area in parts of Webster and Terrell Counties. The applicant identified 235 potential sinkholes over a 126 mile segment within the proposed route corridor through southwest Georgia. Additionally, 17 fracture also traces intersecting the proposed route it in Terrell, Dougherty, Brooks, and Lowndes Counties.^{viii} The Floridan Aquifer is unconfined in the Dougherty Plain where it serves as the primary water supply for southwestern Georgia. The Dougherty Plain's prevalence of karst topography, including sinkholes and springs makes it one of the most sensitive areas in Georgia the proposed action crosses.

At least two known major springs exist in the vicinity of the pipeline: Radium, and Blue (Wade) springs. The proposed pipeline exits the western lobe of the Radium spring shed up-gradient of this spring in Dougherty County at a distance of approximately 2.3 miles. The proposed pipeline's closest approach to this spring is approximately 1.05 miles. The proposed pipeline passes within 0.88 miles of Blue (Wade) spring in Brooks County. Moreover, springs feed most of the Flint River within Dougherty County. Most of these springs are unmapped and located within the river channel. The proposed pipeline will cross both the Flint and Withlacoochee Rivers in Georgia using the HDD technique. The proposed Flint River crossing is in Dougherty County, approximately 1.7 miles southwest and downstream of Radium Spring. And the proposed Withlacoochee River crossing is between Brooks and Lowndes Counties, approximately 0.9 mile northeast and upstream of Blue (Wade) spring. The proposed route crosses the eastern edge of the Dougherty Plain, it then traverses the Solution Escarpment as it passes into Mitchell County. The escarpment's base is characterized by solution features: long, narrow cavities or sinkholes. The proposed route then crosses southeastern Brooks and southwestern Lowndes Counties where the Floridan Aquifer's confining units have been eroded, resulting in increased prevalence of sinkholes in this area.

Floridan Aquifer - Florida

Approximately half of Florida has less than 98 feet of overburden soil over a thick limestone platform, with rock outcropping in many areas. The limestone is often weathered or poorly consolidated near the surface. Similar to the Dougherty Plain, the limestone contains fissures and solution channels providing conduits for the vertical flow of surface water into the Floridan Aquifer.¹⁴ A major Floridan Aquifer feature is the Cody Scarp, which runs from east of the Apalachicola River to Alachua County. It forms the boundary between the Gulf Coastal Lowlands and the Northern Highlands of Florida.

Because numerous sinkholes, sinking streams, siphons, springs, and other karst features extend along the length of the Cody Scarp, this may be the most sensitive area in Florida that the proposed route crosses. Within this Scarp, it is common for smaller individual sinkholes to merge into larger sinkholes, often shallow and irregular in shape. The large size of sinkholes on the Cody Scarp is due to the thick cover over the limestone. Recharge on the Scarp tends to form vertical conduits under large sinkholes and in association with 'swallets', openings through which a stream disappears underground, and siphons, a flooded section of a cave, that capture runoff. According to the FERC, the proposed pipeline will cross the Falmouth/Cathedral cave system near its proposed crossing of Interstate I-90 in Suwannee County (near MP 270.5 A). The proposed pipeline will be approximately 150 feet above the cave.

The Cody Scarp is characterized by sinking streams, springs, and large sinkholes within the Suwannee River Water Management District (SRWMD). With over 300 documented springs, the SRWMD has one of the highest concentrations of freshwater springs in the United States. Of the State's 33 first-magnitude springs (ones flowing at least 100 cubic feet per second, or 64 million gallons a day), 18 are within the SRWMD. According to the SRWMD except for the Suwannee River, every single river that crosses the Cody Scarp goes underground and reemerges downstream as a spring. The entire Santa Fe River at O'Leno State Park is swallowed up by a sink as it crosses the Cody Scarp. The Santa Fe River travels underground through a network of

cave passages for over three miles before re-emerging at a spring in River Rise Preserve State Park.

The proposed pipeline will use the HDD technique to cross both the Suwannee and Santa Fe River within the SRWMD. According to FERC, the proposed pipeline will cross the Cody Escarpment from approximate MP 260 in Madison County to about MP 272R in Gilchrist County. After the proposed route crosses the Suwannee River, enters Suwannee County, it passes near the western boundary of the Ichetucknee Springshed, then crosses the Santa Fe River before entering Gilchrist County. The applicant identified 3,750 known karst and potential karst features within 0.25 mile of the proposed pipeline and 24 fracture traces that intersect it in Hamilton, Madison, Suwannee, Gilchrist, Alachua, and Levy Counties. Another 4 fracture traces were identified intersecting the proposed Citrus County Line.

The proposed action also includes the construction of the Citrus County Line to connect to Duke Energy's new combined-cycle plant, near the existing Crystal River Energy Complex, in Citrus County. The HDD technique will also be used to cross the Withlacoochee River in Florida. The Withlacoochee River forms the boundary between Citrus County and Sumter County, between Citrus County and Marion County and between Citrus County and Levy County, including Lake Rousseau. The Withlacoochee River originates in central Florida's Green Swamp, east of Polk City. The proposed route will cross the Green Swamp in Lake and Polk Counties where there are numerous conservation easements and land use zoning restrictions. The Green Swamp as it has been described as the "*liquid heart of Florida*" and is an approximately 560,000-acre area that acts as the headwaters to four major rivers in Florida, including the Withlacoochee, Hillsborough, Peace, and Ocklawaha Rivers.

Conservation Easements

The proposed route will impact private conservation lands: Warner/Harrell Conservation Easement/Echo Plantation where both HDD and open cut trench methods are proposed. Open cut trench methods are proposed for the Chinquapin Farm Conservation Easement, which the SRWMD is a co-owner; Green Swamp Conservation Easements, which FLDEP is a co-owner, both the Green Swamp Land Authority Land Protection Agreements and the Southwest Florida WMD Green Swamp Conservation Easements, and Jahna Ranch Conservation Easement, co-owned by FLDEP.

Springs

Florida has over 1,000 freshwater springs, including 33 of the 75 first-magnitude springs in the United States. Nearly all of the first-magnitude springs occur in areas where the Floridan Aquifer is unconfined or thinly confined. The Florida Geological Survey identified a 32-county area in northern and northwestern Florida as the Florida Springs Protection Area (SPA). The SPA was developed to assist counties and municipalities in land use planning and resource protection practices relative to springs. In this SPA, the sole source of drinking water and the source of spring discharge is groundwater.* Except for the Hunters Creek Line, the entire Sabal Trail Project in Florida occurs within the SPA. The flow system in the upper Floridan Aquifer within a spring shed is likely to be dominated by conduits that may be large enough to be explored by divers. Springsheds that could potentially experience the highest level of effects from the proposed pipeline are Rainbow Springs, Marion County, and Gum Slough in Marion and Sumter

Counties. The proposed route crosses a large portion of the western third of Rainbow Springs' Springshed and within 1.8 miles of Rainbow Springs. It also crosses a significant portion of the Gum Slough Springshed within 1.1 miles of the spring. The FERC states the proposed action will cross 11 mapped 1st and 2nd magnitude springsheds, with the nearest approach of the pipeline facilities to a major spring of 0.7 mile near Gum Spring in Sumter County, FL.

ENVIRONMENTAL IMPACTS: The proposed action will withdraw 188.7 million gallons of water and withdrawals could range as high as 8 millions of gallons per day, or higher. The Hillabee Expansion Project will withdraw 13.7 million gallons of water from seven surface water sources. The Sabal Trail Transmission project will use 146 million gallons of water, including seven surface water sources for hydrostatic testing purposes and eleven surface water sources for HDD purposes. The FSC Project will use 29 million gallons of water for hydrostatic testing and 740,000 gallons for horizontal directional drilling (HDD) purposes.

The proposed action will impact 1,954 wetland systems comprising 1,255.1 acres of wetlands. The Sabal Trail Transmission Project will impact a total of 940.2 acres of wetland would be affected by construction of the SMP Project, including 107.6 acres in Alabama, 134.3 acres in Georgia, and 698.3 acres in Florida. The Hillabee Expansion Project will impact about 82.8 acres of wetlands and the Florida Southeast Connector Project will impact about 232.1 acres of wetlands. The proposed action will also impact 32.8 acres of conservation lands in Georgia. The proposed action will impact 145 acres of conservation easements in Florida, including 96.3 acres in Green Swamp. It will impact 51.3 acres of state forests, 127.9 acres of conservation areas and preserves.

Overland construction could increase turbidity and impact flow at nearby springs. Two springs were identified within 0.5 mile of overland construction areas in karst sensitive areas of Florida, the nearest of which is the A. Wayne Lee Spring approximately 0.2 mile down gradient from MP 411.5 in Sumter County.

According to the FERC, the primary geologic impact that could affect the proposed pipeline and aboveground facilities in karst sensitive areas is the sudden development of a sinkhole that damages the facilities and poses a safety risk. Other subsidence features could develop gradually over time, but would not pose an immediate risk to the proposed facilities. Karst features could be initiated by the physical disturbance associated with trenching, grading, or HDD activity; or by diverting or discharging project-related water into otherwise stable karst features.

EPA RECOMMENDATIONS

Purpose and Need

The EPA recommends that the FERC clarify the inconsistencies in its expressed purpose and need. Two separate, independent purpose and needs are identified. In Chapter 1 of the DEIS, the FERC narrowly defined the purpose and need to a geographic area as specified in Sabal Trail Transmission, LLC's 2013 contract with FPL. In Chapter 4, the proposed action's purpose is '*to transport price competitive natural gas from AL to FL*'. The two statements are not the same. The FERC indicates that the FPL expressed the need to satisfy its future natural gas requirements

while increasing the reliability and diversity of its natural gas infrastructure.^{xi} According to the Council on Environmental Quality (CEQ), the purpose and need provides the framework in which reasonable alternatives to the proposed action will be identified.^{xii} Consequently, the EPA recommends the purpose and need statement more closely reflect the FERC's mission, '*assist consumers in obtaining reliable, efficient and sustainable energy services at a reasonable cost through appropriate regulatory and market means*'^{xiii} and the FPL's need for future, reliable and diverse sources of natural gas supplies.

The EPA recommends that the FERC's purpose and need be consistent with NEPA. According to the CEQ, the EIS is to serve as a means of assessing environmental impacts rather than justifying decisions already made. The statement of purpose and need and the resulting alternatives impacts analysis appear to be justifying decisions made prior to implementing the NEPA process. There are three reasons for this appearance: First in this 2015 DEIS, the FERC defined a purpose and need so geographically narrow it must pick the preferred alternative, or some minor variant thereof. In November of 2014, the FERC accepted a §7(c) application where the FERC's purpose and need is the subject of an enforceable contract between the FERC's applicant and FPL, signed June 26, 2013. The FERC issued a letter order on November 16, 2013, approving the applicant's narrowly defined geographic purpose contained in its November 4, 2013, request for approval to initiate the FERC's NEPA Pre-filing Process.^{xiv} The CEQ's NEPA regulations prohibit agencies from committing resources prejudicing selection of alternatives prior to its final decision (i.e., 40 CFR 1502.2(f)). No Agency action can be taken that limits the choice of reasonable alternatives. According to the CEQ, when a lead agency becomes aware an applicant is about to take an action that would limit the choice of reasonable alternatives, the Federal agency must notify the applicant it will take strong affirmative steps to insure NEPA's objectives and procedures are fulfilled (i.e., 40 CFR Section 1506.1(b)). The CEQ's example: "*the agency might advise an applicant that if it takes such action the agency will not process its application*".^{xv} Furthermore, in its status as a cooperating agency, the EPA specifically raised this issue to the FERC and referenced 40 CFR sections 1502.2(f) and 1506.1, in an email dated August 19, 2014.

Second, the proposed 'preferred' route is highly controversial as evidenced by numerous citizen, business, and resource agency concerns filed in the FERC's administrative record since the FERC's 2013 letter order approving the applicant's NEPA Pre-Filing Process request. In response to these concerns, the applicant has communicated to the FERC that their 'preferred' route alternative is severely constrained by precedent agreements with its main client. Specifically, the applicant will suffer damages if it cannot meet its pre-committed contractual deadlines. Deadlines committed to in June of 2013 prior to initiating the FERC's NEPA pre-filing process in November, 2013. For example, in rejecting the Florida Gas Transmission Onshore Route Alternative, the applicant stated:

"The Project's proposed scheduled in-service date is May 1, 2017. The FGT Alternative's in-service date would be in August 2018. The in-service date delay is due to several factors including a complete reengineering of the Project facilities; new stakeholder and landowner outreach; initiation of new federal, state, and local consultation; additional field surveys; additional public open houses and scoping meetings; and a rework of the current resource reports and application filings. Sabal Trail has executed precedent agreements with FPL and DEF for the majority of the Project's capacity. These customer

are depending upon Sabal Trail to provide incremental natural gas transmission services beginning in 2017 in order for them to meet their increasing electric generation demands. Use of the FGT Alternative as Sabal Trail's preferred route would greatly jeopardize FPL's ability to meet its power generation needs starting in early 2017 and DEF's ability to rely upon the Sabal Trail pipeline to meet its power generation needs starting in late 2017".^{xvi}

The applicant used the same rationale to reject the FERC's *Gulf of Mexico Route Alternative (MP 0.0 to MP 384.0)*^{xvii} and alternative fuel-supply alternatives.^{xviii} The EPA's concern is the FERC's acceptance of §7(c) applications from applicants having previously entered into earlier contracts narrowly defining the purpose and need with damages clauses prior to the FERC's NEPA process initiation. The EPA believes that these pre-DEIS activities will potentially be inconsistent with the NEPA requirements and will ultimately limit the choice of reasonable alternatives.

Third, real-estate contracts were entered into and land purchased during the FERC's scoping period to locate the proposed action's infrastructure along the FERC's three-state preferred route.^{xix} Again, the EPA recommends the purpose and need statement more closely reflect the FERC's mission as stated above.

Alternatives Analysis

The EPA recommends that the FERC consider the appropriate regulatory requirements in identifying an alternative in compliance with existing environmental law, including CWA § 404(b)(1) Guidelines (the Mitigation Rule), the USACE Public Interest regulations,^{xx} and the Safe Drinking Water Act's Source Water Protection Program. The alternatives analysis is the heart of the NEPA environmental impacts analysis (i.e., 40 CFR Part 1502.14). The EPA strongly encourages the FERC to select the least environmentally damaging practicable alternative (LEDPA) pursuant to the Clean Water Act (CWA) section 404(b)(1) Guidelines (and the Mitigation Rule, 40 CFR Part 230). The Mitigation Rule requires the US Army Corps of Engineers (USACE) to consider whether the proposed project represents the LEDPA. The CWA tasks EPA with oversight of USACE's CWA 404 permit decisions.^{xxi} The USACE and EPA follow the Mitigation Rule's defined process prior to the issuance of a 404 permit.^{xxii} This Rule requires a sequential, four step consideration. The first step requires the applicant to rebut the Mitigation Rule's presumption of the existence of a LEDPA (i.e., 40 CFR 230.10(a).^{xxiii}). The EPA recommends that the FERC compare each alternative's ability to address the USACE's public interest review requirements regarding wetlands. The USACE states its policy finding that "[m]ost wetlands constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest".^{xxiv}

The EPA recommends that the FERC address and compare each alternative's ability to address the USACE's public interest review requirements regarding water supply and conservation. The USACE states its policy finding that "[w]ater is an essential resource, basic to human survival, economic growth, and the natural environment. Actions affecting water quantities are subject to Congressional policy as stated in section 101(g) of the Clean Water Act which provides that the authority of states to allocate water quantities shall not be superseded, abrogated, or otherwise impaired".^{xxv} The EPA recommends that the FERC avoid the identified sensitive areas of the Floridan Aquifer. Because part of the project's preferred route appears to be pre-decided, the

EPA recommends greater use of geotechnical and geophysical investigations for the proposed route, HDD crossings, and aboveground facilities. The Federal Source Water Protection Program is a volunteer, not regulatory program to avoid placing undue financial constraints on rural and small communities. The EPA's role is to work with state and tribal agencies, non-governmental agencies, and citizen groups to encourage partnerships and provide information for carrying out source water protection actions. The Federal Source Water Protection Program includes the Sole Source Aquifer Program and Source Water Assessments, which include defining wellhead protection areas for drinking water wells.^{xxvi} Additionally, the FSG has provided local governments with its SPA analysis to further assist local communities with protection of their major source of water supply. It identified a 32-county SPA area. The entire Sabal Trail Transmission pipeline crosses this SPA.

The EPA recommends that the FERC evaluate and compare each alternative with respect to the number and type of pipeline crossings due to the significant implications to public safety and the Floridan Aquifer's vulnerability. As part of this analysis, the associated potential impacts should also be compared. The FERC indicates there are multiple locations where the proposed action will cross, be located in close proximity to, or parallel the Florida Gas Transmission (FGT) system. The FERC also indicates there are multiple FGT crossings of the Suwannee and Santa Fe Rivers. Given the FERC's preference for pipeline collocation, it is unclear how many of the proposed pipeline's river crossings are collocated with FGT. The FERC has identified a HDD crossing for both the Suwannee and Santa Fe Rivers but has not indicated if the proposed action will be collocated with the FGT at these crossings. The FERC indicates that the proposed action will be collocated with the Dixie liquid propane line. According to Southern Natural Gas (SNG), each proposed pipeline crossing of an existing pipeline poses a risk, both during crossing construction and during operation and maintenance of both pipelines.^{xxvii} This risk is heightened by the fact that SNG's pipeline (referred to as SONAT in the DEIS) must remain in service during the proposed action's construction. Each time the applicant cuts or bores under the SNG pipeline, it increases the risk of compromising SNG's pipeline integrity. Disturbing the soil around and under SNG's pipeline during the proposed pipeline's construction creates a potential for the soil around the SNG pipeline to become de-stabilized. This can potentially lead to undue stresses on its pipeline which could result in future pipeline failure. Moreover, the creation of undue stresses on the crossed SNG pipeline segment is exacerbated when the crossing is accomplished by using the applicant's proposed, cheaper, open-cut trench method. The proposed crossings, according to SNG, complicate the cathodic-protection systems of both pipelines, increasing the difficulty to ensure both pipelines are adequately protected from corrosion. Additionally, SNG has stated in its letters to the FERC that pipeline crossings, particularly when the pipelines are running in parallel, complicate routine operation and maintenance activities such as line locating, leak surveying, and management of encroachments because the orientation of the pipelines changes from location to location.^{xxviii} Furthermore, the SNG recommended that crossings should be avoided wherever possible in order to avoid unnecessary and additional risk.

The EPA is concerned with the existence of Dixie Pipelines natural gas liquids (propane) and the SNG's pipelines in the vicinity of the proposed action, a municipal wellfield pumping ground water from the Floridan Aquifer that is not far from the Flint River. The EPA is concerned over whether the proposed action could lead to all three pipelines failing either during the proposed action's construction or operational lifetime. The EPA notes the causes of pipeline incidents fall

into several broad categories based on how the Pipeline and Hazardous Materials Safety Administration (PHMSA) collects incident data from pipeline operators. The predominant PHMSA-defined causes of pipeline failures are corrosion, material/weld failures, and excavation damage. According to the PHMSA, over 50% of the nation's pipelines were constructed in the 1950's and 1960's during the creation of the interstate pipeline network built in response to the huge demand for energy in the thriving post-World War II economy. Both SNG and Dixie Pipeline likely may have been pipeline projects constructed during that era before many of the nation's environmental protection laws were passed including FERC's NEPA responsibilities and the PHMSA's existence. Moreover, according to the PHMSA, gaps exist in its understanding of the risk associated with the nation's existing pipeline infrastructure.^{xxxix} Consequently, the EPA recommends that the FERC consider selecting a route alternative for the proposed action that minimizes the number of pipeline crossings. The proposed action's right-of-way represents a future pipeline site per the FERC's right-of-way pipeline collocation policy.

The EPA recommends that the FERC provide a more rigorous review of its No Action alternatives analysis. The CEQ requires an agency to "*rigorously explore and objectively evaluate all reasonable alternatives*" and "*to devote substantial treatment to each alternative*" (i.e., 40 C.F.R. §1502.14(a) & (b)). The FERC does not consider the possibilities that the No Action alternative could facilitate a new mode of natural gas transmission, e.g., LNG export/import, to compete with the existing natural-gas transmission, the two existing pipeline systems: Florida Gas Transmission's pipelines and the Gulfstream Pipeline. TRANSCO is upgrading its mainline in order to ship Marcellus Shale-sourced gas to the Gulf Coast where LNG facilities are upgrading their capacities to export this natural gas overseas to markets where natural gas can sell at higher prices. The FERC has recently approved five (5) Gulf Coast LNG Export terminals.^{xxx} Reportedly, four (4) facilities are under construction. And 16 more are proposed for the Gulf Coast.^{xxxi} Furthermore, in Florida off its west coast, the Pt. Dolphin LNG Import project has already secured approval from the applicable Federal agencies, including FERC, and the conversion has been vetted through the NEPA process. The FERC has not clearly made the case for the transmission of natural gas by pipeline being superior to transport by LNG vessels.

The LNG Import/Export mode of natural gas transmission can also meet FPL's request for reliable, cost competitive natural gas. Unlike the proposed action, the LNG alternative also meets FPL's request for a natural gas transmission system geographically separate from the existing natural gas transmission lines currently serving Florida. Because the proposed action proposes to collocate with existing natural-gas transmission lines, it cannot be considered geographically separate.

In the DEIS No Action analysis, the FERC also appears to assume the only source of natural gas available to FPL is a connection point to TRANSCO's mainline in Alabama. The LNG alternative gives FPL access to foreign natural gas supplies. These supplies can compete with US mainland-sourced natural gas supplies. Contrary to the FERC's conclusion, the No Action alternative does not guarantee FPL cannot obtain reliable and diverse natural gas supplies. Moreover, the No Action alternative may realize less impacts to CWA-protected waters, wetlands-protection conservation easements, the proposed SDWA sole-source aquifer designate – the Floridan Aquifer, the FGS's SPA, public's source waters, and environmental justice (EJ)

communities. Furthermore, the No Action alternative may realize both the FERC's mission and the FPL's need for future, reliable and diverse sources of natural gas supplies.

The EPA recommends that the FERC provide its economic analysis used to support its dismissal of this alternative as '*economically impractical*'. The CEQ regulations at 40 C.F.R. §1502.24 require agencies, "*to identify any methodologies used and ... make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement*" (EIS). The FERC states in the DEIS: "*...we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the project economically impractical*". Both the FERC's terms *cost* and *economically impracticable* suggest a quantitative analysis determined the cost and evaluated the economic practicability. The EPA recommends that the FERC provide its quantitative analysis to support its conclusion: "*the cost of constructing two LNG terminals, operating LNG ship carriers, and constructing the necessary natural gas pipeline, would make this system economically impractical*".

The EPA recommends that the FERC provide a more rigorous review of its LNG Import alternative consistent with 40 C.F.R. §§1502.14(a) & (b) as discussed above in the '*No Action Alternative*' comments. The EPA recommends that the FERC explain this alternative's economic impracticability in context of its recent LNG export terminal approvals and their construction, and the information provided to the FERC by Port Dolphin Energy LLC. According to the FERC, four of the five Gulf Coast LNG Export terminals it has approved are currently under construction and it anticipates the approval of 16 more for the Gulf Coast.^{xxxii}

In Port Dolphin Energy LLC's Request (October 17, 2014) to Extend FERC Certificate and Project In-Service Date, it stated that the cost of constructing Port Dolphin would be less than a major new pipeline system from the northern part of Florida to the central and southern parts of the State. Port Dolphin Energy also indicated it can add significant storage facility/capacity, which the proposed action does not and which the State lacks. It stated it can provide *invaluable supply flexibility*, a benefit to Florida consumers. It also stated it can meet the State of Florida's increasing need for additional gas supply by providing natural gas from the same mainland sources that the proposed action proposes to access. Port Dolphin Energy indicates an added benefit to its LNG facility is its ability to provide FPL access to international natural gas resources. It offers a new source of gas transportation to compete with existing pipelines. Lastly, this facility has already been vetted through a joint agency (the FERC and United States Maritime Administration) NEPA process and received these agencies' approval. Consequently, the FERC should clearly explain why it considers this alternative to be economically impractical. According to the CEQ, NEPA was enacted to promote efforts to prevent or eliminate damage to the human environment.^{xxxiii} (i.e., 42 U.S.C. §4321). This LNG Import Alternative would prevent the environmental impacts associated with the proposed action, particularly the karst sensitive areas of the Floridan Aquifer System in southwest Georgia and northcentral Florida.

The EPA recommends that the FERC appropriately characterize environmental impacts to lands, forests, and wetlands. The FERC currently uses a potentially meaningless evaluation of acres impacts for comparing the alternatives. The FERC states it includes acreages impacts in its factors determinative of whether an alternative is preferable to the proposed action. However, the FERC does not differentiate the type of land, forests, and wetlands acres being impacted. For example, the FERC describes the FGT Onshore Route Alternative as requiring an additional

1,024.3 acres of land for construction and affecting 386.7 more acres of forest and 521.9 more acres of wetland than the proposed route. The FERC does differentiate real estate or timber lands from lands and wetlands that may have special protected designations or recreational value. The applicant identified the FGT alternative to cross the Robert Brent Wildlife Management Area (WMA) in Liberty County. However, this WMA no longer exists because the land owner, a real estate/land development company, St. Joe Corp., withdrew its land out of the State's WMA system for financial reasons. Similarly, the applicant identified the FGT alternative as crossing the San Pedro Bay Area, FL, containing numerous wetlands, extreme saturated soil conditions, and limited upland areas. This area coincides with the former 17,872-acre San Pedro Bay WMA, which no longer exists because Foley Timber and Land Company withdrew its lands from the State's WMA system. The EPA strongly recommends that the FERC require the development of a comparative metric to make this a meaningful metric in its alternatives analysis.

The EPA recommends that the FERC appropriately characterize environmental impacts to EJ communities. The FERC has not clearly identified its EJ metrics. Continuing with the FGT alternative as an example, the FERC indicates this alternative crosses 65.0 miles more of areas classified as EJ communities. The FERC does not define its term *classified as environmental justice communities* in demographic terms to sufficiently compare EJ impacts. Moreover, '*miles of EJ communities*' is not a particularly informative metric for EJ impacts. Direct and indirect impacts to EJ communities' drinking water supplies, residences, neighborhoods, infrastructure, etc., is a meaningful and informative metric. The FERC states in the DEIS that it includes *miles of EJ communities* in its factors determinative of whether an alternative is preferable to the proposed action. The EPA strongly recommends that the FERC develop a comparative metric to make this a meaningful metric in its alternatives analysis. The affected EJ community in Dougherty County has clearly identified for the FERC the potential impacts to them associated by the proposed project. However, the FERC has not clearly defined environmental justice impacts for the alternatives evaluated, including the rest of the proposed action. The FERC should provide a copy of its EJ-analysis results to support its alternatives conclusions. Executive Order 12898 directs all Federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law.^{xxxiv} The order also directs each agency to develop a strategy for implementing environmental justice. The order is intended to promote nondiscrimination in Federal programs that affect human health and the environment and provide minority and low-income communities' access to public information and public participation. In its EJ analysis, the FERC should determine the extent of collocation impacts on identified EJ populations. All of the FERC's pipeline projects are designed to be collocated with existing pipelines and utility rights-of-way to the greatest extent practical. However, the FERC does not identify the extent EJ populations are burdened with multiple pipelines, increasing their potential exposure risk. There may be cases where the collocation of natural gas pipelines with existing rights-of-way may maximize impacts to both the EJ populations and sensitive environments.

The EPA recommends that the FERC appropriately characterize environmental impacts to karst features. Continuing with the FGT alternative as an example, the FERC indicates this alternative crosses 57.9 miles more of karst features. The FERC states it includes '*miles of karst features*' crossings in its factors determinative of whether an alternative is preferable to the proposed

action. ‘*Karst features*’ as used in the DEIS appears to be a meaningless metric. There are insignificance and significant karst features, and protected karst features, e.g., FGS’ SPA. The EPA recommends that the FERC develop a comparative metric to make this a meaningful metric in its alternatives analysis. For clarification purposes, the EPA has repeatedly expressed concern for impacts to the Floridan Aquifer, a source water for community and private water supplies and surface-water bodies, particularly in drought periods, contained within vulnerable karst terrain. The EPA has not expressed concern for the number of karst features impacted. The FERC’s *miles of karst features* does not capture the potential magnitude and intensity of impacts to the Floridan Aquifer.

The EPA recommends that the FERC appropriately characterize environmental impacts to special interest or recreational areas and develop a meaningful metric that can be applied to alternatives as part of the FERC comparative alternatives analysis. Continuing with the FGT alternative as an example, the FERC indicates this alternative crosses *115.4 miles more of special interest or recreational areas*. The FERC states it includes miles of *special interest or recreational areas* crossings in its factors determinative of whether an alternative is preferable to the proposed action. The EPA recommends that the FERC develop a comparative metric to make this a meaningful metric in its alternatives analysis.

Environmental Impacts

The EPA recommends that the FERC have a karst risk assessment be prepared by an independent party with no financial interest in its outcome for the proposed route located within the Dougherty Plain, Cody Escarpment, and the Florida Geological Survey (FGS)-identified Florida Springs Protection Areas (SPAs).^{xxxv} As acknowledged by the FERC, the Dougherty Plain and the Cody Scarp are the most sensitive areas in Florida and Georgia the proposed route traverses. The EPA further recommends this karst risk assessment be subjected to appropriate peer review by the relevant Federal and state geological surveys, and include the Suwannee Water Management District. The EPA is concerned that the FERC’s risk assessment is insufficiently rigorous given the significance of the Floridan Aquifer and the FGS-identified SPAs. This significance is evidenced by the EPA’s receipt of an emergency petition to designate the entire Floridan Aquifer as a Sole Source Aquifer pursuant to the Federal Safe Drinking Water Act.^{xxxvi} The FGS-identified SPAs define areas where groundwater is the sole source of drinking water and the source of spring discharge for the area.

The FERC’s sinkhole risk assessment is based upon *known* historical occurrence of sinkholes and the results of limited geotechnical and geophysical assessments. It assesses the relative risk for sinkhole development. The FERC defined a *low risk* setting as where historical occurrences may have been reported or documented, but it is unlikely for a sinkhole to develop at the site of the proposed action. The FERC defined a *medium risk* setting based on whether historical occurrences of sinkholes are well documented in the area and conditions favorable to sinkhole development are believed to be present. And the FERC defined a *high risk* setting where historical occurrences are common and frequent and conditions favorable to development are present and well documented. The FERC’s risk assessment as presented in the DEIS assumes some entity has investigated, researched, and documented all karst features within the study area. The EPA does not believe that this assumption is invalid as explained below. Moreover, the

FERC does not define *relative risk*. It does not inform how relative risk is meaningful to an environmental impacts analysis to the Floridan Aquifer or any of the rivers impacted by the proposed action.

The EPA is concerned over the scientific basis for the FERC's sinkhole risk assessment. The FERC has not clearly demonstrated how it, or its applicant, can predict the unlikelihood for sinkhole development in an area recognized as vulnerable to sinkhole development. Because of its geomorphology and high precipitation, sinkhole activity in Florida is pervasive and nearly random.^{xxxvii} The FERC may elect to defer to its applicant's experience and best professional judgement. However, this experience and judgement appears inconsistent with a third party that has independent expertise. The Florida Division of Emergency Management ranked Hamilton, Suwannee, and Gilchrist counties with high sinkhole hazard rankings.^{xxxviii} And the FGS has determined there are many unresolved scientific questions regarding sinkholes, such as where do sinkholes occur? How can they be predicted? What are their triggers? Is there a correlation between hydrologic conditions and sinkhole occurrences? What technologies or tools are available to begin to address these concerns?^{xxxix} Moreover, sinkholes may occur catastrophically and instantaneously, or on a sustained basis as in imperceptibly overnight, over weeks, a season, over years, or over dozens of years. Furthermore, the FERC acknowledges in the DEIS that karst features could be initiated by the physical disturbance associated with trenching, grading, or HDD activity; or by diverting or discharging project-related water into otherwise stable karst features. According to FSG, instances of subsurface solution activity cannot be quantified with some threshold of depth, distance, and magnitude in order to qualify as a possible source of distress at the surface.^{xl} If FSG cannot answer these questions or quantify subsurface solution activity, the EPA questions the FERC's and applicant's ability to do a sinkhole risk assessment to inform the proposed route alternatives and identify environmental impacts and mitigation.

According to the FERC, karst features within 0.25 mile of the Sabal Trail Project were identified using aerial photographs, topographic maps, potentiometric surface and water table maps, light detecting and ranging data (LiDAR), field surveys, various resources depicting mapped cave systems, and publicly available databases from state and local agencies. The FERC has not demonstrated the appropriateness of limiting the karst assessment to within 0.25 miles of the proposed action. The aerial photography was limited to the major fracture trace analysis. The tree cover and other land uses depicted in the aerial photography may limit the value of this aerial photography. The FERC does not specify in the DEIS where and why the light detecting and ranging data (LiDAR) was done.

Regarding publicly available databases from state and local agencies, the FERC acknowledges that the State of Georgia has not developed a closed depressional feature data base using topographic elevation data to identify potential sinkhole features, which Florida has done. Spring and springshed location databases do not currently exist for Georgia. Data pertaining to the location and magnitude of springs and the extent of their springsheds is minimal. Georgia has not mapped the locations of existing sinkholes in the State. The FERC has made no claim to field work that maps all existing sinkholes along the pipeline route within either State. Instead, the FERC used 'Topo map's to identify karst features suggestive of karst activity in the vicinity of a predetermined route. In Georgia, the available topographic maps may be dated 1956 and 1973,

and photographically revised in 1988. This is very old data and cannot be lied upon to make a proper assessment.

For Florida, the FERC supplements these topographic maps with FGS's data of known closed topographic depressions, sinkholes, and springs. As the FERC is aware, the existence of known closed topographic depressions, sinkholes, and springs does not preclude the existence of the unknown that may have a nexus with the documented features or the proposed route. Moreover, the FGS has a disclaimer regarding the use of its location data of known and mapped karst features. The FGS states: "*Geographic Information Systems (GIS) data and maps produced by the Florida Geological Survey (FGS)... are provided solely as a general reference for state geologic features, are not warranted for any other use or purpose, and are not intended to replace site-specific or use-specific investigations*".^{xi} The applicant's investigations are triggered by the known features on dated maps and public data provided with general reference limitations. The applicant has not indicated any field investigations to determine any previously unknown but potentially significant karst features along the entirety of the proposed route. The applicant is using FGS's information to develop a sinkhole risk assessment to target site-specific investigations.

The EPA recommends that the FERC's pipeline siting be informed by the appropriate information. The number of identified karst features requiring further investigation is remarkably low considering most of the proposed action crosses the Floridan Aquifer and its vulnerable karst areas. For example, the applicant identified 235 potential sinkholes and 17 fracture traces over a 126 mile segment within the proposed route corridor through the Dougherty Plain in southwest Georgia. Only two areas were subject to geophysical and geotechnical investigation. One area is a closed circular depression identified just west of the proposed route (Milepost 148.7). Because the geophysical/geotechnical results were still pending at the time of the DEIS issuance, its risk ranking is pending. The other is where the proposed route parallels the Albany Municipal Well field where sinkholes have been documented (Milepost 159.8 - 161.3).

The applicant-defined the *karst sensitive areas* in Florida as a 32.2 mile segment (Mile Posts 244.7 – 276.9) of the proposed Sabal Trail Transmission route. The EPA believes that a larger segment pipeline may actually cross Florida's most karst sensitive areas. Within the corridor of this 32.2 mile segment, the applicant identified approximately 268 closed depressional features (potential sinkholes), presumably by topographic maps and FGS's GIS data of known features/incidences. Only one of these 268 features were subject to geophysical and geotechnical investigation. This feature is a closed circular depression identified west of the proposed alignment (Milepost 260.5) in an existing power line easement in Hamilton County. The geophysical investigation identified two anomalies and the geotechnical investigation results were not available for the DEIS. Of the 3,750 karst and potential karst features, including 29 fracture traces, over the entire proposed Sabal Trail Transmission pipeline within Florida, only 9 areas were subject to geophysical and geotechnical investigation. Of the 650 karst and potential karst features identified over the 126-mile Florida Southeast Connector proposed route (MP 0 – 126.3), none were subject to geophysical and geotechnical investigation. Moreover, none of these features appear to have been evaluated by the applicant's sink-hole risk assessment.

A questionable sinkhole risk assessment was used to identify karst features needing further investigation to inform pipeline design and construction to minimize impacts to the proposed action. It was not used to identify and avoid and/or minimize environmental impacts. In Gilchrist County (Milepost 335.3) several small circular depressions, approximately 10- 15 ft. in diameter, were identified in the vicinity of the proposed alignment. The geophysical investigation identified three anomalies. The geotechnical investigation found zones of soft limestone material where loss of drilling fluid was observed at or near the limestone interface. This was noted as a common occurrence in North Florida: *"The relative density of the upper sands generally increased with depth and at least 10-15 feet of clay materials were encountered above the limestone formation which, was stated, **reduces the potential for sinkhole development**"*. This finding is in stark contrast to the DEIS Appendix H's statement: *"The large sizes of sinkholes in the Cody Scarp are a result of thick cover over the limestone"*. Moreover, Gilchrist County was ranked by the Florida Division of Emergency Management with a high sinkhole hazard ranking. Sinkhole mitigation was determined by the FERC to be unnecessary and the pipeline route was not changed despite contradictory information.

The EPA recommends that the FERC discuss the potential environmental impacts associated with remediation of sinkhole risks associated with the proposed action's construction. This should be done after a closer scrutiny of the proposed route for karst features that does not rely on outdated maps and State databases. The FERC should identify the frequency and intensity of the sinkhole risk remediation needed for the pipeline's integrity and select a route that avoids and or minimizes needed sinkhole remediation activities.

The proposed route parallels the Albany Municipal Well field where sinkholes have been documented. According to the applicant, *"the overall area is believed to have a medium or moderate [sinkhole] risk based on the adjacent land use [the well field pumping]. In [the] unlikely event, sinkhole occurs on pipeline route, the area should be stabilized by backfilling. ... The City of Albany should be solicited regarding proposed remediation methods due to the potential for negatively impacting the production of the well-field from such methods as grouting"*. Consequently, the sinkhole risk to the pipeline is presented in the DEIS as being acceptable. The population dependent upon the affect water supply bears the impact risk and the expense of remediation should the *unlikely* sinkhole occur and not the FERC's applicant.

In Levy County, a line of several small circular depressions, generally 3 to 4 feet in diameter and 2 to 3 feet in depth, were identified in vicinity of pipeline (Milepost 363.8). The geophysical investigation identified three anomalies. The geotechnical investigation observed losses of drilling fluid at limestone interface in borings at central and northern anomalous areas. This area was ranked as a *high sinkhole* risk, but due to the depth, type and relatively small diameter of sinkholes did not pose a threat to pipeline, *if remediated*. *"Depressions that have occurred or that may occur should be backfilled with compacted sand. Compaction grouting could be conducted in area of pipeline to further reduce sinkhole potential"*. In Lake County, a circular depression was identified on the proposed alignment along with ponds located north and south. The geophysical investigation identified an anomaly. The geotechnical investigation observed 75 feet of very soft or very loose soil conditions including weight of rod were encountered. Significant losses of drilling fluid were noted throughout completion of the boring including a complete loss of drilling fluids at a depth of approximately 102 feet. The open trenching

construction was not expected to trigger sinkhole development. However, it was recommended that storm water and dewatering discharge be diverted from the area during construction activities and hydraulic testing not be performed within this portion of the pipeline. If potential changes in hydraulic stresses are anticipated, the area may be stabilized by compaction grouting. The EPA believes that this a reactive form of planning and does not fully address the need to avoid and minimize potential impacts in environmentally sensitive areas. A pipeline rupture from a sudden sinkhole event in this areas will disrupt the 'reliable' flow of natural gas potentially result in a catastrophic incident before remediation activities can be initiated.

The EPA recommends that geotechnical and geophysical investigations be used to inform the siting alternatives decisions for the pipeline, HDD crossings of waterbodies, the compressor and metering/regulating station locations, etc. Instead, these investigations were conducted to determine potential impacts to the proposed action at preselected sites. For example, the preferred Albany Compressor Station site, west of Newton Road, was eliminated from consideration and it was relocated to site J because the preliminary geotechnical study noted solution activity indicators and the potential for sinkhole development.^{xlii} However site J is still in an active karst area. Moreover, geophysical/geotechnical investigations were not used to select site J. For all of the compressor stations and metering/regulating facilities, the conceptual plan with the location of the facility footprint was first identified and then given to consultants to perform a geotechnical/geophysical study. However, as noted in a karst assessment for a Superfund remedial site investigation: *"A geotechnical karst investigation (i.e. identification of cavities, fractures and collapse zones) is undoubtedly one of the most difficult subsurface investigations: a real needle in the haystack problem"*.^{xliii} Given the potential impacts to the Floridan Aquifer and communities and aquatic ecosystems dependent upon it, the geophysical/geotechnical work acquired is preliminary [at best] and did not inform the siting of the proposed action.

The EPA recommends that the FERC address compressor station vibration induced impacts to zones of fractures in the underlying limestone. The continuous vibration effects could be expected to aggravate ongoing chemical and physical weathering of all underlying karst conduits. Sinkhole formation can be triggered by construction activities such as ground vibrations from heavy equipment.^{xliv} The proposed compressor stations are expected to vibrate continuously for the project life. Sinkholes can occur in the beds of streams, sometimes taking all of the stream's flow, creating a disappearing stream.^{xlv} As the FERC has noted, the Flint River, where a HDD crossing is proposed, most of the springs reported to discharge to the Flint River are within the river bed and are unmapped and may be impacted by the proposed HDD crossing.

The EPA recommends that the FERC address the potential environmental impacts associated with HDD-induced karst collapse under major rivers. According to the FERC, *"[z]ones of fracture concentration in soluble rocks such as limestone can lead to enhanced dissolution due to accelerated chemical and physical weathering. In the case of rocks prone to karstification, the development of karst conduits begins when fracture apertures reach about 1 cm"*. The FERC proposes conduits to be drilled under major rivers to install a 36-inch natural gas pipeline/conduit. According to the FERC, five of the applicant's proposed HDDs will encounter carbonate bedrock. The FERC has determined the HDD drilling process is feasible even if voids 15 feet or less are encountered. According to the FERC, if larger voids are encountered, which

will prevent the successful completion of the HDD, the applicant will modify its drill path slightly in an effort to avoid it. According to the FERC, the HDD process uses drilling fluids to facilitate many of the HDD operations. Drilling fluid is a slurry composed of water and bentonite clay, which is intended to maintain the hole's stability, lubricate the drilling head, remove cuttings and reduce soil friction. The FERC has not explained how this works for voids 15 feet or less, or larger, or what the associated impacts are to the bedrock or water quality. Moreover, the FERC proposes that when a loss of drilling mud circulation occurs, **where practical**, a member of the field crew will visually inspect the ground surface near the position of the cutting head. However, the cutting head may be 20 plus feet below the ground. The FERC indicates surface waters, wells, and mapped springs within 2,000 feet of the HDD site will also be visually inspected. The FERC has not indicated how fast the groundwater may move to the surface waters being monitored. It is feasible for a significant amount of drilling fluid to be lost before it shows up, days, weeks, or months later after the HDD installation has been completed. The DEIS does not fully address the Floridan Aquifer's characteristics and the complexity of its groundwater flow.

The DEIS also states FGT's 36-inch natural gas pipeline has been successfully installed via HDD in karst areas in Florida, including FGT's prior crossing of the Suwannee River at the same location as proposed by its applicant. The EPA fully comprehends this issue and found documented HDD-induced sinkhole formation associated with the construction of FGT's 36-inch natural gas pipeline within the Land O' Lakes Karst Plain in Florida.^{xvi} Here, three sinkholes ranging from approximately 5 to 25 feet in diameter and several feet deep developed along the drill path during HDD-related activities. The borehole was completed using HDD methods to depths up to 100 feet. The FERC notes this study in the DEIS, as "land subsidence" in the DEIS section discussing its karst-mitigation: backfilling it with sand.

The EPA remains concerned the installation of the proposed action by HDD could induce such "land subsidence" under a major river, such as the Flint, the Withlacoochee, the Suwannee, and/or other rivers flowing within the Dougherty Plain and the Cody Escarpment. Such "land subsidence" could realize reduced river flow in these rivers or a redirection of the river into large subsurface conduits or a cavern system, which is characteristic of the Floridan Aquifer. The EPA's environmental concern is heightened over the proposed collocation of the proposed 36-inch, high-pressured gas pipeline with the existing FGT 36-inch, high-pressured gas pipeline under the Suwannee River because the Suwannee River bed is littered with named and unnamed springs. The artesian springs along the Lower Suwannee River Basin are responsible for supplying much of the flow to the Suwannee River and its tributaries. They provide most of the fresh water to the Santa Fe, Alapaha, and Withlacoochee Rivers which drain toward the Suwannee River.

The EPA recognizes FGT's existing pipeline will remain in service during the proposed HDD operations. The proposed HDD could disturb the lithology around, and under, the FGT pipeline creating the possibility of destabilizing FGT's pipeline support, possibly causing undue stresses on its pipeline, potentially resulting in future pipeline failure. A failure of FGT's pipeline could realize a crater under the Suwannee River leading to the potential reduction in river flow or a redirection of the river into large subsurface conduits or a cavern system. Many of the Lower Suwannee River basin springs have extensive conduit systems. These cave systems concentrate much of the groundwater flow and allow it to discharge directly along the river or at springs

close to the river. These cave systems have complex flow dynamics and routing during high and low flow conditions. Additionally, the Suwannee River is also known for its frequent flooding episodes. It is unclear what impacts the flooding episodes will have on both the proposed action and the FGT's pipeline.

The EPA recommends that the FERC discuss and fully examine the potential impacts associated with pipeline-induced craters in the vicinity of HDD sites, unmapped springs in a river bed, particularly the potential for diverting surface water underground into a disappearing stream. The FERC has not addressed the potential for a pipeline blast to occur in the pipeline segment installed under a river within the Floridan Aquifer's karst during the project's life. For example, Sabal Trail Transmission's affiliate, Spectra Energy's natural-gas pipeline buried beneath the Arkansas River exploded on May 31, 2015.^{xvii} It may have been the owner of the tugboat damaged by the rupture that first detected the rupture, then informed Spectra. Specifically, the EPA is concerned over the potential rupture of the proposed 36-inch, high-pressured, natural-gas pipeline in active use, under a surface waterbody within the karst system of the Floridan Aquifer. Pipeline ruptures create craters. A 51 by 113-foot crater was created by the force of escaping gas from a 30-inch diameter El Paso Natural Gas pipeline rupture in August, 2000.^{xviii} A 30 by 30 by 120-foot crater was created by a 36-inch gas pipeline failure near Crystal Falls, Michigan, in March of 2001.^{xix} A large crater was created by the release 64-million cubic feet of natural gas associated with the failure of a 24-inch pipeline in Orange County, Indiana, in October of 2003.ⁱ A crater was created by a gas pipeline rupture in Salem, Michigan, in October of 2007.ⁱⁱ A 50 by 33 by 7-foot crater was created by a 24-inch pipe rupture in Cooper County, Missouri, in August of 2008.ⁱⁱⁱ A 72 by 26-foot was created by a 30-inch pipeline rupture in San Bruno, California, in September of 2010.ⁱⁱⁱⁱ A 'moon-like' crater resulted from a natural gas pipeline rupture in a rural area in western Missouri, in November of 2013.^{lv} The creation of craters in a sensitive, vulnerable aquifer such as the Floridan Aquifer are a problem to be avoided. FERC provides no assurances with its route selection or karst mitigation that crater creation will be avoided. The EPA requests that the FERC consider these events and that they need to be avoided as they cannot be mitigated.

The EPA recommends that the FERC address the potential impacts associated with erosion and incising of river beds the proposed action crosses by either pipeline construction method. According to the FERC, the proposed pipeline will be constructed with conventional cut and cover techniques for most of its length. This technique entails the excavation of a trench where pipe is bedded and backfilled with material excavated from the trench. Five rivers, Walter F. George, and Shingle Creek will be crossed using the HDD technique. Scouring, or erosion that occurs along the beds of flooded rivers associated with the increased volume and rate of flood waters can remove dozens of feet from a river bottom by picking up sediment and carrying it downstream. Deepening river beds can expose pipelines buried as deep as 20 or 30 feet below the river bottom to debris that could cause ruptures. The most recent pipeline rupture occurred in Iowa on an Enterprise Products Partners pipeline buried 20 feet beneath the 'normal' Missouri River bed. The company said its ruptured pipeline leaked as much as 3,300 barrels of natural gasoline, a gasoline additive, into the river and that while scouring weakened the pipeline, the exact cause of the rupture was unknown.^{iv} Furthermore, the waterbodies, like the Flint River, are known to incise into their limestone river beds.

The EPA recommends that the FERC discuss and examine the need for dewatering of the pipeline trench where ground water table may be at the surface or after significant precipitation events. Subsiding flood waters may have contributed to some sinkhole formation in the Albany, Georgia, area associated with the 1994 Flint River flooding.^{lvi} Dewatering a trench may realize a similar effect. Moreover, the FERC should also discuss what is done with the water taken from the trench to facilitate its construction and pipeline placement.

The EPA recommends that the FERC identify the number of pipeline crossings associated with the preferred route and discuss associated environmental impacts. According to Southern Natural Gas,^{lvii} each proposed Sabal Trail Transmission pipeline crossing of its existing pipeline poses a risk during construction and risks during operation and maintenance of both pipelines. Moreover, SNG's pipeline must remain in service during SMP's construction. Each time Sabal Trail bores or cuts under SNG's pipeline, the risk is increased for compromising the integrity of the existing and operational SNG pipeline. According to SNG, disturbing the soil around, and under, its pipeline during construction of each crossing creates the additional possibility that the soil around the SNG pipeline may become de-stabilized, possibly causing undue stresses on its pipeline, potentially resulting in future pipeline failure. Additionally, the possibility of creating undue stress on the crossed pipeline segment is exacerbated when the crossing is accomplished by using Sabal Trail's proposed, less expensive, open-cut trench method. Furthermore, SNG stated crossings complicate the cathodic-protection systems of both pipelines, making it more difficult to ensure that both pipelines are adequately protected from external corrosion. Pipeline crossings, particularly when the pipelines are running in parallel, complicate routine operation and maintenance activities such as line locating, leak surveying, and management of encroachments because the orientation of the pipelines changes from location to location, making it more difficult to manage those activities. SNG recommended to the FERC that crossings should be avoided where possible in order not to create unnecessary additional risk.

The EPA recommends that the FERC examine the potential for the proposed pipeline trench, during construction and the project life, may act as a water impoundment. This situation is where large volumes of water associated with a storm or flood event are collected until it can dissipate. Sinkhole formation can also be triggered by construction activities such as water impoundment.^{lviii} Furthermore, it is unclear how much of the proposed action lies within a flood plain where flooding becomes a trigger for sinkhole formation. Because water impoundments are associated with the acceleration or triggering of sinkholes, particularly where they are underlain by karst conduits or shafts, the EPA recommends that the FERC consider the potential impacts of the pipeline trench as a water impoundment feature in a karst environment. The Floridan Aquifer is chiefly limestone with cavities and solution channels thought to be comparable in size and extent to those in Mammoth Cave, Kentucky.^{lix}

The DEIS states that significant amounts of water will be brought to the area associated with hydrostatic testing on the pipeline during construction. Additionally, hydrostatic testing can also be done as part of routine pipeline maintenance as required by PHMSA. During the testing phase, the pipeline acts as a linear water impoundment feature for the length of the line being tested. Water impoundments are associated with sinkhole formations. The DEIS environmental impacts discussion nor its proposed karst mitigation address this potential for sinkhole formation during construction and the pipeline's lifetime operations.

The EPA requests that the FERC provide additional information on withdrawals and discharges for the proposed action. The EPA recommended in its scoping letter that the FERC explain how the water withdrawals will be evaluated to ensure consistency with EPA-approved State Water Quality Standards (WQS). The FERC should consider the protection and maintenance of designated uses and compliance with narrative and numeric criteria and Clean Water Act anti-degradation requirements.

The EPA recommends that the FERC address any potential for the proposed action to permanently affect water flow of the affected waterbodies, including any induced sinkholes affecting surface water flow. The DEIS indicates that the Hillabee Expansion project will withdraw 13.7 million gallons of water, identifying seven surface water sources. The Sabal Trail Transmission project will use 146 million gallons of water, including seven surface water sources for hydrostatic testing purposes and eleven surface water sources for HDD purposes. The FSC Project will use 29 million gallons of water for hydrostatic testing and 740,000 gallons for HDD purposes. The DEIS information on specific sources, volumes, discharge rates, and discharge locations is very limited. It indicates the withdrawals could range as high as 8 millions of gallons per day, or higher for the locations specified, including the FSC Project. These rates are not insignificant and could impact flow levels, which can impact water quality standards (WQS) and National Pollution Discharge Elimination System (NPDES) permits. Both WQS and NPDES permit limits are based on an expected instream flow. These rates could be significant for smaller water bodies, or during drought periods where they could represent a significant portion of stream flow, and significant hydrologic alteration. In particular, the EPA requests information on the types of data and modeling to be used to evaluate potential impacts from hydrologic alteration on recreation, aquatic life, and other designated uses. The FERC should provide information on the withdrawal rates, where these volumes are to be withdrawn, the timing of these withdrawals, where they will be discharged, whether the water will be withdrawn from one water/springshed and then discharged into another.

The DEIS states that some volumes of water will be transported to subsequent sections of the projects for testing so as to avoid some withdrawals. The FERC does indicate whether withdrawals will be returned to the same water or springshed. Mile post information may be provided to indicate water withdrawal and discharge sites, but no information is given whether these sites are within the same water/springshed. Additionally, the EPA recommended in its scoping letter that the FERC address whether and how any downstream users (e.g., NPDES permit holders, any authorities withdrawing for water supply, etc.) will be notified of the temporary withdrawal amounts and timing and whether these withdrawals could affect their operations.

The EPA recommends that the FERC clarify whether the ROW at all wetland crossings remains 75 feet, and if it does not, where the ROW would be greater, and by how much. For example in Appendix D, the DEIS states, "*Transco proposes to modify the requirement to limit the width of the construction right-of-way in wetlands to 75 feet. Transco would utilize a construction right-of-way greater than 75 feet in certain wetlands due to site specific conditions. Table 3.4.1-2 identifies the locations where Transco would utilize a construction right-of-way greater than 75 feet in wetlands, and provides site specific justification for each proposed location*". However, the footnotes for Table 3.4.1-2 state: "*The right-of-way width at all wetland crossings is 75 feet*".

The EPA strongly recommends that the FERC restrict wetland impacts to the 75-foot ROW and for wetlands that have *moderate* to *optimal* functionally, further avoidance and minimization measures be incorporated in order to meet the CWA §404 (b)(1) Guidelines. The EPA recommends that all forested areas impacted during construction, not within the operational ROW of the project, be replanted with similar trees (non-invasive species) to those impacted.

The EPA requests that the FERC provide the wetland mitigation plans for all three proposed pipeline projects which have not been included with this DEIS. Consequently, the wetlands impacts cannot be fully estimated or commented upon. The EPA is interested in the complete data sheets for each assessment area: including, at a minimum, for each wetland assessed the functional scores used to derive the overall functional score (i.e., the six used for the (wetland rapid assessment procedure (WRAP) or the three used for the universal mitigation assessment methodology (UMAM)). The DEIS did not include the information on the post-project WRAP or UMAM score for each assessment area.

The EPA recommends that the standard 5 years be incorporated into all post-construction monitoring for upland and wetland impacts. The FERC states that the post-construction monitoring will be for a minimum of two years. The EPA does not believe that this monitoring period is reasonable. Additionally, the FERC also states that it reviewed the applicant's specific plans to prevent the introduction or spread of noxious or invasive species and finds them acceptable. The EPA recommends that the FERC incorporate all wetland monitoring reports and invasive species plans, etc. that will be used for the project in a supplemental NEPA document or the FEIS and provide it for review and comment.

The EPA recommends that the FERC route the pipeline to avoid moderate to high risk areas, consistent with the above comment regarding developing a peer-reviewed risk assessment. The Karst Mitigation Plan (Appendix F) states, "*Avoidance was used as the primary mitigation measure during the planning and selection of the proposed alignment*". This statement is not supported by the current location of the preferred route in southern Georgia and northern Florida. In one area all of the karst sensitive areas the proposed action will traverse in Georgia and Florida, the applicant rated as a high sinkhole risk (Milepost 363.8) in Levy County, FL. Furthermore, the proposed route has not been rerouted to avoid this high sinkhole risk area. The DEIS concluded while the risk of sinkhole formation is high, the depth, type and relatively small diameter of sinkholes do not pose a threat to the pipeline (**if remediated**). The proposed action is not proposed to be rerouted to avoid an applicant-rated "moderate" sinkhole risk in the vicinity of a rural, municipal well field.

The EPA recommends that the FERC work with the appropriate state agencies to develop appropriate water quality monitoring protocols for the HDD actions. The proposed monitoring program proposed for mapped springs involves the establishment of a baseline turbidity level in springs that are 2,000 feet down gradient from the HDD activities proposed for the project. Prior to the start of HDD activity, a baseline turbidity level will be established at the springs to be monitored by collecting samples at six hour intervals over a 24 hour period. This monitoring program will allow Sabal Trail to determine if drilling mud and/or sediments from construction activities have entered the spring system. The EPA has environmental concerns that these identified springs may not be the actual ones affected by the HDD project. The structure of karst

systems is complex and highly heterogeneous. Groundwater movement can be slower and diffuse if overlying sediments cover the karst system or fill conduits or can be fast and concentrated in areas that lack overlying sediments or empty conduits. It is possible for lost drilling mud to show up in unexpected areas.

The EPA recommends that the FERC select an alternative that avoids karst areas that may collapse. The EPA requests that the FERC reconsider the proposed action siting in the vicinity the SNG and Dixie pipelines and the Albany Municipal well field. The FERC is proposing to install a third pipeline in the vicinity of a municipal well field known to undergo karst collapse. As the FERC has noted in the DEIS, the two existing pipelines were constructed prior to the municipal well field creation and prior to the FERC being required to comply with NEPA. Over 23 sinkholes have developed there since the initiation of well field pumping in 2003. All of the sinkholes formed during 2007 and 2008 developed in or adjacent to the storage ponds in the well field.^{lv} These storage ponds are located in between the SNG and the Dixie Propane pipelines. According to FERC, the proposed route parallels the well field's southern boundary where it is collocated with Dixie's existing liquid propane pipeline within 350 to 450 feet from four of the eight municipal wells. The Dixie pipeline is within 250 to 450 feet of three of the wells and SNG's pipeline is within 200 to 400 feet of two of the wells. The SNG pipeline also crosses this well field diagonally for 1.5 miles. Should a pipeline rupture occur, and they do with some regularity despite PHMSA's safety regulations,^{lv} it is these pipelines' potential to detrimentally impact the Floridan Aquifer's protective cover, which will leave water supplies with increased vulnerability to existing land-use and storm water-related pollution. To address these impacts will realize increased water treatment and other infrastructure costs to the local community, which in rural areas often meet the criteria for environmental justice considerations. The EPA remains concerned over the location of any compressor station in the vicinity of any natural gas or natural gas liquids pipeline that are within the sensitive karst region of the Floridan Aquifer, (and particularly a municipal well field).

The EPA recommends that the FERC address the proposed action's greenhouse gas (GHG) impacts in context of CEQ's Draft 2014 Climate Change Guidance.^{lvii} The DEIS states that no standard methodology exists to determine how the proposed SMP Project's incremental contribution to GHGs would translate into physical effects of the global environment. The FERC does acknowledge the operation of SMP Project would result in the distribution and consumption of about 1,000,000 Dekatherms/day of natural gas. Due to the magnitude of this energy consumption, the EPA strongly recommends that the FERC consider doing a life cycle analysis (LCA). For example, the Department of Energy has completed a *Life Cycle Analysis of Natural Gas Extraction and Power Generation* (May 29, 2014).^{lviii} Furthermore, the proposed action converts land uses currently conducive to CO₂ sequestration and storage.

The EPA recommends that the FERC evaluate the potential for the proposed action to interfere with prescribed burns and other efforts to avoid and mitigate wildfire impacts. As evidenced by the severe 2015 wildfire season in Western, U.S., there appears to be very little that can be done to control a wildfire and protect affected property.^{lvix} The FERC has not addressed the fact that the proposed pipeline route is within an identified high wildfire hazard area.^{lvi} Many of Florida's wildfires are started because of lightning strikes.^{lvii} In fact one of Florida's thirteen pipeline incidents in 2014 included a lightning strike igniting a gas line.^{lviii} Georgia is the 8th highest

State in terms of density of lightning strikes per square mile. Lightning strikes from thunderstorms in June, July, and August account for over half of all injuries and deaths, and over 75% of property damage annually in Georgia.^{lxviii} The National Oceanic and Atmospheric Administration's *Rank of Cloud-To-Ground Flash Densities by State* ranks FL #1, AL #4, and GA #13 of the 49 states studied from 1997 to 2012.^{lxix} Increased incidences of wildfire is also an issue identified with climate change predictions associated with prolonged drought periods.^{lxx} The southeast United States has historically experienced cycles of severe drought periods, which may be worsened by future climate change, and further aggravate wildfire conditions.^{lxxi}

The EPA has provided extensive correspondence to the FERC prior to the issuance of the DEIS:

- April 21, 2014 Scoping Letter
- May 7, 2014, email notice of citizen complaint made to EPA
- July 17, 2014, letter regarding CWA 404 permitting
- August 11, 2014, email notice of citizen inquiry
- August 19, 2014, email notice of citizen complaint made to EPA
- September 11, 2014, technical comments on applicant's draft resources reports no. 2, 6, and 10 emailed
- October 1, 2014, EPA response to Cooperating Agency status
- November 3, 2014, citizen concerns expressed to EPA notice email
- June 10, 2015, EPA staff technical memo emailed
- July 20, 2015, comments on FERC's Supplemental NOI for the Albany Compressor Station
- July 24, 2015, email change of EPA's Cooperating Agency status because of resource constraints with FERC's NEPA schedule.

In summary, the EPA strongly recommends that an alternative route be considered, fully and objectively analyzed, and selected to completely avoid the most vulnerable karst areas of the Floridan Aquifer and avoid and minimize jurisdictional wetlands and other environmentally sensitive areas. The EPA requests that the FERC conduct a more thorough investigation and establish meaningful environmental metrics that allow for a full and informed comparison between the full range of reasonable and environmentally-sound alternatives.

ⁱ FERC docket numbers: (4 under construction) CP11-72 & CP14-12, CP13-25, CP12-509, CP12-507 and CP13-552. See: North American LNG Import/Export Terminals Approved (as of June 10, 2015), see:

<http://www.ferc.gov/industries/gas/indus-act/lng/lng-approved.pdf> .

ⁱⁱ FERC docket numbers: CP14-120, CP14-71 & 72, CP14-347, PF13-11, CP14-517, PF 13-4 Gulf LNG, PF14-17, PF15-2, PF15-13, PF15-14, PF15-15, PF15-18, PF15-20, PF15-25, and PF15-26. The 16th is under the US MARAD/Coast Guard's jurisdiction, not FERC's. See: North American LNG Export Terminals Proposed (as of June 10, 2015), see: <http://www.ferc.gov/industries/gas/indus-act/lng/lng-export-proposed.pdf>

ⁱⁱⁱ April 28, 2015, emergency petition submitted by the Sierra Club Florida Chapter.

^{iv} Section 1424(e) of the SDWA.

^v GROUND WATER ATLAS of the UNITED STATES Alabama, Florida, Georgia, and South Carolina HA 730-G Floridan aquifer system, Figure 56. at http://pubs.usgs.gov/ha/ha730/ch_g/G-Floridan.html

^{vi} GROUND WATER ATLAS of the UNITED STATES Alabama, Florida, Georgia, and South Carolina HA 730-G Floridan aquifer system, Figure 55. at http://pubs.usgs.gov/ha/ha730/ch_g/G-Floridan.html

^{vii} See: FGS/FDEP web page on sinkholes at <http://dep.state.fl.us/geology/geologictopics/sinkhole.htm>

^{viii} There is a discrepancy between the 15 fracture traces identified in Chapter 3 and the 17 fracture traces depicted in the Figures 1 – 8 of Appendix H.

^{ix} Bullock, P.J. and Dillman, A. Sinkhole Detection in Florida using GPR and CPT. Available at <http://www.dot.state.fl.us/statematerialsoffice/geotechnical/conference/materials/bullock-dillman.pdf>

^x Florida Springsheds and Springs – from Florida Springs Protection Areas - Greenhalgh, T. H., P.G. #1277 and Baker, A. E., February 9, 2005, Open File Map Series No. 95.

^{xi} Sabal Trail Transmission's FERC Section 7(c) Application, November 2014, Vol. 1, p. 3. Available at FERC's online administrative record.

^{xii} See CEQ Chairman's May 12, 2003, letter responding to the Honorable Norman Y. Mineta's May 6, 2003 letter requesting CEQ's guidance on the issue of "purpose and need."

^{xiii} FERC's 2014-2018 Strategic Plan, <http://www.ferc.gov/about/strat-docs/strat-plan.asp>

^{xiv} These request letters and FERC's corresponding approval letter orders can be found on FERC's online administrative record.

^{xv} NEPA's Forty Most Asked Questions, No. 11, *Limitations on Actions by an Applicant during EIS Process*, available at http://www.fws.gov/r9esnepa/NEPA_Handbook/40_Asked_Questions.pdf

^{xvi} Sabal Trail Project, Draft Resource Report 10: Alternatives, FERC Docket No. PF14-1-000 (June 2014), p. 10-12, submitted to FERC as required in FERC's NEPA regulations, 40 CFR §380.12.

^{xvii} Draft Resource Report 10: Alternatives, (June 2014), p. 10-14.

^{xviii} Draft Resource Report 10: Alternatives, (June 2014), p. 10-33.

^{xix} For example on June 2, 2014, Sabal Trail Transmission, LLC's, filed a limited warranty deed in the Office of the Clerk of Court, Dougherty County, regarding its acquisition of 79,184 acres of land in Albany, GA.

^{xx} See 33 CFR Part 320.4(a), (b), (g), (j), & (m)

^{xxi} See: the 1990 Memorandum of Agreement on the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines between the EPA and the Corps, later codified in 2008 as the "Mitigation Rule" (*Compensatory Mitigation for the Loss of Aquatic Resources; Final Rule*, 40 CFR Part 230).

^{xxii} The 1990 Memorandum of Agreement on the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines between the EPA and the Corps, later codified in 2008 as the "Mitigation Rule" (*Compensatory Mitigation for the Loss of Aquatic Resources; Final Rule*, 40 CFR Part 230).

^{xxiii} The remaining three steps are sequentially ordered as follows. Second, the applicant must demonstrate compliance with water-quality standards, toxic-effluent standards, endangered-species habitat, or designated marine sanctuaries. 40 CFR 230.10(b). Third, the applicant must determine whether the requested discharge of fill material will cause significant degradation, ^{xxiii} e.g., of the aquatic ecosystem. 40 CFR 230.10(c). After the three previous steps have been adequately evaluated, the potential for appropriate compensatory mitigation is assessed. The Mitigation Rule prohibits discharges unless all appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem. 40 CFR 230.10(d). After impacts have been fully minimized, compensatory mitigation (e.g. aquatic restoration, enhancement, creation, or in certain circumstances, preservation) may be required to offset unavoidable losses.

^{xxiv} 40 CFR 320.4 (b).

^{xxv} 33 CFR 320.4(m).

^{xxvi} The Sole Source Aquifer protection program is authorized by § 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. 300 et seq.). According to § 1424(e): If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register. After the publication of any such notice, no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for federal assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer.

^{xxvii} Per SNG's November 13, 2014, and July 24, 2015, letters to FERC's Secretary available in FERC's SMP online administrative record.

^{xxviii} Per SNG's November 13, 2014, and July 24, 2015, letters to FERC's Secretary available in FERC's SMP online administrative record.

^{xxix} The State of The National Pipeline Infrastructure, US Department of Transportation, available at https://opsweb.phmsa.dot.gov/pipelineforum/docs/Secretarys%20Infrastructure%20Report_Revised%20per%20PHC_103111.pdf

^{xxx} FERC docket numbers: (4 under construction) CP11-72 & CP14-12, CP13-25, CP12-509, CP12-507 and CP13-552. See: North American LNG Import/Export Terminals Approved (as of June 10, 2015), see: <http://www.ferc.gov/industries/gas/indus-act/lng/lng-approved.pdf> .

^{xxx} FERC docket numbers: CP14-120, CP14-71 & 72, CP14-347, PF13-11, CP14-517, PF 13-4 Gulf LNG, PF14-17, PF15-2, PF15-13, PF15-14, PF15-15, PF15-18, PF15-20, PF15-25, and PF15-26. The 16th is under the US MARAD/Coast Guard's jurisdiction, not FERC's. See: North American LNG Export Terminals Proposed (as of June 10, 2015), see: <http://www.ferc.gov/industries/gas/indus-act/lng/lng-export-proposed.pdf>

^{xxxii} FERC docket numbers: CP14-120, CP14-71 & 72, CP14-347, PF13-11, CP14-517, PF 13-4 Gulf LNG, PF14-17, PF15-2, PF15-13, PF15-14, PF15-15, PF15-18, PF15-20, PF15-25, and PF15-26. The 16th is under the US MARAD/Coast Guard's jurisdiction, not FERC's. See: North American LNG Export Terminals Proposed (as of June 10, 2015), see: <http://www.ferc.gov/industries/gas/indus-act/lng/lng-export-proposed.pdf>

^{xxxiii} Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact (January 14, 2011) MEMORANDUM FOR HEADS OF FEDERAL DEPARTMENTS AND AGENCIES available at <http://energy.gov/nepa/downloads/appropriate-use-mitigation-and-monitoring-and-clarifying-appropriate-use-mitigated>

^{xxxiv} Summary of Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, <http://www2.epa.gov/laws-regulations/summary-executive-order-12898-federal-actions-address-environmental-justice>

^{xxxv} Florida Springsheds and Springs – from Florida Springs Protection Areas - Greenhalgh, T. H., P.G. #1277 and Baker, A. E., February 9, 2005, Open File Map Series No. 95. The purpose of the map is to identify areas that contribute flow to Florida springs and to provide a published resource for land use decision-makers as they work to protect and restore both the quantity and quality of water discharging from Florida's springs. In the springs protection area, the sole source of drinking water and the source of spring discharge is groundwater.

^{xxxvi} Emergency Petition Sole Source Aquifer Designation for the Floridan Aquifer System, https://doc-08-a0-apps-viewer.googleusercontent.com/viewer/secure/pdf/3nb9bdfcv3e2h2k1cmql0ee9cvc5l0e/1s6gkgsq9acg4tjjacjfj0lslea66ckr/1442517000000/drive/*/ACFrOgDvyc4MowndGXt9MyjIQAKd1xTBj-HPFhK6UREM97p5PbA_Ns6HbJgYavZhh5-cIr7VkdZjS8DAxii0XEeHvuqANFVPxfS2dKGK5e9J2uSStNZU6-eqyjDBIZY=?print=true

^{xxxvii} Bullock, P.J. and Dillman, A. Sinkhole Detection in Florida using GPR and CPT. Available at <http://www.dot.state.fl.us/statematerialsoffice/geotechnical/conference/materials/bullock-dillman.pdf>

^{xxxviii} The Florida Division of Emergency Management's 2013 State of Florida Enhanced Mitigation Plan has a sinkhole hazard ranking by county. See Figure 3.38, p. 3-162, available at www.floridadisaster.org/Mitigation/State/Index.htm

^{xxxix} Geological and Geotechnical Investigation Procedures For Evaluation of the Causes of Subsidence Damage In Florida, Florida Geological Survey Special Publication No. 57, 2005, available at http://publicfiles.dep.state.fl.us/FGS/FGS_Publications/SP/SP57GeologicalProcCausesSubsidenceDamage.pdf

^{xl} Geological and Geotechnical Investigation Procedures For Evaluation of the Causes of Subsidence Damage In Florida, Florida Geological Survey Special Publication No. 57, 2005, available at http://publicfiles.dep.state.fl.us/FGS/FGS_Publications/SP/SP57GeologicalProcCausesSubsidenceDamage.pdf

^{xli} <http://www.dep.state.fl.us/geology/disclaimer.htm>

^{xlii} Professional Service Industries, Inc. (PSI) Sept. 18, 2014 preliminary geotechnical report indicated for the preferred site, west of Newton Road, two engineering borings were drilled. The standard penetration test results indicated zones where the drill rods fell under their own weight and losses in drilling-fluid circulation. These are indicators of porous rock, typical of the Floridan Aquifer. And can signify solution activity within the limestone formation and potential for sinkhole development.

^{xliii} Yuhr, L., et al, A Case History of a Large Karst Investigation, available at <http://www.dot.state.fl.us/statematerialsoffice/geotechnical/conference/materials/yuhr-benson-kaufmann-casto-jennings.pdf>

^{xliv} *Induced Sinkhole Formation Associated With Installation of a High-Pressure Natural Gas Pipeline, West-Central Florida*. T. J. Smith and G. C. Sinn, 13th Sinkhole Conference, Nckri Symposium 2, pp. 79 – 88, available at http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1116&context=sinkhole_2013

^{xl} FGS/FDEP web page on sinkholes at <http://dep.state.fl.us/geology/geologictopics/sinkhole.htm>

^{xli} *Induced Sinkhole Formation Associated With Installation of a High-Pressure Natural Gas Pipeline, West-Central Florida*. T. J. Smith and G. C. Sinn, 13th Sinkhole Conference, Nckri Symposium 2, pp. 79 – 88, available at http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1116&context=sinkhole_2013

^{xlii} Source: Arkansas River pipeline blowout occurred on Sunday morning, cause still unknown. See: <http://www.arktimes.com/ArkansasBlog/archives/2015/06/03/arkansas-river-pipeline-blowout-occurred-on-sunday-morning-cause-still-unknown>

- xlvi See: NTSB Abstract PAR-0301, USDOJ: Environment and Natural Resources Division : U.S. v. El Paso Natural Gas Co". Justice.gov. 2007-07-26. Retrieved 2013-04-02, and see:
https://en.wikipedia.org/wiki/List_of_pipeline_accidents_in_the_United_States_in_the_21st_century,
- xlvi http://primis.phmsa.dot.gov/comm/reports/enforce/documents/320021003H/320021003H_CAO_03282002.pdf
- l http://primis.phmsa.dot.gov/comm/reports/enforce/documents/320031010H/320031010H_CAO_10242003.pdf
- li https://en.wikipedia.org/wiki/List_of_pipeline_accidents_in_the_United_States_in_the_21st_century
- lii http://primis.phmsa.dot.gov/comm/reports/enforce/documents/320141008S/320141008S_Notice%20of%20Proposed%20Safety%20Order_12242014.pdf
- liii Measuring Cat Exposure in the Energy Space Energy Transmission Catastrophes OCTOBER 4, 2012, Chris Ramarui, Senior Vice President, Session MAN-4, can find at
https://www.google.com/?gws_rd=ssl#q=wildfires+and+natural+gas+pipelines&start=10
- liv Source: Missouri gas pipeline ruptures, explodes, Nov. 29, 2013, <http://www.cbsnews.com/news/missouri-gas-pipeline-ruptures-explodes/>
- lv Second pipeline rupture has officials worried about erosion (08/19/2011),
<http://online.wsj.com/article/SB10001424053111904070604576516732060524112.html>
- lvi Hyatt, J.A. and Jacobs, P.M. *Distribution and morphology of sinkholes triggered by flooding following Tropical Storm Alberto at Albany, Georgia, USA*. *Geomorphology* 17 (1996) 305 – 316, available at
<http://www.sciencedirect.com/science/article/pii/0169555X96000141>
- lvii Per SNG's November 13, 2014, letter to FERC's Secretary available in FERC's SMP online administrative record.
- lviii *Induced Sinkhole Formation Associated With Installation of a High-Pressure Natural Gas Pipeline, West-Central Florida*. T. J. Smith and G. C. Sinn, 13th Sinkhole Conference, Nckri Symposium 2, pp. 79 – 88, available at http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1116&context=sinkhole_2013
- lix Stringfield, V.T., *Artesian Water in Tertiary Limestone in the Southeastern States*, Geological Survey Professional Paper 517 (1966), p. 17, available at <http://pubs.usgs.gov/pp/0517/report.pdf>
- lx Warner, D.G., et al, *Hydrologic Conditions, Groundwater Quality, and Analysis of Sinkhole Formation in the Albany Area of Dougherty County, Georgia*, 2009, USGS Scientific Investigations Report 2012-5018, p. 17, available at <http://ga.water.usgs.gov/projects/albany/publications.html>
- lxi For example in 3014 there were 705 pipeline incidents, that PHMSA was aware of, which realized 19 fatalities and 96 injuries. See: Pipeline and Hazardous Materials Safety Administration's 20-year incidences summary at <https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages> And see PHMSA's pipeline investigation reports site at <http://phmsa.dot.gov/pipeline/library/failure-reports>
- lxii Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts
<https://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance>
- lxiii DOE/NETL-2014/1646, available at
<http://www.netl.doe.gov/File%20Library/Research/Energy%20Analysis/Life%20Cycle%20Analysis/NETL-NG-Power-LCA-29May2014.pdf>
- lxiv For example, two fires in California: Butte and Valley Fires have destroyed over 1,000 homes. The Valley Fire has consumed 585 homes, destroyed hundreds of other structures, and scorched over 70,000 acres of land. The Butte Fire has destroyed 511 residences and more than 330 outbuildings in the course of 10 days. California Fires have destroyed over 1,000 homes (September 20, 2015) <http://wqad.com/2015/09/20/california-wildfires-have-destroyed-more-than-1000-homes/>
- lxv State of Florida Enhanced Hazard Mitigation Plan, Chapter 3 State Risk Assessment, Figure 3.27, available at <http://www.floridadisaster.org/mitigation/State/Index.htm>
- lxvi Hazardous Weather: a Florida Guide to Wildfires, <http://www.floridadisaster.org/kids/wildfires.htm>
- lxvii Florida Public Service Commission, Natural Gas Pipeline, Annual Safety Report, 2014, see:
http://www.psc.state.fl.us/publications/pdf/electricgas/Gas_Pipeline_Safety_2014.pdf
- lxviii National Weather Service Brochure: Lightning, Georgia's Underrated Killer
http://www.srh.noaa.gov/images/ffc/pdf/Lightning08_final.pdf
- lxix http://www.lightningsafety.noaa.gov/stats/97-12Flash_DensitybyState.pdf
- lxx 2014 National Climate Assessment Report: Regions: Southeast,
http://nca2014.globalchange.gov/search/node?search_api_views_fulltext=wildfire
- lxxi The post 2005 drought appears to have been caused partly by atmosphere-ocean climate variability and partly by internal atmosphere variability, all of which is typical of what has been happening in the region for hundreds of years. The serious stress the drought put on social and agricultural systems in the region came about purely due to lack of adequate planning based on knowledge of regional climate variability. Belated planning now must also take

into account the possibility that climate change will increase stress on regional water resources. Seager, R. Drought in the southeastern United States: the recent drought in the context of a millennium of climate variability, physical causes and future hydroclimate change, (July 2008), LDEO Drought Research <http://www.ldeo.columbia.edu/res/div/ocp/drought/SE.shtml>

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FEDERAL ENERGY
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SEP 12 2016

ORIGINAL

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

Re: PennEast Pipeline Project Draft Environmental Impact Statement; Pennsylvania, and New Jersey; July 2016 (FERC Docket No. CP15-558; CEQ# 20160175)

Dear Deputy Secretary Davis:

In accordance with the National Environmental Policy Act (NEPA) of 1969, Section 309 of the Clean Air Act and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for PennEast LLC's (PennEast or the applicant is a consortium of six energy companies) PennEast Pipeline Project. PennEast proposes to construct and operate about 118.8 miles of natural gas pipeline extending from Luzerne County, Pennsylvania to Mercer County, New Jersey. EPA is a cooperating agency for this DEIS. This comment letter jointly reflects the review and comment of EPA Regions 2 and 3 on the PennEast Pipeline Project DEIS.

EPA has significant concerns regarding the alternatives analysis, a number of important topics for which information is incomplete, and the direct, indirect and cumulative impacts of the proposed action on the environment and public health, including impacts to terrestrial resources, including interior forests, aquatic resources, and rare, threatened and endangered species. This letter contains a brief summary of the principal issues; a more detailed discussion of the project, impacts and issues, and our recommendations to improve the analysis, is presented in the enclosure.

Alternatives

The DEIS does not analyze alternatives beyond the applicant's preferred alternative in detail. EPA recommends that FERC provide detailed analysis on system and route alternatives, means to meet demonstrated demand. We believe that FERC should further consider collocation opportunities and develop alternatives which further avoid and minimize impacts to important project area resources. Without additional analysis of alternatives, it is not clear that the preferred alternative is the only one that can meet the stated purpose and need. Additional recommendations on specific system and route alternatives are provided in the enclosures to this

letter. An expanded discussion would help the decision maker and the public understand and explore viable alternatives.

Impacts to the environment and public health

The current preferred alternative results in significant adverse environmental impacts. Impact estimates in the DEIS include direct removal or fragmentation of 633 acres of forest. Impacts to high valued interior forests are not quantified. The preferred alternative would result in 56 acres of temporary impact to wetlands, 35 acres of permanent impact to wetlands, and 255 waterbody crossings. These systems provide habitat and valuable water quality and air quality ecological services for the region and downstream Chesapeake and Delaware Bays. PennEast has proposed a 1,056 foot dry crossing of the Susquehanna River, which appears to be the longest crossing of the project. Construction of this crossing proposes to divert flow of the river during low flow conditions. EPA recommends that the potential on site and downstream effects of these flow perturbations be quantified.

EPA recommends the EIS evaluate potential construction impacts relative to mining subsidence, landslides and flash flooding and potential blasting impacts to water wells, springs, and wetlands. We also recommend that the DEIS consider the project's potential to induce mobilization of naturally-occurring arsenic into groundwater.

The DEIS contains estimates of GHG emissions from construction and operation of the project as well as the end use of the gas to be transported. We recommend that the DEIS also consider mitigation opportunities, especially approaches to reducing leakage of methane along the proposed pipeline; please see the following website for more information:

<https://www.epa.gov/natural-gas-star-program>

Many surveys, data collection, and analysis are incomplete. EPA recommends that FERC fully assess project impacts to natural resources with more complete information. EPA recommends that FERC consider ecosystem services and conduct an aquatic resource functional assessment. This information could both improve FERC's understanding of the potential impacts of the project, and suggest possibilities for decreasing environmental impacts. We recommend that FERC fully provide appropriate compensatory mitigation for adverse impacts to natural resources.

Cumulative impacts

The cumulative impact assessment narrowly identifies past, present and reasonably foreseeable actions as well as uses a narrow geographic and temporal scope to assess impacts. EPA's detailed recommendation on the scope of the analysis provided in the enclosure to this letter emphasize the need to improve public understanding of cumulative impacts. EPA recommends that FERC describe the inter-related network of existing and proposed pipelines and associated impacts. We recommend that the cumulative impact analysis be expanded to provide a more comprehensive consideration of impacts from natural gas production, transmission and use.

Incomplete information

A significant amount of information is omitted from the DEIS and is proposed to be filed by the project proponent at a future date. Failing to consider this information in the DEIS leads to gaps in the data and lack of potentially important information for the decision maker. Some of the key information that is left to a future date includes geophysical investigations (particularly landslide investigations); Karst Mitigation Plans; Blasting Plans; water well and spring surveys; historic information; surveys for land, rare, threatened or endangered species; geotechnical feasibility studies for Horizontal Directional Drilling (HDD) crossing locations; mitigation measures to minimize drilling risks; and a detailed aquatic resource compensatory mitigation plan.

EPA is concerned with extent and significance of information left to a later date. For example, the EIS includes more than 50 recommended measures proposed to be included as specific conditions in the Commission's Order, including currently incomplete plans and surveys. Although the DEIS contains a conclusion that FERC does not believe that PennEast's responses to conditions would change any of the conclusions presented in the DEIS, EPA is concerned that a fully informed evaluation of potential impacts and routing decisions may not be possible without some of the still incomplete information. EPA recommends that FERC evaluate relevant and critical information to evaluate potential impacts and determine if additional avoidance can be accomplished through rerouting of the pipeline.

EPA is interested in discussing with FERC the most appropriate way for new information such as surveys, plans, and analysis, can be shared and evaluated with stakeholders. We recommend that the information not currently included in the DEIS be disseminated to resource agencies and public stakeholders to allow comment prior to the issuance of any certificates by FERC; this may possibly be best accomplished through the use of a revised DEIS.

For the reasons stated here and in the attached more detailed comments, EPA has rated the DEIS preferred alternative as EO-2 (Environmental Objections, Insufficient Information). A description of our rating system can be found at:
www.epa.gov/nepa/environmental-impact-statement-rating-system-criteria

We would appreciate the opportunity to discuss the comments provided in this letter and the enclosure and answer any questions you may have, at your convenience. Please contact Jeff Lapp, Associate Director at (215) 814-2717 or lapp.jeffery@epa.gov, or the staff contact for this project Ms. Alaina McCurdy at (215) 814-2741 or mccurdy.alaina@epa.gov.

Sincerely,



John R. Pomponio
 Division Director
 Environmental Assessment and Innovation Division

Enclosure (1) Narrative Technical Comments

Enclosure 1 – Narrative Technical Comments PennEast DEIS

Enclosure 1 includes Narrative Technical Comments on the following topics:

- 1) Background/Description
 - 2) Alternatives Screening
 - 3) System Alternatives
 - 4) Route and Above-ground Facility Alternatives
 - 5) Geology
 - 6) Streams and Wetlands
 - 7) Vegetation, Wildlife, and Public Lands
 - 8) Rare, Threatened and Endangered Species
 - 9) Cultural Resources
 - 10) Conservation and Visual
 - 11) Air
 - 12) Drinking Water, Human Health, and Environmental Justice
 - 13) Cumulative Impacts
 - 14) Climate Change
-

1) **Background/Description**

The applicant's project purpose is to provide about 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation service from northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states. The applicant's preferred alternative includes 115.1 miles of new, 36-inch-diameter pipeline (main line); the 2.1-mile Hellertown Lateral consisting of 24-inch-diameter pipe in Northampton County, Pennsylvania; the 0.1-mile Gilbert Lateral consisting of 12-inch-diameter pipe in Hunterdon County, New Jersey; and the 1.5-mile Lambertville Lateral consisting of 36-inch-diameter pipe in Hunterdon County, New Jersey. Additional facilities include one new 47,700 horsepower compressor station in Kidder Township, Carbon County, Pennsylvania, eight metering and regulating stations for the Project interconnects, 11 mainline valve (MLV) sites, and four pig launcher/receiver sites. About 44.3 miles (26.8 miles in Pennsylvania and 17.5 miles in New Jersey), or about 37 percent, of the 115.1-mile-long Main Line pipeline route would be collocated and constructed adjacent to existing rights-of-way.

2) **Alternatives Screening**

In addition to the preferred alternative the EIS presents the no-action alternative, four system alternatives, four route alternatives, other minor route modifications and variations, and one compressor station alternative. System alternatives included the Transco Leidy Line system alternative, Columbia Gas system alternative, Texas Eastern system alternative, and the Atlantic Sunrise system alternative. Route alternatives and variations included the Luzerne and Carbon Counties Route alternative, the Leidy Route alternative, Bucks County alternative (also referred to as original route), and the Harbourton route alternative. Each of the system and route alternatives were dismissed. Only the applicant's preferred alternative, described above, was carried forward for detailed analysis.

EPA is concerned that there may be alternatives to the applicant's preferred alternative that may meet the project objectives which were not considered in detail in the DEIS. Some

alternatives considered at the screening level would have similar impact and should be retained for further detailed study. EPA is concerned that evaluation criteria of alternatives seems to be unequally applied to many of the alternatives, such as amount of collocation, length of pipeline, amount of disturbance, amount of operational right of way (ROW), and wetland impacts. The weighing of advantages and disadvantages should be clearly explained.

The preliminary screening done in the EIS does not take into account the quality and value of resources, which can be better incorporated into the study if these alternatives were retained. EPA recommends that FERC consider the varying degrees of resource function, value or quality, in addition to estimated impact totals (acreage, miles, etc). The alternatives analysis should fairly evaluate and describe alternatives that were dismissed from further study as well as the rationale for their dismissal. Alternative locations for project beginning and end points should also be described and evaluated, as there could be many potential tie in locations for the mainline and laterals; it is unclear that other locations are not feasible or beneficial.

3) System Alternatives

In the absence of improved purpose and need documentation, it is unclear if the stated purpose and need is too narrow and thereby limits the range of alternatives. Four system alternatives were dismissed from consideration in the DEIS, including the Transco Leidy Line system alternative, Columbia Gas system alternative, the Texas Eastern system alternative and the Atlantic Sunrise System alternative.

The PennEast DEIS states that Transco Leidy Line system alternative was considered in the Atlantic Sunrise EIS (called the Transco system alternative in that document); the PennEast EIS stated that collocation was determined to be not feasible and capacity was constrained. The Atlantic Sunrise EIS found that collocation in certain areas would be feasible and the alternative was not capacity constrained. EPA reviewed and provided comments on the Atlantic Sunrise DEIS, including various system alternatives presented. In our comments on Atlantic Sunrise, we recommended that the Transco System alternative be considered in further detail in that EIS. Similarly we recommend FERC to consider this system alternative in greater detail alongside of the proposed project in the EIS. EPA recommends that this alternative be more carefully evaluated.

An Atlantic Sunrise system alternative is presented in the DEIS, which states that this line is already fully contracted, doesn't deliver to the same points, and would have similar or greater environmental impacts as PennEast. However an expanded Atlantic Sunrise system alternative was not presented. We urge FERC to present equivalent alternative analysis' for each pipeline, and specifically as was done in the Atlantic Sunrise DEIS which presented an expanded PennEast Project requiring 80 additional miles of pipeline to the currently proposed PennEast Project and would also connect to the Transco Pipeline. We recommend that FERC consider an expanded PennEast Project or an expanded Atlantic Sunrise pipeline which could potentially eliminate the need for one of the applicant proposed projects and could potentially reduce the overall environmental impacts, duplicative services, and may have the potential to meet the purpose and need. EPA recommends FERC consider evaluating pipelines routed through the same areas and pipelines making similar connections together in further detail.

The Columbia Gas system alternative and the Texas Eastern system alternative were dismissed from consideration because the receipt and delivery points were not addressed. If

alternate receipt and delivery points were possible then the alternatives would have the potential to be viable. EPA recommends that FERC more broadly consider delivery and receipt points in order to more fully consider and evaluate alternatives that may be both reasonable and viable to the applicant preferred alternative. The EIS should describe how the start and end point locations for the proposed project were determined. This discussion could provide insight into the rationale for the selected locations of the proposed action. System alternatives that utilize different start or end points may meet the project purpose and need should also be considered. Reasonably similar delivery points and pipeline connection locations should be considered.

It may be beneficial to note that the impact estimates for system and route alternatives have likely not included efforts to avoid and minimize adverse impacts, as was done for the preferred alternative. If similar levels of study and effort to avoid and minimize impacts for these alternative, the potential to reduce adverse impacts of system alternatives could be identified. A more detailed analysis could reveal that system alternatives like the Transco Leidy Line system alternative (or Transco system alternative) result in minimized impacts, has environmental advantages or is a less damaging alternative. It appears that system alternatives have potential to meet the stated purpose and need/objectives of the applicant's preferred alternative.

4) Route and Above-Ground Facility Alternatives

Several route alternatives were presented in the DEIS, including the Luzerne and Carbon Counties Route alternative, the Leidy Route alternative, Bucks County alternative (also referred to as original route), and the Harborton route alternative. Although these alternatives were dismissed, it is not clear that the stated disadvantages outweigh the potential advantages. In order to fully consider the environmental advantages and disadvantages, we recommend retaining these route alternatives.

The Bucks County route has the potential to avoid waters supply and sole source aquifers in Hunterdon County, New Jersey. The Bucks County Alternative would result in less disturbance during construction, less operational right-of-way, and would impact fewer wetlands during construction compared to the corresponding segment of proposed route. The Luzerne and Carbon Counties route would be 1.7 miles shorter and result in 27 acres less of construction disturbance. The Leidy line route has the potential to be collocated for an additional 94.8 miles and would the Sourland Mountain region in New Jersey, which is comprised of lands in preservation and is a highly valued natural resource. Additional comments regarding Sourland Mountain are provided below. If avoidance and minimization efforts were applied to these route alternatives, impacts from laterals and extensions to delivery points might be reduced. EPA would not recommend eliminating these route alternatives, particularly the Leidy line route at this time. The EIS has recognized that the Leidy Line route is viable; until further detailed analysis is conducted, this alternative should not be eliminated.

We recommend that an alternatives analysis for above-ground facilities, including all compressor stations, be conducted and included in the EIS to potentially minimize impacts to forest and Forest Interior Dwellings (FIDS) habitat, aquatic resources, Rare, Threatened and Endangered (RTE) species, air quality, and other resources. The Kidder CS proposed location would impact 1.4 acres wetland (construction and operation), 31.4 acres forest for construction, and 24.8 acres forest for operation. EPA is very concerned that the access route to the Kidder Compressor station seems to disregard forest impacts and not minimize tree loss. We request that access route alternatives be considered, which include placing the route adjacent to the existing

right-of-way or connected to the road next to the storage facility. Potential impacts resulting from these alternatives should be considered in the EIS, which can include potential noise and traffic construction related impacts, any potential long-term impact, and appropriate compensatory mitigation measures.

One alternative location for the Kidder CS was presented in addition to the proposed location. CS Alternative 1 would impact 0.2 acres wetland (construction and operation), 25 acres forest for construction, and 23 acres for operation. Despite the apparent forest and wetland advantages for CS Alternative 1 and its proximity to the proposed location, the CS Alternative 1 was not preferred because the preferred CS location is zoned light industrial and abuts I-80 and is further from the nearest noise sensitive area (NSA). It is unclear why the CS Alternative 1 location was dismissed from further consideration. We suggest that additional detail on the siting criteria along the pipeline and selection rationale be included in the EIS. It is not clear that alternate locations for compressor stations beyond those included in the proposed action have been considered or included in the EIS. EPA also recommends that the access route to compressor station sites be evaluated for possible opportunities to avoid and minimize impacts.

5) Geology and Arsenic

Challenging geologic conditions are likely to be encountered during project construction. Blasting, in combination with steep slopes, karst topography, and active or abandoned mines and quarries, has the potential to result in adverse impacts that were not considered or fully evaluated in the EIS. At this time, it is unclear if the data presented is complete or surveys are completed or ongoing. We recommend clarifying this information in the EIS. We also recommend evaluating the potential effects of these geologic hazards, including mining related subsidence, landslides and flash flooding, on pipeline construction and operation. We recommend that impacts, especially in high risk areas, be evaluated specific to this project. Further avoidance and minimization of impacts to affected lands might be appropriate; we recommend making such contingencies clear in the NEPA analysis.

We recommend that the EIS describe the nature, extent, frequency of potential blasting impacts water wells, springs, wetlands, resources of special concern, nearby aboveground facilities, and adjacent pipelines and utility lines. It was difficult for EPA to fully evaluate the potential effects of blasting as the EIS did not include the blasting plan that is referenced throughout the document. Changes to geology resulting from blasting may directly and indirectly affect hydrology, wildlife and local residents, which we recommend considering within the scope of the EIS.

Geotechnical investigations for proposed HDD locations are incomplete. As landowner permissions become available, we recommend including HDD geotechnical investigations data and interpretations in order to evaluate the potential for use of HDD at these locations so that other methods may be explored if HDD cannot be implemented. EPA recommends FERC develop and finalize before construction, an HDD construction monitoring and adaptive management plan in order to minimize potential impacts from HDD frack out on any rare, threatened or endangered species, as well as overall stream health and habitat. In order to concurrently evaluate potential geologic hazards, karst hazards, drinking water impacts, and blasting impacts, we recommend that geotechnical reports, the Karst Mitigation and Blasting Plans be included in the EIS.

The proposed pipeline route crosses areas exhibiting shallow depth to bedrock, which represents 31 percent of soils crossed. We recommend explaining how methods involved in trenching other than excavation, such as blasting, may impact the soil moisture capacity to further evaluate revegetation potential or prime farmland soil conditions after such a method is implemented. Alteration of shallow bedrock due to excavation and blasting may modify hydrologic pathways and storage potential of aquifers. These impacts may not be consistent over the entire length of the pipeline and may need to be evaluated on a case-by-case basis where groundwater resources are used for farming practices or drinking water-supply.

Concerns have been raised that the PennEast pipeline project may induce mobilization of naturally-occurring arsenic into groundwater and therefore contaminate nearby water resources. In addressing some public comments, PennEast conducted a leach test to determine implications for arsenic mobility related to the proposed PennEast Pipeline. However, there are concerns that were not addressed in the study and therefore the implications for arsenic mobilization related to the proposed PennEast project remain unknown.

The study conducted by PennEast addresses the spread of arsenic during construction and has concluded that broken fragments of natural-occurring arsenic enriched rock, generated during trenching activities and subsequently returned as backfill, will not result in significant arsenic mobilization into the hydrogeological environment. The study also concluded that the drilling mud, used for HDD activities, will not become contaminated with arsenic-enriched rock, mobile fractions of arsenic will not contaminate the environment, and arsenic-enriched rock-mud mixture will not require handling and disposal as a hazardous waste class. The study, however, did not address comments concerning the impact of long term operation of the proposed pipeline on the spread of arsenic produced by bacteria into groundwater. Some conclusion and statements appear to be contradictory to others made previously in the DEIS regarding the risk of arsenic mobilization. Please clarify the risks of arsenic mobilizations, and outline any plans to mitigate these risks.

EPA recommends that FERC further investigate the possibility of arsenic mobilization during construction into groundwater. The potential for surface activities to mobilize arsenic to reach deep water wells is uncertain. It may be prudent to test wells not only before and after, as stated in the DEIS, but also during construction. We recommend that FERC outline monitoring plans or include them in the EIS and make them available to the public. The potential impacts surrounding arsenic have been raised by many residents and communities in the project area, many of whom may be using water from deep wells while construction of the project is taking place. We suggest FERC consider how this information would be most effectively communicated to communities within the areas of detectible arsenic mobilization. It is critical that FERC identify how test results will be shared, and how the public will be kept informed.

It is also important that FERC address the reports and concerns raised by the public, Intervenor, and within filed reports, some of which address the proposed construction methods. EPA recommends that FERC carefully consider these issues and ensure that concerns regarding arsenic mobilization are adequately addressed.

6) Streams and Wetlands

The EIS reports that construction of the project would temporarily impact about 56 acres of wetlands (26 acres in Pennsylvania and 30 acres in New Jersey) and permanently impact about 35 acres of wetlands (17 acres in Pennsylvania and 18 acres in New Jersey). The Project would cross 255 waterbodies (159 perennial, 45 intermittent, 40 ephemeral, and 11 open water). EPA recommends that additional information on aquatic resources be included in the EIS and made publicly available prior to any issuance of Certificate approval by FERC, including complete field delineation information, impact breakdowns and specific construction techniques for each waterbody crossing, detailed stream and wetland assessment data on the quality or functions of the systems, and detailed, or at a minimum conceptual, compensatory mitigation plans.

At this time, the entire proposed project corridor has not been surveyed. It is stated that about 77% of preferred route has been delineated for wetlands and streams in Pennsylvania, and only 28% in New Jersey. EPA recommends that these surveys be completed and verified prior to the issuance of a FERC Certificate. We also recommend that the applicant use an appropriate functional assessment to evaluate the impacts, both temporary and secondary, to the aquatic ecosystem. Using an appropriate assessment will ensure that functions and values are accounted for in the impact assessment and that the proposed compensation plan is adequate to offset the loss, including temporary loss, of aquatic resource functions. Without completed surveys and a functional assessment of the aquatic resources, it is unclear if sufficient wetland and stream information has been collected to support informed decision-making.

Additionally, the proposed project would likely require Clean Water Act Section 404 permits from the U.S. Army Corps of Engineers (USACE) and the New Jersey Department of Environmental Protection (NJDEP), for impacts in Pennsylvania and New Jersey respectively. Without more detailed information it is uncertain if there is sufficient information for a fully informed decision to be made by FERC, or other permitting agencies, as well as if the proposed impacts have been fully avoided and minimized or will be appropriately compensate for the functions lost through compensatory mitigation.

EPA is concerned about direct, secondary and cumulative impacts to aquatic resources, groundwater, and water quality. Aquatic resources have the potential to be impacted by many activities, including waterbody crossings, clearing, blasting, and water withdrawals for hydrostatic testing. Some of the resources within the project have ecological and recreational importance as stated on page 4-47, including High Quality and Exceptional Value streams in Pennsylvania, and Freshwater, Trout Maintenance, and Category 1 waterbodies in New Jersey. The full assessment of these simultaneously occurring impacts to resources needs to be conducted. With the potential for complex impacts to occur, such as changes in recharge patterns and flow status, additional avoidance and minimization measures may be necessary to protect the aquatic ecosystem.

The DEIS did not detail avoidance and minimization of adverse impacts to wetlands and streams. We recommend that the DEIS clearly describe the avoidance and minimization efforts are being incorporated into the project design and construction. For analysis in the EIS, avoidance and minimization measures should not only apply to direct impacts, such as the discharge of fill material or crossings, but also indirect impacts (e.g. potential increased downstream sedimentation), as well as by the proposed water withdrawal. Water withdrawal may affect recreational and biological uses, stream flow, and result in impacts to stream and

wetland habitat. EPA recommends that FERC conduct further detailed analysis of specific streams and wetlands of concern or high sensitivity and work with appropriate resource agencies to determine if additional avoidance and minimization efforts may be necessary to reduce impacts to important resources within the project area.

PennEast proposes to prepare site-specific blasting plans for each waterbody crossing where blasting is determined to be necessary. We suggest that the EIS explain how it will be determined that blasting at waterbody crossings will be necessary. If this information is discussed in the blasting plans, then we recommend that these plans be provided as part of the EIS and made available to stakeholders to question and understand. We suggest that these blasting and specific crossing plans be prepared and made public before approval by FERC and permitting agencies, such as the USACE and NJDEP, and if appropriate, other regulatory agencies. We recommend that site specific plans identify special resource considerations during blasting to determine if a pre-blasting, and post blasting monitoring plan is appropriate. We recommend that the EIS also consider potential secondary impacts including effects to stream base flow. We recommend including a map with the waterbody locations that may require blasting, including karst topography, wetlands and water withdrawal locations. Crossing and construction methods are critical to assessing project impacts. Without this additional information it is unclear if FERC can make a fully informed decision regarding the potential impacts to waterbodies.

A detailed compensatory mitigation plan (CMP) has not been included as part of the EIS. EPA requests an opportunity to review and comment on the CMP. It is unknown if the proposed mitigation to address the conversion and temporal loss of wetlands and aquatic resources will be adequate. We recommend that measureable, observable success criteria for proposed mitigation sites be developed and included. Additionally, we recommend a monitoring plan of the converted wetlands to assure that they remain waters be developed. FERC may wish to consider whether additional mitigation to address impacts to aquatic resources beyond the CWA Section 404 context may be appropriate.

The project proposes to utilize HDD at several stream crossing locations, including Beltzville Lake, the Lehigh River/Lehigh Canal the Delaware River/Delaware Canal, Lockatong Creek (at two locations), and an unnamed tributary to Woolsey Brook. The Susquehanna River will also be crossed by the PennEast Pipeline, however HDD is not proposed at this location. According to Table 4.3.2-5, the Susquehanna River would be crossed using a dry crossing method with the crossing length of 1,056 feet, which appears to be the longest crossing of the entire project. Page 4-120 states that 10.9 acres of open water would be affected by the additional temporary workspace (ATWS) associated with a dry crossing of the Susquehanna River, and that the crossing would be constructed by diverting the flow of the river during low flow conditions.

EPA is concerned that the proposed dry crossing method may not be the most protective crossing method for the River and may result in unanticipated impacts. The EIS has not explained why the dry crossing method has been selected for the Susquehanna River, which has water quality impairments related to metals and a fish consumption advisory for PCBs. The EIS describes PCB concerns for the Lehigh River; however HDD is proposed at this location. Discussion of this crossing on page 4-45 states that under the HDD method no in-water work would be conducted, there would be no disturbance of sediments or water quality impairment during construction. We recommend that FERC evaluate the likelihood and potential effects

resulting from the disruption and mobilization of river bottom sediments that may contain PCBs, as well as apply these concerns equally to all crossings where PCBs are a concern.

The EIS concludes that no long-term effects on surface waters are anticipated as a result of construction and operation of the project; no designated water uses would be permanently affected because the pipeline would be buried beneath the bed of the waterbodies, erosion controls would be implemented during construction, and streambanks and streambed contours would be restored as close as possible to preconstruction conditions. It is unclear what these conclusion are based on. No conclusions on the short-term effects have been presented. Although erosion controls and restoration may be utilized, we recommend that FERC consider the effectiveness and potential failure of these measures. EPA encourages FERC to fully consider long and short-term effects to waters.

7) Vegetation, Wildlife, Public Lands

The EIS recognizes that impacts on forest habitat could include fragmentation and edge effects. Project construction would impact 633 acres of forested area, and 452 acres of forested areas impacted during construction would be retained for operational use. It is stated that the proposed pipeline route was sited to avoid areas containing large, interior forested stands where possible, and when forests could not be avoided, proposed routing through a forest was accomplished by locating the pipeline as far from the interior portion of the forest as practicable to maximize preservation of interior forest habitat. The EIS did not provide documentation of these efforts. EPA is concerned that values of forest resources and the indirect impacts to forests, particularly interior forests, were not fully evaluated.

We recommend that the importance of interior forest habitat be discussed and impacts be quantified. Newly created edge habitats would be established by maintenance of the permanent right-of-way, and the indirect impacts could extend for 300 feet on each side (600 feet total) of the new corridor into the remaining interior forest blocks. EPA recommends estimating the number of interior forests bisected, acreage affected, interior forest permanently eliminated and converted to forest edge habitat, and address reduced core and forest block sizes in the EIS. The avoidance and minimization of impacts to interior forests or consideration of these resources during pipeline routing, beyond utilizing collocation, is not apparent in the EIS. If measures have been taken, please describe and discuss them in the EIS.

The Project would cross areas identified as unique or exemplary wildlife habitats, including the Bear Creek Preserve, Sourland Mountain Region, State Game Lands, Deer Management Areas, and Important Bird Areas (including Hickory Run State Park, Kittatinny Ridge, Musconetcong Gorge, Everittstown Grassland, Baldpate Mountain, and Pole Farm). Pipeline construction and operation will introduce a new route for invasive plants to enter this area and the destruction of native trees and migratory bird habitat. If construction in these areas includes blasting, pipeline construction may alter ground or surface water flow conditions. Potential impacts resulting from stream and wetland crossings in these areas should also be considered. EPA is concerned that impacts to these areas may not have been fully avoided and minimized, sufficiently evaluated and appropriate compensatory mitigation may not be available. We recommend that FERC consider affording special protection to some of these areas, such as Sourland Mountain which the largest contiguous forest in central New Jersey. We also recommend that FERC further consider opportunities for collocation with another pipeline or

road. If no opportunities exist, EPA recommends that FERC request PennEast to avoid the forest entirely.

We recommend that assessment of ecosystem service of forest be included in the EIS. This would include evaluating mitigation for lost services, such as carbon sequestration.

8) Rare, Threatened and Endangered (RTE) Species

Five federally listed threatened or endangered species have been identified as potentially occurring in the project area, including the Indiana bat and northern longeared bat, bog turtle, dwarf wedgemussel, and northeastern bulrush. The Pennsylvania Fish and Boat Commission (PFBC) further identified the Atlantic sturgeon and shortnose sturgeon that are listed under both the Endangered Species Act (ESA) and two applicable state endangered species laws.

EPA is concerned that RTE species surveys and reports are incomplete and were not available for the DEIS. Although FERC has recommended that surveys be completed prior to construction, page 4-93/94 states that PennEast would pursue access through eminent domain at which time surveys would be completed if the Commission decides to authorize the project. It appears that this information will not be available prior to FERC's decision and will therefore not be available to be considered and incorporated into the decision-making process. There may not be sufficient information for FERC to make a fully-informed decision as to the project's effect on RTE species. The absence of this information at this time drastically reduces opportunities to avoid and minimize impacts to key RTE habitat as well as consider and incorporate route and construction changes specific to RTE species. This information should be considered, in consultation with U.S. Fish and Wildlife Service (FWS) and other agencies, and factored into any decisions made by FERC on this project.

Please update the status of consultation with FWS, and include all correspondence relating to ESA requirements in the EIS. The status of consultation with resource agencies on migratory birds should also be updated in the EIS. We recommend that potential impacts on migratory birds and avoidance and minimization efforts be clearly addressed in the EIS. Migratory bird surveys on public lands in New Jersey have been requested by NJDEP Division of Fish & Wildlife Endangered and Nongame Species Program (ENSP), however only 7% has been completed. We recommend that the EIS clearly state if FWS recommendations for adaptive management and conservation for migratory birds and tree clearing will be followed. Any deviations from these recommendations should be clearly stated and addressed. EPA urges FERC require the applicant to adhere to all FWS, PFBC and NJDEP-ENSP recommendations and conditions. We recommend avoidance and minimization measures that have been committed to be captured in the Record of Decision and Certificate.

9) Cultural Resources

PennEast has initiated Section 106 consultation under the National Historic Preservation Act (NHPA) with the State Historic Preservation Offices (SHPOs) in Pennsylvania and New Jersey and ongoing communication and coordination has occurred since August 2014. Although cultural resources will be impacted by the proposed pipeline project, the SHPO's involvement ensures that resources will be protected and preserved appropriately within the bounds of Section 106 of the NHPA. EPA strongly supports and agrees with the recommendations provided on pages 5-14 and 5-15 of the DEIS which (in summary) states, "...we are recommending that

PennEast not begin construction until additional required surveys are completed, survey reports and treatment plans (if necessary) have been reviewed by the consulting parties, and we provide written notification to proceed. The studies and impact avoidance, minimization, and measures proposed by PennEast, and our recommendation, would ensure that any adverse effects on cultural resources would be appropriately mitigated.” If this recommendation is followed, EPA would be assured that cultural resources would be addressed appropriately. The following comments emphasize the need to adhere to this recommendation and to ensure that all required surveys/reports are completed and approved by the agency authority (Pennsylvania and New Jersey SHPOs) prior to pipeline commencement.

EPA appreciates that the EIS Table 4.9.1-1 (Correspondence with the Pennsylvania SHPO) provides a list of correspondence exchanged between PennEast and SHPO which includes a brief summary of the letter. Although cumbersome and costly to include the actual letters exchanged in an Appendix, it would be helpful to have the opportunity to read the letters or to have a more in depth summary of the actions proposed and provided in Table 4.9.1-1. For instance the PA SHPO, in a letter dated April 14, 2016, provided comments on PennEast’s archaeological survey addendum report, but Table 4.9.1-1 does not list or summarize the SHPO’s comments. If the letters cannot be included in an Appendix, please provide a summary of the comments provided by resource agencies to allow better understanding of the potential impacts and mitigation proposed. In addition, please note that the following recommendation found on pages 5-14 is in line with this comment – “We are recommending the PennEast provide documentation of Pennsylvania and New Jersey SHPOs’ concurrence with PennEast’s proposed avoidance, resource identification/recommendations, updated documentation, avoidance plans, and evaluation reports/treatment plans, when necessary.”

10) Conservation and Visual

The proposed action would cross several lands that are part of conservation programs. FERC has not provided an appropriate level of analysis regarding the impacts of constructing and operating the PennEast Pipeline on land preserved by Non-Governmental Organizations (NGO) in New Jersey, such as the Nature Conservancy, the New Jersey Conservation Foundation, or the Hunterdon Land Trust Alliance. The long-term effects that impacts to NGO land’s may have on the future of conserving land in New Jersey was also not discussed. Land Conservation NGO’s are dependent on donations of land and funds to preserve large portions of New Jersey for habitat, recreation, agriculture and other uses. The NGO’s provide direct economic benefit to their employees, and by protecting forests and greenfields, they provide ecological services (such as carbon storage, nutrient cycling, water and air purification, and traditional resource uses and spirituality) that might not otherwise be affordable to the state. While the DEIS discussed several studies that show residential areas should not lose value due to a pipeline easement, the document has no evidence that the condemnation and industrial use of conserved land will not deter land or money donations to NGO’s stewarding these land tracts, and therefore impact New Jersey’s open space.

The EIS also states that some lands PennEast would acquire for pipeline installation and operation would lose conservation status. PennEast would acquire the development rights to install and maintain the pipeline within the permanent easement area. Although the EIS asserts that the majority of the land area subject to conservation easement restrictions would retain its conservation restriction outside of the PennEast ROW, the amount of lands enrolled or affected is unknown nor is the amount of land that will lose their status stated. We recommend that

FERC specify if entire parcels may become ineligible or if only portions under ROW easements will be ineligible. It is unknown what restoration measures are being proposed for these areas. We recommend considering all of this information prior to making the determination that impacts on these conserved lands will not be significantly impacted.

11) Drinking Water, Public Health, and Environmental Justice

The DEIS does not identify Source Water Protection Areas (SWPAs) as delineated by drinking water utilities in state-approved Source Water Protection Plans. These determinations are based on contaminant time-of-travel, and may include areas more than 3 miles upstream of potable surface water intakes. PennEast identified two public supply wells near the proposed pipeline in Alexandria Township in Hunterdon County, New Jersey, and identified three Wellhead Protection Areas (WHPAs) areas crossed by the proposed pipeline. The pipeline's proposed path is within 5 miles of 122 WHPAs; 120 of these WHPAs are located in New Jersey and known to PennEast through the publicly available information. WHPAs in Pennsylvania are not publicly available information, however the DEIS states there are two WHPAs in Pennsylvania within a 5-mile proximity. PennEast should work directly with state drinking water agencies and/or drinking water utilities to identify any areas where the proposed project crosses a SWPA and to locate WHPAs in proximity to, or intersecting with, the proposed pipeline route in Pennsylvania. We recommend that route deviations to avoid SWPAs and reducing proximity to wells and WHPAs be considered in order to minimize potential impacts on drinking water resources. The rationale or justification for eliminating or not adopting routes deviations should be provided. In some cases, the screening of these alternatives may reveal the potential for increased overall environmental impacts, some may need to be retained for detailed analysis.

The Environmental Justice (EJ) assessment should consider all of the impacts and benefits that may occur during the project in the study area or adjacent to it, that may reasonably be anticipated to have an impact upon minority and/or low-income populations. The localization, proximity, and magnitude of those impact needs to be taken into account. FERC should conduct meaningful engagement of EJ communities. The DEIS should analyze if a disproportionate number of EJ communities have construction-related displacements, construction-related truck traffic, potential surface water sedimentation in areas that are used for subsistence fishing, etc. We recommend a different methodology be used to establish minority population benchmarks in this assessment, in order to identify all at-risk populations as accurately and inclusively as possible. We suggest re-evaluating the EJ impact assessment using more protective thresholds.

In addition to considering EJ, we recommend that FERC consider children's health under Executive Order 13045 and consider whether it would be useful to employ elements of a health impact assessment to help define the services or interventions required to help to prevent or mitigate health problems associated to this type of project, if any, and inform decision-makers of potential outcomes before the decision is made. For example, these inquiries could allow FERC to more fully consider health impacts that could result from potential arsenic mobilization into water and allow input from the public and other stakeholders, including those potentially affected by the proposed action. EPA is available for further discussion and guidance on this matter.

12) Air

The General Area Layout around the compressor station diagrammatic for both alternatives is not provided in this DEIS. The report to contain a proper layout and at the very least, a diagrammatic clearly showing all of the compressor station components and proposed piping configurations with interconnects and associated equipment clearly shown. The absence of this information prevents a thorough review of the project. Based on our review of the information that has been made available, we are unable to confirm the figures given in table 9.1-3a and we are unable to confirm that the potential to emit is a reasonable estimate of the emissions. We are also not able to confirm that the project does not trigger New Source Review requirements.

We expect that a compressor station of this size may contain additional types of process units performing different functions that do not appear to be mentioned or considered in the EIS. For example, we recommend that emissions from the operation of all equipment be included and aggregated, such as emergency flares. The report mentions various tanks but does not specify size or clearly state the tanks' functions. One of the tanks specified is a condensation tank. This tank might imply that the facility is also using dehydrators. This further implies that flash emissions should be included in the emissions calculations. The proposed interconnects have line heaters which imply that there is also pressure reducing units located at interconnects, which have associated fugitive emissions. We also recommend that emissions from launching and receiving operations be presented; emissions associated with interconnects may also need to be aggregated with compressor emissions.

The EIS does not provide sufficient air data, calculations and explanation for the basis on which determinations were made. Although the EIS estimated operating emissions for the Kidder CS, there is no data, calculation and assumptions that demonstrate how the operating emissions were determined. There is no basis given for the determination of 48 startups and shutdowns per year. Additionally, there is no data, calculation and assumptions that demonstrate how the emissions are offset by operational time between each shutdown and the next start up. EPA requests that FERC explain and demonstrate how this is possible, and provide data and calculations used to estimate operational emissions.

The evaluation to determine the feasibility of installing electric motor driven compressor units at the Kidder CS is deficient with regards to the comparison done with the PJM regional grid system mix by fuel to the compressor emissions provided in Table 4.10.1-7. The evaluation used 2010 emissions from the PJM system mix to adjust the 2004 rates. It is noted that the 2004 rates should be adjusted to the most recent PJM rates for 2016 which have been reduced significantly. For example the percent reduction in NOx emissions rates for the PJM mix from 2010 to 2016 is 47.5 percent. This makes the results in this DEIS significantly skewed. EPA recommends the analysis be done as a cost benefit analysis similar to a Best Available Control Technology analysis as discussed in federal regulations at 40 CFR 52.21, because it includes both capital costs and operational costs.

The EIS discusses the possibility of using waste heat electric generation in conjunction with gas fired turbines. The discussion seems to gloss over the feasibility of this technology in this particular situation and makes some contradictory statements to come to a conclusion that the use of waste heat generation is not viable for the proposed Kidder CS. The analysis presented is insufficient to support this conclusion. A more robust and detailed analysis may be necessary. *Contradictory statements should be clarified in the EIS*

We recommend that the DEIS address the aggregation of emissions sources in the scope of this project. There is a policy followed by the Pennsylvania Department of Environmental Protection (PADEP) to analyze whether or not air emissions from wells, compressor stations, interconnects and processing plants should be aggregated as one emissions source for the purposes of determining whether these aggregated emissions should be subject to Title V permit requirements. This method of analysis is based on PADEP's guidance entitled Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries, Document Number 270-0810-006, effective October 6, 2012 and is informed by EPA's policy regarding a 3-pronged approach toward analyzing whether or not emission units can be considered as functioning as a unit. The guidance states that air emissions sources may be treated as a single source for permitting purposes if they meet the applicable two or three part regulatory test. This is discussed in more detail in the guidance. There are other emissions facilities downstream of the Kidder CS that may be considered as functioning along with the proposed compressor station as a unit: the compressed gas transmission pipeline and the next proposed interconnect in Northampton Co. An example of such an analysis is illustrated in a review memo for the general plan approval for NFG Midstream Claremont east station Permit number GP5-42-243A. In addition, there may be additional existing compressor stations that may be considered as acting as a unit with this proposed station. The facility must determine if this is the case and include it in the analysis if appropriate. We recommend that the project be analyzed to determine if any of the upstream and downstream facilities could be considered operating as a unit in conjunction with the proposed compressor station.

13) Cumulative Impacts

EPA is concerned that the temporal and geographic scope of the study is narrow, which has led to a limited analysis of cumulative impacts. Defining the geographic and temporal framework is the starting point of a cumulative impacts analysis.

Page 4-273 defines the project's region of influence, which is the area for which the project could contribute to cumulative impacts. For example it appears that the region of influence used for geology, soils, land use, residential areas, visual resource, air quality and noise would be within 0.25 miles of project construction were considered. Long-term noise impacts within the same NSAs as the Kidder CS. Waterbody and wetland crossings, groundwater, vegetation and wildlife within the same sub-watersheds crossed by the project. Longer-term air quality cumulative impacts were considered within the Air Quality Control Region (AQCR) crossed by the Kidder CS.

Cumulative impact analysis included recently completed, ongoing, and planned projects in the project area, which appears to exclude past and reasonably foreseeable actions. Considering past, present and reasonably foreseeable actions is important as cumulative impacts can occur to resources even if impacts do not occur concurrently. Though construction impacts can be short-termed, there are likely prolonged impacts for instance associated with forest fragmentation, invasive species, etc. Even projects that do not overlap geographically can contribute to cumulative impacts to streams, wetlands, forests, habitat, and other resources. We recommend FERC consider expanding the cumulative impact study beyond what is currently considered in the DEIS. It is important to analyze the trends in resources, to identify if there have been repeated impacts or degradation of the resources. A thorough analysis of impacts could help guide the selection or placement of appropriate mitigation for PennEast impacts or highlight

areas where additional avoidance and minimization may be warranted. EPA would be interested in discussing the selection of a more appropriate and inclusive boundary with FERC.

EPA is concerned about cumulative impacts to aquatic resources, groundwater, and water quality. We recommend that the cumulative impact analysis of surface and groundwater be expanded, including cumulative impacts to water quality, headwater streams, high quality and/or sensitive aquatic resources. Aquatic resources have the potential to be cumulatively impacted by many factors, including waterbody crossings, change in recharge patterns, clearing, blasting, and water withdraws for hydrostatic testing. It may be prudent to consider these impacts in combination with other past, present and reasonably foreseeable actions at the watershed scale.

EPA recommends that the EIS study look at recent pipeline construction project to evaluate "lessons learned" and impacts, which could include construction, operation and implementation of mitigation. This information can be incorporated into direct, secondary and cumulative impact analysis, and provide recommendation for BMPS and other mitigative approaches for impacts. We recommend that FERC present and evaluate where failures during construction and operation of pipelines have occurred (for instance that lead to erosion and sediment control issues, turbidity in streams, impact to surface or ground water supply, introduction of invasive species). Consider if work stoppages were/will be needed; consider contractor rewards for exemplary work and penalties for noncompliance with best practices.

EPA is concerned by the potential cumulative impact which could result from the preferred alternative, Marcellus Shale development, and other FERC-regulated and non-jurisdictional actions. Natural gas, both FERC jurisdictional and non-jurisdictional, electric generation and transmission projects, transportation projects, and commercial and large-scale residential developments were identified as types of actions that would potentially cause a cumulative impact when considered with the PennEast Pipeline. Page 4-274 states that construction of the PennEast Pipeline would potentially increase demand for natural gas, which could increase Marcellus Shale natural gas extraction and therefore increase the negative environmental impacts associated with such development. As this is noted in the EIS, we recommend it be incorporated into the cumulative impact analysis.

In areas where rapid natural gas development have the potential for cumulative impacts to occur, EPA recommends that a more detailed cumulative impact analysis in this area be conducted. A more detailed consideration of cumulative impacts may include a more detailed breakdown of past, present, and reasonably foreseeable actions, consideration of additional avoidance and minimization efforts, as well as looking for additional opportunities to collocate. Presenting the collocation rate by county or watershed may be a useful way to begin considering avoidance and minimization efforts in areas with cumulative impact potential.

The cumulative impact analysis relies on possible state and federal measures, restrictions and requirements for other past, present and reasonably foreseeable actions to minimize the potential for long-term resource losses, such as for aquatic resources, RTE, and land use. The EIS also relies on the SPCC plans, E&SCP, project BMPs, and FERC Plans and Procedures to minimize and mitigate for resource-specific cumulative impacts. We recommend that the cumulative impact analysis consider potential cumulative impacts regardless of the various prepared or required plans to be implemented by the project or other actions, or permits or regulatory thresholds. While it may be appropriate to recognize or consider the relation to these, please

keep in mind that this is not sufficient to determine potential effects of past, current and reasonably foreseeable future activities to resources or if/ how project impacts can be mitigated.

14) Climate Change

The discussion on climate change in the DEIS mentions the 2014 Draft CEQ Climate Change Guidance. Please note that since the release of the DEIS, CEQ released its final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in the National Environmental Policy Act Reviews (CEQ guidance). We recommend that FERC update this reference in the Final EIS.

Section 4.12.4.8, Climate Change, concludes that projected climate change effects in the Project area are not anticipated to exacerbate any other environmental impacts from the Project during its expected lifetime. EPA is concerned that this conclusion is not well supported by analysis or discussed in the EIS. Consistent with the CEQ guidance, we recommend that the EIS describe potential changes to the affected environment that may result from climate change. Including future climate scenarios, such as those provided by the USGCRP's National Climate Assessment,¹ in the EIS would help decision makers and the public consider whether the environmental impacts of the alternatives would be exacerbated by climate change. If impacts may be exacerbated by climate change, additional mitigation measures may be warranted. Use of NCA or other peer reviewed climate scenarios can inform alternatives analysis and possible changes to the proposal which may improve resilience and preparedness for climate change.

The CEQ guidance recommends that agencies quantify carbon sequestration implications, and outlines special considerations for agencies analyzing biogenic carbon dioxide sources and carbon stocks associated with resource management. Mitigation for these losses is also recommended. As the PennEast Project will remove 633 acres of forest, and permanently release the carbon stocks therein, EPA recommends that FERC analyze and consider mitigation (e.g. forest restoration) to make up for these carbon stock losses.

As the EIS notes on page 4-285, EPA has recommended that FERC also estimate GHG emissions from the development and production of natural gas being transported through the proposed pipeline, as well as estimate the GHG emissions associated with the end use of the gas. We note that the DEIS estimated that the potential end-use GHG emissions would be 23.5 million tons per year. Although the end use was included in the DEIS, the analysis would be improved by including emissions resulting from the development and production of natural gas being transported through the proposed pipeline.,

It is not clear if the operational phase GHG emission estimates include methane leakage. We recommend that FERC estimate expected GHG emissions from leakage and consider potential BMPs to reduce leakage of methane associated with operation of the expansion facilities. EPA has compiled useful information on technologies and practices that can help reduce methane emissions from natural gas systems, including specific information regarding emission reduction options for natural gas transmission operations. This information may be found at <http://www3.epa.gov/gasstar/methaneemissions/index.html>.

¹ <http://nca2014.globalchange.gov/>

We recommend that FERC consider adding similar analysis as was presented in the recent Atlantic Sunrise DEIS, Section 4.13.3.1, which estimated the number of wells permitted within 10 miles of the project, the rate that new wells could be added, and the number of wells required to provide quantities of gas to supply the project. These estimates do not necessarily have to include induced or indirect natural gas development or production, such estimations could be included more appropriately in the secondary effects analysis. We recommend the EIS estimate the number of wells required to supply the pipeline and the potential impact from these wells. This was done for land disturbance in Atlantic Sunrise, which estimated 9 acres per well pad. Impacts to other resources, including GHG estimates for climate change, can also be estimated.

EPA has recommended that FERC consider additional alternatives beyond the applicant's preferred alternative. Should additional alternatives be retained for detailed study, we recommend that the EIS estimate the GHG emissions potentially caused by these alternatives. These emissions levels can serve as a basis for comparison of the alternatives with respect to GHG impacts. There are a considerable resources, tools and methodologies to estimate project contribution to climate change. We strongly recommend that these be utilized in the EIS. Example tools for estimating and quantifying GHG emissions can be found on CEQ's NEPA.gov website.

Document Content(s)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

JUN 13 2016

REPLY TO THE ATTENTION OF:

E-19J

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First St., N.E., Room 1A
Washington, DC 20426

Re: FERC Draft Environmental Impact Statement (DEIS) for the Columbia Gas Transmission – Leach Xpress Pipeline Project and Columbia Gulf Transmission – Rayne Xpress Expansion Project, (FERC Docket Nos. CP15-514-000, CP15-539-000, Respectively) (CEQ No. 20160089)

Dear Ms. Bose:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the United States Environmental Protection Agency (EPA) has completed its review of the Federal Energy Regulatory Commission's (FERC) draft environmental impact statement (DEIS) for the Leach Xpress Pipeline (LX) and Rayne Xpress Expansion (RXE) Projects (Projects), proposed by Columbia Gas Transmission (Columbia Gas) and Columbia Gulf Transmission (Columbia Gulf) (Projects Proponents), respectively.

Projects Proponents request FERC authorization to construct, abandon in-place, replace, and/or operate certain interstate natural gas pipeline facilities in Ohio, Pennsylvania, West Virginia, and Kentucky. Columbia Gas proposes to transport/deliver "about" 1.5 million dekatherms (Dth/d) of natural gas per day of firm transportation service to natural gas consumers served by Columbia Gas pipeline systems. Columbia Gulf requests authorization to add new compression and provide 621 dekatherms per day of firm transportation on Columbia Gulf's system.

EPA has rated the DEIS EC-2 Environmental Concerns, Insufficient Information. The EC-2 rating indicates that we have concerns that the document does not contain enough information to fully assess the environmental impacts that should be avoided in order to fully protect the environment. EPA has identified several potential reasonably available alternatives which might reduce the environmental impacts of the action. See the enclosed Summary of Rating Definitions for a detailed explanations of EPA's ratings.

EPA concerns are primarily due to insufficient information regarding: 1) identification and evaluation of alternatives, 2) avoidance of and minimization of impacts to streams and wetlands, 3) impacts to upland forest, core forest and associated wildlife, 3) identification of environmental justice populations, 4) potential noise impacts on noise-sensitive areas (NSAs), such as residences, 5) greenhouse gas emissions and climate change, and 6) mitigation. In addition, the

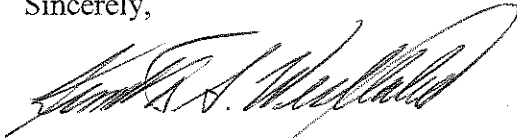
DEIS does not include: 1) a wetland/stream mitigation plan, 2) upland/core forest mitigation plan, nor 3) Columbia Gas's and Columbia Gulf's emergency response plans. Enclosed are our detailed comments, which include recommendations for additional information to include in the Final EIS (FEIS). These comments are consolidated from reviews done by EPA regional offices that cover the affected states.

When FERC submits the FEIS to EPA headquarters, also send paper copies and CDs of the Final EIS to EPA Regional Offices as follows:

- EPA Region 5 (Chicago): one (1) paper copy and three (3) sets of CDs,
- EPA Region 4 (Atlanta): one (1) set of CDs, and
- EPA Region 3 (Philadelphia): one (1) set of CDs.

If you or your staff have any questions or concerns, I can be reached at 312-886-2910, or contact Virginia Laszewski of my staff at laszewski.virginia@epa.gov or 312-886-7501.

Sincerely,



Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Enforcement and Compliance Assurance

Enclosures: Summary of Rating Definitions
EPA Detailed Comments

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SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

U. S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT
STATEMENT FOR THE LEACH XPRESS PIPELINE (LX) PROJECT AND RAYNE
EXPRESS EXPANSION (RXE) PROJECT, MICHIGAN, OHIO, PENNSYLVANIA, WEST
VIRGINIA, KENTUCKY, APRIL 6, 2016 (CEQ NO. 20160089)

Columbia Gas Transmission (Columbia Gas and Columbia Gulf Transmission (Columbia Gulf) (Projects Proponents) propose to construct and operate the following natural gas facilities/components (Projects):

- Columbia Gas – Leach XPress Pipeline (LX): 133 miles of new 30- and 36-inch-diameter natural gas pipeline, 27 miles of 36-inch-diameter looping pipeline, 28 miles of 20-inch-diameter pipeline to be abandoned in place, 3 new compressor stations, and appurtenant facilities including 3 existing compressor station modifications, 4 new and 1 modified regulator stations, 13 pig launcher and receiver facilities, 9 mainline valves and 4 odorization facilities in Ohio, West Virginia and Pennsylvania; and
- Columbia Gulf – Rayne Xpress Expansion (RXE): two new compressor stations, and modify an existing measurement and regulation station in Kentucky.

The majority of the following comments follow the numbered topic order as presented in the Draft Environmental Impact Statement (DEIS).

Executive Summary

Proposed Action (Page ES-1)

Recommendation: EPA recommends the Executive Summary include a more detailed description of the Leach Xpress Pipeline (LX) Project. We recommend the summary include the lengths of pipeline construction and abandonment.

Vegetation, Wildlife, Fisheries, and Federally Listed and State-Sensitive Species (Pages ES-6 and ES-7)

The DEIS (Page ES-7) states: “*WVDEP recommended that water withdrawn from the Ohio River either be discharged back into the Ohio River or be treated with a WVDEP-recommended biocide prior to discharge.*” Water discharged from hydrostatic testing should not be treated with certain biocides and could impact fish and aquatic vegetation.

Recommendation: We recommend the FEIS clarify whether a biocide will be used for hydrostatic testing. If a biocide will be used, then further describe it in Section 2.3.1.7, in the Hydrostatic Testing process.

1.0 Introduction

1.1 Project Purpose and Need (Page 1.2)

The description of the project purpose is based on the information provided by the Project Proponents, Columbia Gas and Columbia Gulf. The purpose is to transport natural gas to meet market demand. Specific dekatherm capacities are provided, although it is unclear how these

units were determined or generated. In the absence of this type of supporting documentation, it is unclear if the stated purpose and need is too narrow, thereby limiting the available range of alternatives.

Recommendation: EPA suggests that a broader purpose and need statement be developed which would allow for a broader range of alternatives to be considered in the EIS.

Binding precedent agreements support the LX Project and Rayne Express Expansion (RXE) Project, which are able to be terminated if certain conditions are not met, including regulatory approvals.

Recommendation: Please clarify if these agreements are duplicative of other agreements entered into by the Project Proponents for other pipeline projects in this region.

1.2 Purpose and Scope of the EIS (Pages 1-2 and 1-3)

The purpose and scope of the EIS includes describing and evaluating reasonable alternatives that would avoid or have substantially less adverse effects on the environment while still meeting project objectives.

Recommendation: EPA recommends expanding the alternatives analysis and consider our recommendations regarding alternatives below under "Alternatives."

1.4 Non-Jurisdictional Facilities (Pages 1-11 - 1-13)

The DEIS (Page 1-11) states: *"Non-jurisdictional facilities necessary to operate the LX Project are anticipated to include two new Point of Receipt (POR) facilities located near Majorsville, West Virginia and Clarington, Ohio, as well as the addition of new power supplies and other utilities at the new compressor stations [CS] and new regulator stations (RS). . . . Non-jurisdictional facilities necessary to operate the RXE Project are limited to the addition of new power and water supply at the Grayson CS and Means CS."*

The DEIS (Page 1-13) states: *"Though construction of the non-jurisdictional electrical facilities may overlap with the construction of the projects, construction of these facilities would result in negligible environmental impacts due to sufficient extension of the existing power service to the proposed facilities; therefore, these facilities are not included in the cumulative impacts analysis in section 4.13."* The DEIS does not include the supporting analysis and documentation that demonstrates these facilities would result in negligible environmental impacts.

Recommendations: EPA recommends the impacts associated with the construction and operation of the new electrical facilities necessary to supply power to operate the LX and RXE Projects be evaluated in the EIS. Explain how connection locations and sources were determined. At a minimum, EPA suggests that these impacts be evaluated under the cumulative impact analysis.

1.5 Permits, Approvals, Consultations, and Regulatory Review (Pages 1-13 – 1-17)

Table 1.5-2 (Page 1-17), covers applicable major permits, licenses, authorizations, and clearances for the RXE Project. For the Kentucky area, the Clean Water Act Section 401 Water Quality

Certification, the status column shows the anticipated submittal as August 2015. We were unable to locate the certification or any information that such permit has been pursued.

Recommendation: EPA highly recommends that the Project Proponents contact Quality Certification Section of the Kentucky Division of Water prior to the submission of the application. The State of Kentucky has guidelines for stream relocation/mitigation.

2.0 Projects Description

2.1 Proposed Facilities

2.1.2.1 New Aboveground Facilities (Pages 2-5 to 2.10)

Table 2.1.2-1 Above Ground Facilities for the LX Project, and

Table 2.1.2-2 Above Ground Facilities for the RXE Project

Recommendation: Include acres associated with each aboveground facility in Tables 2.1.2-1 and Table 2.1.2-2.

2.3.2 Special Construction Techniques (Pages 2-23 – 2-30)

2.3.2.6 Road Crossings (Page 2-29)

Recommendation: We recommend Section 2.3.2.6 of the FEIS discuss the number of roads that will be crossed, the amount of material that will be waste, how waste will be shipped out, and if any of the road material will be recycled.

2.6 Operation, Maintenance, and Safety Controls (Pages 2-34 – 2-35)

2.6.1 Permanent Safety Controls (Page 2-34)

Recommendation: We recommend Section 2.6.1 of the FEIS discuss how long the permanent erosion controls will be maintained and the frequency of maintenance. Sedimentation from erosion has a large impact on surface water; these controls have the ability to reduce these long term impacts.

3.0 Alternatives (Pages 3-1 – 3-18)

The DEIS (Page 3-1) states: *“It is important to note that not all conceivable alternatives are technically feasible or practical. Some alternatives may be incapable of being implemented due to limits on existing technologies, constraints of system capacities, or logistical considerations, while others may be impractical because sites are unavailable or cannot be developed for the proposed use.”* EPA agrees; however, it is still necessary for the alternatives analysis to present the alternatives considered as well as the rationale for each alternative’s dismissal from further consideration.

Recommendation: Please include the various alternatives to the proposed action that may have been considered but were dismissed from further consideration, including alternatives that were considered but dismissed during FERC’s pre-filing process. Provide the rationale for those alternatives dismissed from further consideration.

The DEIS (Page 3-1) continues: *“Additionally, it is necessary to recognize the environmental advantages and disadvantages of the proposed action in order to focus the analysis on reasonable alternatives with the potential to provide a significant environmental advantage over the LX and RXE Projects.”*

Recommendations:

- Clarify how the potential to provide a significant environmental advantage is determined and if this determination is made within the context of the NEPA document.
- State/explain why it is assumed that significant environmental advantages over the proposed action do not occur.
- Present the differences in impacts between alternatives, particularly for alternatives that may have similar impacts, alongside those of the applicant's proposed/preferred alternative's impacts.
- Include, if applicable, an expanded alternatives analysis of additional alternatives that may have been prematurely dismissed from consideration.
- We suggest that the distinction be made between route modifications made during the FERS's pre-filing process and alternatives which go beyond modifications at the landowner level and may be at the landscape scale or system scale.
- Please clarify how the start and end point locations for the proposed project were determined. Consider if system alternatives that utilize different start or end points may meet the project purpose and need.
- If screening criteria were used in evaluating the system alternatives present, please detail those in the FEIS.
- If different screening criteria were used to evaluate different system alternatives, please clarify these discrepancies.

3.2 System Alternatives (Pages 3-2 - 3-6)

3.2.1.2 Expansion of Existing Pipeline System (Pages 3-3 – 3-5)

An expansion of Columbia's existing T- and SM-80 systems is mentioned in Section 3.2.1.2. It appears to be the only system alternative identified. It is not clear why the T- and SM-80 systems were specifically identified for possible expansion.

Recommendations: We recommend the FEIS clarify how and why the T- and SM-80 systems were identified for consideration as a possible LX system alternative. We also recommend the FEIS identify whether other systems were also considered. Please provide a map that clearly shows the location of the T- and SM-80 systems, Line BM-111 and the R-System. Describe the existing diameter, lengths, etc. of these lines/systems.

DEIS Page 3-5 notes that additional compression would be required for the T- and SM-80 expansion alternative, including 12,600 horsepower (hp) expansion of the Smithfield Compressor Station (CS), 20,200 hp at the Clendenin CS, an unspecified amount at the Crawford CS, and 14,100 of new compression along the R-System.

Recommendation: Please include the amount of compression needed at the Crawford CS.

The DEIS (Page 3-5) states that the T- and SM-80 expansion system alternative would be 148.5 miles longer than the proposed route and increase land disturbance. However, expansions of existing facilities may require less additional land disturbance to add hp, and other associated connecting infrastructure than the proposed project.

Recommendations: Please clarify the length of pipeline looping that is included in the T- and SM-80 expansion alternative, as well as the percentage of the route that is greenfield, percentage collocated, and percentage that occurs on/within existing pipeline right of way. Clarify whether these estimates are based on efforts to avoid and minimize adverse impacts, as was done for the proposed/preferred alternative.

Potential Additional Viable Alternatives

There may be viable alternatives to the applicant's proposed/preferred alternative that have not been considered, evaluated or presented in the LX and RXE DEIS. For example, the applicant has other pipeline projects in the same area that are under FERC consideration. One of these projects is the Mountaineer Xpress Pipeline (MXP), which connects to LX. The recently released final Resource Reports for MXP include several systems and legacy alternatives.

Recommendations: Include relevant portions of the analysis presented in MXP Resource Report 10 Alternatives (RR10) in the LX alternatives analysis. Identify, consider and include other similar legacy alternatives specific to LX.

The MXP RR10 also presents an LX alternative and a MXP without LX alternative. It appears that if LX was not constructed, only 26 miles and 25,000 hp would need to be constructed in addition to the proposed MXP. It is unclear why or if the applicant has dismissed this alternative as unviable. All viable alternatives should be evaluated, particularly if there is the potential to drastically reduce the combined adverse impacts of MXP and LX.

Recommendations: These additional alternatives should also be included and presented in the EIS for LX. In particular, the MXP without LX alternative should be further evaluated in the EIS.

3.3 Major Route Alternatives and Minor Route Alternatives (Pages 3-6 – 3-10)

3.3.1 Major Route Alternatives

3.3.1.1 Alternative 1, and 3.3.1.2 Alternative 2 (Pages 3-8 – 3-10)

Recommendations: We recommend that the FEIS include maps that depict the route alternatives, including the proposed alternative, in relation to the resources impacted. This will help the reader better understand the impacts and why the proposed/preferred alternative was chosen.

3.4 Above-ground Facility Alternatives (Pages 3-17 – 3-18)

Recommendations:

- Identify the siting criteria used for aboveground facilities, including compressor stations.
- Include a map of the alternate aboveground facility locations that were considered.
- Explain how the evaluation of aerial photography, mapping, and field work mentioned on Page 3-17 informed the above-ground facility alternative analysis.
- Please provide additional information on the alternatives evaluation process.
- Identify and consider alternate locations for compressor stations beyond those included in the proposed action.
- Provide the rationale for each alternative site dismissed from further consideration.
- Explain how the amount of horsepower needed at each compressor station was determined, as well as how the spacing and distribution of stations along the proposed route was determined.

The DEIS (Page 3-18) discloses that the locations of the Lone Oak and Summerfield CSs and other associated infrastructure are environmentally preferable based on the conclusion that they would not result in any significant environmental impact and due to the lack of comments requesting for the stations to be relocated.

Recommendation: The lack of comments or concerns about station locations during FERC's pre-filing process does not eliminate the separate need for a fair alternatives analysis for above-ground facilities to take place. We recommend that an alternatives analysis for above-ground facilities, including compressor stations, be conducted and included in the FEIS.

Limited environmental information is presented in the brief discussion on the Oak Hill CS and alternative locations. It is unclear if alternate locations are viable alternatives. In addition, it is not clear why the Oak Hill CS locations were dismissed from consideration. It is stated that the alternative sites do not offer a significant environmental advantage.

Recommendations: Based on the information presented, we recommend that further consideration of the compressor station locations be evaluated and included in the FEIS. Please provide a map of the compressor station alternative locations that were considered for the Oak Hill CS.

4.0 Environmental Impact Analysis (Pages 4-1 – 4-208)

4.1 Geology

4.1.1 Existing Resources

4.1.1.1 Geologic Setting

The DEIS (Page 4-1) states: "The USDA Soil Conservation Survey (SCS) County soil survey information indicates there are restrictive layers (potentially shallow bedrock) within the upper five feet of the ground surface at both CS locations (USDA SCS, 1974 and 1983)."

Recommendation: EPA recommends the FEIS identify the specific construction measures that will be taken when shallow bedrock is encountered. For example, special consideration

should be given when discharging water or rerouting runoff due to the reduction of infiltration by this type of bedrock.

4.1.1.2 Mineral Resources (Page 4-3)

There is no description or evidence in the body of the DEIS that document the conclusions on mining and impacts stated in the report. It will help the reader better understand the conclusions if there were graphs and descriptions of how close the mines (past, present and future) are or will be located to the above ground facilities (e.g., compressor stations) and the pipelines of the Projects.

Recommendation: EPA recommends the FEIS provide a short description of the types of mines in the LX and RXE project areas that addresses how: 1) construction of the two Projects will affect the mines in close proximity, and 2) how the mines in close proximity will be affected by project construction.

4.1.1.3 Geologic Hazards (Page 4-5 – 4-9)

Seismicity (Pages 4-5 – 4-6)

The DEIS does not describe how certain seismic quakes will impact the Projects.

Recommendation: We recommend the FEIS: 1) discuss the hazardous scale for earthquakes, 2) identify the scale number that will impact the pipeline and/or above ground facilities, 3) identify the earthquakes (within the scale of impact) that have occurred in the last two decades in the Projects' area, and 4) identify the pipelines in the area that have been impacted by earthquakes.

Landslides (Pages 4-6 – 4-8)

The DEIS does not disclose the amount of acres or linear feet the Projects intersect with areas identified on the USGS Landslide Overview Maps.

Recommendation: EPA recommends the FEIS disclose the amount of acres and linear feet (or miles, if applicable) of the proposed Projects that are located within the areas identified by the USGS Landslide Overview Maps. Include a map in the FEIS that depicts the location of the proposed Projects in relation to the steep slopes in the landslide hazard areas, and identify the specific mitigation for each landslide area.

4.1.2 General Impacts and Mitigation (Pages 4-9 – 4-12)

4.1.2.2 Blasting and Rock Removal (Page 4-11)

The DEIS briefly discusses mitigation measures and operating procedures of potential blasting for the project. A better level of detail into the blasting plan for the Projects is warranted.

Recommendation: We recommend the Projects' blasting plan be included in an FEIS appendix. We recommend the blasting plan provide maps, give details regarding potential locations for blasting, and identify all the safety measures that will be undertaken.

4.2 Soils (Pages 4-13 – 4-20)

4.2.1.1 Erosion (Page 4-13)

The DEIS (page 4-13) states: *"The majority of lands within each project areas has low or moderate erosion potential."* However, the DEIS does not provide supporting documentation to support this statement.

Recommendation: EPA recommends the FEIS include additional information to support the above statement. Suggested information would include map overlays of the project and the Natural Resources Conservation Service (NRCS) maps, field surveys, and maps showing where steep slopes are in the project area.

4.2.1.5 Prime Farmland

Recommendation: We recommend this section of the FEIS mention if state agricultural agency information was included in calculating the number of historic farms or farms of statewide importance. Also, present the number of historic farms or farms of statewide importance affected by the project for each state (by county).

4.2.1.6 Contaminated Soils (Page 4-15)

The DEIS (Page 4-15) states: *"Areas of contamination, including polychlorinated biphenyl (PCB), hydrocarbon, mercury, and heavy metals, were previously identified within the Ceredo CS, Crawford CS, Benton CS, and Sugar Grove Office Area (partially located within the LX Project area near LEX milepost 128.3 in Fairfield County, Ohio). Columbia Gas performed a comprehensive site-wide assessment and soil remediation to remove or contain the sources of contamination at the Benton CS and the Sugar Grove Office Area in 2002, as well as at the Ceredo CS (May through October 2012) and the Crawford CS (February through September 2012). Although response actions have been conducted to remove PCB contamination at these compressor station sites, some sources of PCBs have been encapsulated and left in-situ in accordance with the Toxic Substances Control Act (TSCA) of 1976."*

Recommendations: Actions by the Projects' proponents concerning PCBs should be included in the appendix of the FEIS. This should include a discussion/description of what the Projects' proponents have done to clean-up PCB's and provide the details of any remedy. Correspondence with regulatory agencies regarding these remediations should also be included. For the existing compressor stations that would be upgraded as part of the proposed Project, the FEIS should explain how the proposed upgrades will or won't impact the in-situ portions of PCBs.

Additionally, the DEIS (Page 4-14) states: *"In addition to the leaking underground storage tanks, an existing source of contamination was identified as the Rhall Transportation site. This source is located 0.8 mile from MP 0.8 on the BM-111 Loop, and was evaluated in 2009 for the presence of volatile organic compounds, semi-volatile organic compounds, metals and other contaminants (WVDEP, 2014; Ohio Department of Commerce, 2014, PADEP, 2015; EPA, 2015; EPA, 2014). Although no remediation activities have been completed at this site, it is also not located within the LX Project area."*

Recommendation: EPA recommends the FEIS provide information (or citation) that confirms the LX Project will not be affected by the contaminated Rhall Transportation

site. Provide a better description of type/s and location/s of contamination at the site, identify whether the contamination is downgradient of the proposed Project, and identify what the current actions for removal of the contamination are. Correspondence with regulatory agencies regarding these remediations should also be included.

4.3 Water Resources

4.3.1.5 Contaminated Groundwater (Pages 4-26 – 4-27)

DEIS (Page 4-26) discloses there is one remaining leaking underground storage tank (LUST) site within the project area located within the workspace of Pipe Yard 36.

Recommendation: We recommend the FEIS describe this LUST site in more detail. Identify the mile post number closest to the LUST site, the state and county it is located in, and if any communication with the state environmental agencies or the landowner has been made.

4.3.2 Surface Water Resources (Pages 4-29 – 4-45)

4.3.2.1 Existing Surface Water Resources

The DEIS (Page 4-29) refers the reader to Appendix K-1 to garner information regarding the 1,083 waterbodies that would be crossed by the LX Project.

Recommendations: We recommend the FEIS include a discussion in Section 4.3.2.1 of the key information in Appendix K regarding the existing conditions of surface water in the Projects area. Also identify the specific measures that will be taken to protect surface water quality and quantity during project construction and operation. Identify whether or not a stream compensation plan is proposed for stream impacts that cannot be avoided or further minimized by using construction stream crossing best management practices (BMPs).

The DEIS is not clear if LX or RXE would require stream relocations.

Recommendations: We recommend the FEIS specifically identify whether there will be any stream relocations associated with construction of LX or RXE. If applicable, identify any areas that may no longer receive a stream's waters, discuss the consequences to resources in those areas and identify proposed mitigation, if applicable.

4.3.2 Surface Water Resources (Pages 4-29 – 4-45)

4.3.2.2 Public Watersheds (Page 4-33)

DEIS Section 4.3.2.2 addresses public water supplies, not watersheds.

Recommendations: We recommend Section 4.3.2.2 be re-titled to better identify the subject of discussion (i.e., public water supply). Add a section titled: "Watersheds" and provide figures/maps that clearly depict the major watersheds and the 8-digit hydrologic unit code (HUC) watershed and the proposed locations for the components of the LX and RXE Projects.

Table 4.3.3-1 Watersheds Crossed by the LX Project (Pages 4-30 – 4-31)

Table 4.3.2-2 Waterbodies Affected by the RXE Project (Page 4-32)

Recommendation: Watershed information for RXE is not included in either of the above tables. EPA recommends either Table 4.3.3-1 be re-titled and include watershed information for the RXE project, or Table 4.3.2-2 be re-titled and include RXE watershed information as well as the waterbodies information.

In addition, it appears that the DEIS does not include the source of the waterbody identification numbers (IDs) listed in Table 4.3.2-2. We were unsuccessful on locating/matching the stream waterbody IDs used by KY DEP or the USGS against the IDs used in the DEIS in order to attest stream classification.

Recommendation: We recommend the FEIS identify the source of the stream identification numbers in Table 4.3.2-2. Also, consider including the stream ID source information as a footnote in Table 4.3.2-2.

4.3.2.4 Sensitive Waterbodies

Flood Hazard Zones (Pages 4-38 – 4-39)

Table 4.3.2-5 – Areas Within the 100-year Floodplain Crossed by the LX Project (Page 4-39)

Recommendations: In order to get a better understanding of the amount and location of flood areas that the LX and RXE Projects will be located in, we recommend Table 4.3.2-5 be modified to include the number of acres within each designated area/segment as identified in the table by beginning and ending mile post numbers (MPs).

The increase of impervious area during construction and operation of the project will increase flooding potentially impacting areas surrounding the project.

Recommendation: EPA recommends the FEIS discuss how LX and RXE will reduce the potential for flooding areas surrounding the projects.

DEIS (Page 4-38) states: *“The Grayson CS associated with the RXE Project occurs within the 100-year floodplain, and the Means CS does not. Columbia Gas’ and Columbia Gulf’s ECSs outline measures to protect from flooding during construction, and all structures would be constructed in accordance with federal and state building codes.”*

Recommendation: The DEIS is not clear if flood proofing measures, such as elevation or dry flood-proofing, were considered for the Grayson compressor station’s long term operation. We recommend the FEIS identify whether such measures are being considered. FEMA offers excellent resources regarding flood mitigation at: <http://www.fema.gov>.

4.3.2.6 Hydrostatic Testing (Pages 4-40 – 4-42)

“Columbia Gas proposes to withdraw approximately 42 million gallons of test water from four local surface waters for pipeline facilities and approximately 1 million gallons of test water from municipal and possible existing water sources for aboveground facilities, as depicted in table 4.3.2-6 and table 4.3.2-7. The RXE Project would use municipal sources for water withdrawals.

Columbia Gas and Columbia Gulf would be required to obtain permits from the municipalities for water use prior to withdrawing the water. These permits would confirm that the municipalities have required capacity to supply Columbia Gas with hydrostatic test waters." (Page 4-40)

Recommendation: We recommend the FEIS mention why hydrostatic testing is the preferred method of testing pressure and why other, non-resource intensive methods are not being proposed, such as pneumatic pressure testing.

The DEIS does not disclose whether the pipes need to be cleaned prior to (pre-cleaning) hydrostatic testing.

Recommendation: We recommend the FEIS identify whether pre-cleaning will take place and what it entails. How much water does it use? Is this in addition to the amount of water used for the actual hydrostatic test? What chemicals, if any, are used in the pre-cleaning process?

Recommendation: We recommend that the Final EIS explain what happens inside the pipe after hydrostatic test water has been discharged. Is the pipe dried? If so, are any chemicals used in the pipe drying process? How will pre-cleaning and hydrostatic test waters be treated, if necessary, prior to discharge?

Table 4.3.2-6 Proposed Hydrostatic Test Water Source and Discharge Locations for Pipeline Facilities (Page 4-41)

Table 4.3.2-7 Proposed Hydrostatic Test Water Source and Discharge Locations for Above-ground Facilities (Page 4-42)

Recommendations: We recommend *Table 4.3.2-6* and *Table 4.3.2-7* include additional categories to identify: 1) daily water flow amounts for each water intake, 2) where water will be recycled from one segment to another, and 3) the amount of water that will be recycled in each segment. Include the water source and discharge locations for the Grayson and Means Compressor Stations hydrostatic test. Also, in the footnotes to *Table 4.3.2-7* explain what is meant by "Various" when used under the column headings titled: "Source" and "On-Site Discharge Location (MP)."

The DEIS does not provide evidence confirming that the water use capacity requirements can be met by the municipalities during hydrostatic testing activities.

Recommendation: Where project proponents propose to use municipal sources of water, we recommend the FEIS provide documentation that each municipality identified as potential water providers has the capacity to furnish the amounts proposed.

The DEIS (Page 4-45) states: "As per recommendations from WVDEP, water withdrawn from the Ohio River would either discharge back into the Ohio River or undergo treatment with a

WVDEP-recommended biocide prior to discharge. Excluding potential WVDEP-recommended biocides, additives would not be added to the hydrostatic test water."

Recommendation: EPA recommends the FEIS explain the type and concentrations of biocides that may be used in hydrostatic testing water discharge.

The DEIS does not address the specific requirements for the disposal of test water associated with the various components of the proposed Projects.

Recommendation: We recommend the FEIS address specific requirements for the disposal of all test waters.

Recommendation: EPA also recommends the FEIS identify all BMPs that will be used for: 1) water withdrawal in hydrostatic testing to prevent the entrainment of fish and other aquatic organisms, and 2) to dissipate waters after testing to prevent/minimize erosion and sediment movement.

4.3.2.7 General Impacts and Mitigation (Pages 4-42 – 4-45)

Section 4.3.2.7 of the DEIS identifies BMPs proposed by Columbia Gas, under stream bank erosion, turbidity and sedimentation; it is not clear if these practices also apply to Columbia Gulf's RXE Project.

Recommendation: EPA recommends the FEIS identify if RXE will be covered by the Columbia Gas practices or any other BMPs. If not, the FEIS should discuss why these practices do not pertain to RXE and identify those practices that pertain to RXE.

4.4 Wetlands

4.4.2 Wetland Construction Procedures

Section 4.4.2 (Page 4-47) states: *"A total of 301 wetlands would be affected by the LX Project, described in appendix L. In Ohio, the LX Project, including aboveground facilities, access roads, and contractor yards, would cross 257 wetlands, including 20 forested, 21 scrub-shrub, and 216 emergent wetlands. In West Virginia, the LX Project would cross 32 wetlands, including 6 forested, 1 scrub-shrub, and 32 emergent wetlands. The LX Project would cross five emergent wetlands in Pennsylvania. In the RXE Project area, Columbia Gulf delineated one emergent wetland within the 64-acre survey area at the Means CS site . . . no wetlands were delineated at the Grayson CS site."*

Recommendation: The above DEIS text identifies the total number of wetland crossing in West Virginia as 32; however, the number of crossings of the various types of wetlands in West Virginia add up to 39. We recommend the FEIS clarify this discrepancy.

4.4.3 General Impacts and Mitigation

Section 4.4.3 (Page 4-48) discloses that construction of LX would affect a total of 15.2 acres of wetlands. This includes about 1.4 acres of forested wetlands, 0.8 acre of scrub-shrub wetlands, and 12.9 acres of emergent wetlands. No wetland impacts are expected for the RXE Project.

DEIS Section 1.2.3 U.S. Army Corps of Engineers Purpose and Role (Page 1-4) identifies that Columbia Gas believes the proposed project meets the criteria of the Nationwide General Permit 12 (NWP 12) under Section 404 of the Clean Water Act (CWA). It is correctly stated that the nationwide permit cannot authorize more than minimal adverse impacts to aquatic resources. It may be inappropriate at this time to make this determination.

Recommendation: We recommend the FEIS include supporting materials documenting that NWP 12 criteria are met. Please document the avoidance and minimization measures that have been taken in the context of the Clean Water Act Section 404 to reduce adverse impacts to aquatic resources. Any correspondence with the Corps on Section 404 permitting should be included in the FEIS.

The DEIS (Page 1-4) also discloses that the preconstruction notification for impacts to waters of the United States were submitted to the Corps in July 2015 for LX and in August 2015 for RXE.

Recommendation: EPA recommends completing the NEPA process in advance of obtaining permits. NEPA is meant to inform the decision making process, not to justify a decision that has already been made. We recommend moving through the NEPA process in a fair, equal and transparent manner with regard to project analysis and decision making.

4.4.1 Existing Wetland Resources (Pages 4-46)

There is little information in the DEIS regarding the existing conditions (quality) of the wetlands that would be impacted by the Projects. The DEIS (Page 4-46) states: *“Additional information on the existing conditions of wetlands surveyed is available in Resource Reports and permitting conducted with cooperating agencies in FERC Docket No. CP15-514-000.”*

Recommendation: EPA recommends that existing conditions (quality) of the wetlands in the project area be disclosed and discussed in the body of the FEIS. Also include the Resource Report that identifies the existing wetland conditions in an FEIS appendix and/or provide the web address as a direct link to the wetlands Resource Report.

Additionally, the DEIS mentions (Page 4-46) that portions of the project routes were not reviewed.

Recommendations: We recommend the FEIS describe when field reviews were done and how much of the project was field-reviewed. Include any additional field review information since the DEIS. If this information is in the DEIS and/or located on a website, provide a citation and/or the direct link to the website to help the reader easily locate this information.

4.4.4 Alternative Measures (Pages 4-52 – 4-53)

TABLE 4.4.4-1 Areas Where Columbia Gas Requested Additional Extra Workspace in Relation to Wetlands for the LX Project. Table 4.4.4-1 shows that some additional temporary workspace (ATWS) areas where additional extra workspace is requested will impact wetlands.

Recommendation: Avoidance of wetlands is almost always preferred over compensation mitigation for impacts. EPA recommends that Section 4.4.4 identify how ATWS locations

were chosen to first avoid wetland impacts and then minimize those impacts that cannot be avoided for the ATWS locations in Table 4.4.4-1 that will impact wetlands.

4.4.5 Compensatory Mitigation (Page 4-53)

DEIS Chapter 5 states that prior to construction, Columbia Gas shall provide its final wetland compensation plan. EPA is interested in reviewing this plan before it is finalized.

Recommendation: EPA recommends the FEIS include the proposed wetland compensation mitigation plan for the LX and RXE Projects. Provide an update on the status of plan reviews and approvals by the Corps and the state permitting agency.

4.5 Vegetation

4.5.4 Interior Forest Habitat (Pages 4-57 4-59)

The DEIS (Page 4-57) states: *"The LX Project would affect 1,380.6 acres of upland forests and 1.1 acres of wetland forest during construction. . . . The acres of impacted interior forest blocks were calculated; we determined that approximately 1,142.9 acres of interior forest block habitat would be impacted by the proposed LX Project."*

Recommendation: We recommend Section 4.5.4 reference the wildlife section(s) describing interior forest species and list potential species that would be affected by the reduction of forest acres. Also, identify if there are any endangered species habitat that would be impacted by the reduction of interior forests.

In addition to providing valuable wildlife habitat and protecting water quality and quantity in the watershed, forests also have a role in carbon capture/sequestration to help ameliorate global warming/climate change.

Recommendation: We recommend the FEIS identify and discuss the role forests play in carbon capture/sequestration to help ameliorate global warming/climate change. Please estimate how much carbon capture will be lost due to the removal of forest for construction/operation of LX/RXE. Identify any compensatory mitigation the Project Proponents intend to undertake for the loss of forest due to their proposal.

4.5.5 Noxious Weeds and Other Invasive Plant Species (Page 4-59)

Recommendation: We recommend the FEIS include the project proponents Invasive Species Management Plans for LX and RXE Projects.

4.5.6 General Impacts and Mitigation (Page 4-59)

Recommendation: We recommend the FEIS identify in section 4.5.6 the length of time it takes for a mature forest to develop. Also mention how long the project will be monitored for successful regrowth of forests to pre-construction conditions.

Recommendation: We recommend the FEIS include documentation that demonstrates that the project proponents commit to applying seed mixes that contain native pollinator plant species so as to benefit pollinating insect, bird and bat species (page 4-63).

4.6.2 Aquatic Resources

4.6.2.1 Existing Aquatic Resources (Pages 4-77 – 4-79)

Kentucky

The DEIS mentions five stream to be impacted by the RXE project. Table 4.3.2-2 identifies these five streams and some characteristics. Regarding these impacts, the DEIS mentions:

“...waterbodies will be crossed by means of temporary bridges or culverts. Permanent culverts or bridges may be installed to allow for permanent access to the facilities over S014/S013 at the Means CS. At the Grayson CS, Columbia Gulf is proposing to relocate S041, an ephemeral channel, permanently to the south to accommodate design restrictions.” (Page 4-79)

Recommendation: We recommend the FEIS clarify information regarding the “flow regime” of each stream. The DEIS (see above insert) mentions the proposed relocation of stream S041 (ID) and classified it as ephemeral channel/stream. However, Table 4.3.2-2 has the classification of stream S041 as intermittent. Recommend this information be rectified in the FEIS.

4.9 Socioeconomics

4.9.7 Environmental Justice (Pages 4-143 – 4-146)

The DEIS focused Environmental Justice (EJ) analysis primarily on low-income populations. But, *“Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies”* (EPA website).

Recommendation: EJ is more than the income factor. The EJ analysis should discuss all factors, not solely income. EPA developed a free tool to help users to identify areas with EJ population: <https://www.epa.gov/ejscreen>. Additionally please refer to this document for EJ analysis in NEPA reviews:

<https://www.epa.gov/environmentaljustice/ej-iwg-promising-practices-ej-methodologies-nepa-reviews>.

An important reason for identifying communities with environmental justice (EJ) concerns in the EIS is to use this information to communicate the impacts of the project.

Regarding the LX and RXE Projects the DEIS (page 4-145) states: *“Many of the counties crossed by the LX and RXE Projects have poverty rates higher than the national average. Six counties have poverty rates that are meaningfully greater (i.e., over 20 percent higher) than rates for their respective states: Jackson, Morgan, Perry and Vinton Counties in Ohio and Menifee and Montgomery Counties in Kentucky. In addition several places have very high poverty rates: Sugar Grove Village, Rockbridge CDP, Oak Hill Village and McArthur Village. Several of these counties and places would have the pipeline and/or pipeline facilities (such as regulator stations and compressor facilities).”*

The DEIS lacks information that demonstrates specific efforts FERC and Project Proponents made to further identify/locate and contact communities with environmental justice concerns regarding the Proposed Projects. The DEIS does not demonstrate that proposed locations for the LX pipeline, LX facilities and/or the RXE facilities would not have disproportionate adverse effects, such as noise, on these populations. The DEIS does not identify opportunities there may be for training and hiring low-income populations for Projects' construction and/or operation and maintenance.

Recommendations: EPA recommends the FEIS:

- 1) Identify the areas where noise will be an impact to communities of concern. Further, include a plan that identifies how FERC and the Projects Proponents will communicate with the identified communities concerning the environmental (noise) concerns.
- 2) Identify the number/percentage of low-income/minority individuals/populations in relation to the general population that live (own/rent/reside) within or near the Projects' areas that would be at risk of injury due to unexpected pipeline and/or associated facilities failure;
- 3) Identify the specific efforts FERC and Projects Proponents made and will make to further identify/locate and contact communities with EJ concerns regarding the proposed Projects.
- 4) Identify and discuss any opportunities there may be to train and employ low-income individuals for Projects' construction and/or operation and maintenance.
- 5) Demonstrate how construction or operational impacts in these communities are not disproportionately high compared to impacts to other communities.
- 6) Incorporate new/additional EJ information and analysis into the FEIS cumulative impacts analysis, if applicable.

4.11 Air Quality and Noise

4.11.1 Air Quality

4.11.1.2 Air Regulatory Requirements

The DEIS (page 4-158) states: *"Table 4.11.1-6 identifies the nonattainment and maintenance areas for the LX and RXE Projects and the associated construction emissions compared to the applicability threshold levels. Detailed emission calculations for the construction activities identified in table 4.11.1-6 were filed on the record on October 2015. As presented in table 4.11.1-6, emissions during construction of the LX and RXE Projects would not exceed General Conformity applicability thresholds for any nonattainment or maintenance area, and a general conformity determination is not required."*

Recommendation: We recommend the FEIS provide a direct link to the detailed emission calculations in the file on record for the construction activities identified in *Table 4.11.1-6 - Comparison of Construction Emissions to General Conformity De Minimis Thresholds*.

Greenhouse Gas Emissions

The Draft EIS (Pages 4-154 through 4-164) includes a helpful discussion of the greenhouse gas (GHG) emissions associated with construction of the LX and RXE Projects, and annual emissions from the operation of the compressor stations, but did not include estimates of the GHG emissions associated with the production, leakage, and combustion of the natural gas transported by this proposal. Because of the causal relationship between this project and the emissions, it is appropriate and consistent with NEPA and CEQ regulations to consider and disclose the emissions levels in NEPA analyses.

Recommendations: We recommend that the FEIS include estimates of emissions from production, leakage, and combustion of the natural gas transported by the proposal.

In the DEIS, Table 4.11.1-8 (Page 4-164), FERC includes comparisons of project-level greenhouse gas emissions to State-wide emissions. We do not recommend comparing GHG emissions from a proposed action to global emissions, total state, or U.S. emissions, as these comparisons obscure rather than illuminate consideration of GHG emissions under NEPA.

Recommendation: We recommend that FERC remove comparisons of the proposed project's estimated emissions to aggregate emissions.

Methane Leakage

The DEIS does not contain estimates of methane leakage from the proposed expansion. EPA has compiled useful information on technologies and practices that can help reduce methane emissions from natural gas systems, including specific information regarding emission reduction options for natural gas transmission operations. This information may be found at <http://www3.epa.gov/gasstar/methaneemissions/index.html>.

Recommendations: We recommend that FERC estimate expected GHG emissions from leakage and consider potential BMPs to reduce leakage of methane associated with operation of the expansion facilities.

The DEIS does not describe measures to avoid, reduce, or compensate for GHG emissions from operation of the proposed pipeline expansions.

Recommendation: EPA recommends that the FEIS describe measures to reduce GHG emissions associated with the proposal including reasonable alternatives and other practicable mitigation opportunities, and disclose the estimated GHG reductions. For example, the FEIS could include consideration of more efficient compressor stations or purchase of renewable energy to power the stations. The EPA further recommends that the FEIS and Record of Decision (ROD) commit to implementation of reasonable mitigation measures that would reduce project-related GHG emissions. (Also see additional comments under 4.13.5.11 Climate Change.)

4.11.2 Noise (Pages 4-167 – 4-176)

Table 4.11.2-3 Calculated Operational Noise Levels for New and Existing Compressor Stations
(DEIS Pages 4-171 and 4-172)

Compressor Stations

Some of the distances in the figures/maps used in the *Appendixes Q Noise Sensitive Areas (NSAs) Associated with the Projects* are different from those on Table 4.11.2-3. Specifically, Appendix Q-4 identifies NSA #1 as 400 feet from the Crawford Compressor Station and the table states that it is 250 feet. Additionally, the table shows that there is no potential increase above ambient noise levels. This does not seem correct considering how close the nearest NSA is to the station.

Recommendation: We recommend FERC review the NSA distance information on Table 4.11.2-3 and the information provided in Appendix Q, and rectify any discrepancies accordingly in the FEIS documentation. In addition, we recommend the FEIS Table 4.11.2-3 include corrected potential noise increases above ambient levels as applicable.

For the Oakhill Compressor Station, though Table 4.11.2-3 shows noise levels under the 55 dB threshold, there is an increase greater than 10 dB shown for NSA 1 and NSA 2.

Recommendation: We recommend that the increase in noise levels greater than 10 dB shown for NSA 1 and NSA 2 be recognized in the text of the DEIS. In addition, we suggest that some public outreach be done to communicate with the public regarding this increase and potential mitigation.

Blowdown Events – Compressor Stations and Pipelines

The DEIS (Page 4-173) states: “In addition to the operational noise discussed above, blowdown events would also generate noise impacts. The duration of a blowdown depends on factors such as the extent of the maintenance activity and the gas pressure, and would generally last between 20 minutes and 2 hours.”

Recommendations: In the description for blowdown events, we recommend the FEIS explain the frequency of maintenance activities that cause the blowdown events. Also, provide the expected frequency (number of times per/day, month and/or years) that unplanned pipeline blowdown events typically occur.

Regulator Stations

Table 4.11.2-4 – Calculated Operation Noise Levels for New and Existing Regulator Stations
(Page 4-174)

Table 4.11.2-4 shows the increase in ambient levels are not above 55 dB for the McArthur Regulator Station; however, it does show an increase greater than 10 dB for NSA 1 above ambient noise levels.

Recommendation: We recommend as suggested earlier that the community be informed of this increase in noise and potential mitigation.

Odorization Stations

Table 4.11.2-5 Calculated Operation Noise Levels for New Odorization Stations (Page 4-176): The increase in ambient levels for the R-130 Odorization Station, though not above 55 dB threshold, has a significant increase.

Recommendation: The significant increase in noise should be recognized and further explained of its impact in the body of the document. It is suggested that the community/NSA be informed of the increase in noise and potential mitigation.

4.12 Reliability and Safety

4.12.1 Safety Standards (Pages 4-176 – 4-181)

The DEIS (Page 4-181) states: *“Columbia Gas would prepare an emergency response plan that would provide procedures to be followed in the event of an emergency that would meet the requirements of 49 CFR 192.615. The plan would include the procedures for communicating with emergency services departments, prompt responses for each type of emergency, logistics, emergency shut down and pressure reduction, emergency service department notification, and service restoration.”*

Recommendation: We recommend the FEIS include Columbia Gas’ emergency response plan for LX and Columbia Gulf’s emergency response plan for RXE, if available. At a minimum include the drafts of the emergency response plans in the FEIS.

4.12.2 Pipeline Accident Data (Pages 4-181 – 4-183)

As mentioned in Section 4.12.2, the highest risk to pipeline safety is equipment failure, with corrosion being the leading cause of pipeline failure.

Recommendation: We recommend the FEIS discuss how the Projects will reduce the incident rate of failure. Though the number of fatalities from pipeline failures are few, explain the safety mechanisms used to reduce failures/fatalities and how it will do so for the life of the project.

4.13 Cumulative Impacts (Pages 4-148 - 4-208)

EPA is concerned that the temporal and geographic scope of the study is narrow, which has led to a limited analysis of cumulative impacts. Defining the geographic and temporal framework is the starting point of a cumulative impacts analysis. Establishing appropriate spatial and temporal boundaries is at the very core of the study. Selection of inappropriate boundaries subsequently leads to a fundamentally flawed analysis and documentation. It is critical to assess past and future impacts.

The DEIS analysis appears to only consider impacts that occur during construction of LX and RXE as the temporal boundary (approximately 1 ½ years). However cumulative impacts can occur to resources even if impacts do not occur concurrently. Though construction impacts can be short-termed, there are likely prolonged impacts for instance associated with forest

fragmentation, invasive species, etc. Even projects that do not overlap geographically can contribute to cumulative impacts to streams, wetlands, forests, habitat and other resources.

For example, as large forested blocks are bisected by LXP and RXE, the interior forest habitat for those blocks is decreased. The remaining blocks in combination with other actions, including other pipeline projects, are further reduced. The interior forest habitat is greatly reduced for wildlife and forest interior dwelling species. These types of long-term cumulative impacts on wildlife and habitat should be considered.

Cumulative impacts temporal boundaries are often set a few decades into the past and future to include appropriate trend and facility life expectancy. It is typical to use a baseline time frame of 30 to 50 years past, prior to sprawl and extensive highway networks. It is important to analyze the trends in resources, to identify if there have been repeated impacts or degradation of the resources. A thorough analysis of impacts could help guide the selection or placement of appropriate mitigation for LX impacts or highlight areas where additional avoidance and minimization may be warranted. EPA would be interested in discussing the selection of a more appropriate and inclusive boundary with FERC.

Recommendations: EPA recommends FERC consider expanding the cumulative impacts study beyond what is currently considered in the DEIS. Consider projects that do not necessarily overlap directly with LX and RXE construction boundaries. Include a map(s) to show the various spatial/geographic boundaries used for the cumulative impact assessment.

EPA is concerned about cumulative impacts to aquatic resources, groundwater, and water quality.

Recommendations: We recommend that the cumulative impact analysis of surface and groundwater be expanded, including cumulative impacts to water quality, headwater streams, high quality and/or sensitive aquatic resources. Aquatic resources have the potential to be cumulatively impacted by many factors, including waterbody crossings, change in recharge patterns, clearing, blasting, and water withdraws for hydrostatic testing. It may be prudent to consider these impacts in combination with other past, present and reasonably foreseeable actions at the watershed scale.

We recommend that FERC's cumulative impact analysis present potential cumulative impacts regardless of the various prepared or required plans to be implemented by LX, any implementation of construction, restoration or mitigation plans from other actions, or permits or regulatory thresholds. While it may be appropriate to recognize or consider the relation to these, please keep in mind that this is not sufficient to determine potential effects of past, current and reasonably foreseeable future activities to resources or if/ how project impacts can be mitigated.

4.13.5.11 Climate Change (Pages 4-206 – 4-208)

DEIS (Pages 4-206 and 4-207), discusses the U.S. Global Change Research Program's (USGCRP) May 2014 report *Climate Change Impacts in the United States* and lists eleven observations of environmental impacts with a high or very high level of confidence that may be

attributed to climate change in the Midwest region. One observation listed is: *“annual precipitation has increased by about 20 percent over the past century, particularly from increased high intensity rainfall events, and this trend is projected to continue.”*

Recommendation: EPA recommends the FEIS discuss the Projects Proponents’ and FERC’s consideration of the Projects’ susceptibility to impacts associated with climate change and identify mitigation measures. For example, discuss the risk of the Projects’ pipelines being exposed due to increases in flooding, scouring, and/or upland erosion due to expected heavy precipitation events associated with climate change. (Also see our comments regarding Greenhouse Gas Emissions and Methane Leakage above under **4.11.1.2 Air Regulatory Requirements.**)

5.0 Conclusions and Recommendations

The DEIS Page 5-1) states: *“The conclusions and recommendations presented in this section are those of FERC environmental staff. Our conclusions and recommendations were developed with input from the EPA, COE, FWS, OEPA, PADEP, PADCNr, WVDEP, WVDNR, and KYDEP as cooperating agencies.”*

Recommendation: This chapter of the FEIS will need to be updated after consideration of additional input provided by the cooperating agencies/resources agencies and others since FERC’s release of the DEIS for public and agency review and comment.

Additional EPA Recommendations:

- For those facilities that will be equipped with emergency generator(s). EPA wants to make you aware that there are two specific rules for new source engines. One of these rules would apply to generators at the facilities. In order to learn and comply with these rules please visit: <http://www.epa.gov/region1/rice/>.
- EPA has issued three final rules that together will curb emissions of methane, smog-forming volatile organic compounds (VOCs) and toxic air pollutants such as benzene from new, reconstructed and modified oil and gas sources, while providing greater certainty about Clean Air Act permitting requirements for the industry. To comply with these rules please go to: <https://www3.epa.gov/airquality/oilandgas/actions.html>
- EPA recommends that for new equipment utilize contract specifications requiring advanced pollution controls and clean fuels: <http://www.northeastdiesel.org/pdf/NEDC-Construction-Contract-Spec.pdf> and <http://www.epa.gov/cleandiesel/technologies/index.htm>
Implement diesel controls, cleaner fuel, and cleaner construction practices for on-road and off-road equipment used for transportation, soil movement, or other construction activities, including:
 - ✓ Strategies and technologies that reduce unnecessary idling, including auxiliary power units, the use of electric equipment, and strict enforcement of idling limits; and

- ✓ Use of clean diesel through add-on control technologies like diesel particulate filters and diesel oxidation catalysts, repowers, or newer, cleaner equipment.

For more information on diesel emission controls in construction projects, please see: <http://www.northeastdiesel.org/pdf/NEDC-Construction-Contract-Spec.pdf>

- EPA recommends the use of low maintenance trees (reduces pollutants emissions from maintenance activities) and the construction of Rain Gardens for erosion and runoff mitigation while decreasing impervious surfaces to improve ground water quality. By adopting these low-cost easy to achieve suggestions, extra enhancements will be achieved such as noise reduction and aesthetics improvement.

Document Content(s)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 11 2016

REPLY TO THE ATTENTION OF:
E-19J

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First St., N.E., Room 1A
Washington, DC 20426

Re: Final Environmental Impact Statement (FEIS) for Columbia Gas Transmission, LLC – Leach Xpress Project, and Columbia Gulf Transmission, LLC – Rayne Xpress Expansion Project (FERC Docket Nos. CP15-514-000 and CP15-539-000, Respectively) (CEQ No. 20160203)

Dear Ms. Bose:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, EPA has completed its review of the Federal Energy Regulatory Commission's (FERC) FEIS for the Leach Xpress Project (LX) and Rayne Xpress Expansion Project (RXE) (Projects), proposed by Columbia Gas Transmission, LLC (Columbia Gas) and Columbia Gulf Transmission, LLC (Columbia Gulf), respectively.

Columbia Gas and Columbia Gulf (Projects Proponents) request FERC authorization to construct, operate, abandon in-place, add new compression and operate certain interstate natural gas pipeline facilities in Ohio, Pennsylvania, West Virginia and Kentucky. LX would allow for the transport of 1.5 million dekatherms of natural gas per day of firm transportation service to natural gas consumers served by the Columbia Gas pipeline systems. RXE would add new compression in Kentucky to provide about 621,000 dekatherms per day of firm transportation on Columbia Gulf's system.

EPA commented on the Draft EIS (DEIS) on June 13, 2016. We rated the DEIS as Environmental Concerns, Insufficient Information (EC-2). Our comments and recommendations recommended additional information and analysis regarding: 1) identification and evaluation of alternatives, 2) avoidance and minimization of impacts to aquatic resources, forests and core forests and associated biological resources, 3) identification of environmental justice populations, 4) identification of noise impacts, and 5) analysis of greenhouse gas emissions and climate change. In order to fully protect the environment, we recommended additional avoidance, minimization and compensation measures be identified in the FEIS.

This letter represents the coordinated review and consolidated comments by EPA Regional Offices in Region 3 (Philadelphia, with responsibilities for actions in Pennsylvania and West Virginia), Region 4 (Atlanta, with responsibilities for actions in Kentucky), and Region 5 (Chicago, with responsibilities for actions in Ohio).

We appreciate that many of our earlier comments and recommendations were considered and addressed in the FEIS.

However, the FEIS perpetuates the significant omission documented through our comments on the DEIS with respect to a proper climate change analysis to inform the decision making process. Specifically, the Council on Environmental Quality's, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* (CEQ GHG Guidance) of August 1, 2016 specifically uses end use product combustion as an example of an indirect emission that should be calculated for each alternative considered. We view FERC's response to our comments as very concerning in light of CEQ's GHG Guidance and request a headquarters level meeting with us to seek a definitive resolution to this matter before you publish a Record of Decision (ROD) and so that you do not continue to take this approach in additional NEPA documents.

Also, the FEIS does not include a proposed wetland/stream mitigation plan, a Migratory Bird Conservation Plan, or documentation to support FERC assertion that the proposed Mountaineer Xpress Pipeline is not a viable alternative.

EPA recommends the Final Migratory Bird Conservation Plan that includes forest compensation mitigation approved and agreed to by the U.S. Fish and Wildlife Service, wetland/stream mitigation plans, and information to substantiate the Projects' purpose and need is distinct from the proposed Mountaineer Xpress Pipeline Project are taken into consideration by FERC prior to making a determination regarding issuance or denial of a Certificate of Public Convenience and Necessity (Certificate). EPA continues to recommend that FERC and the Projects Proponents continue to work closely with the regulatory agencies on permitting issues, the affected communities, and other stakeholders as the proposed Projects proceed. See the enclosure for EPA's detailed comments.

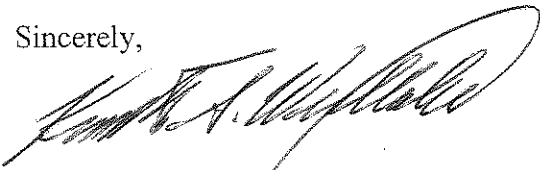
When FERC makes its determination regarding a Certificate, please send paper copies and CDs of the determination to EPA Regional Offices as follows:

- EPA Region 5: one (1) paper copy and 2 (2) sets of CDs,
- EPA Region 4: one (1) set of CDs, and
- EPA Region 3: one (1) set of CDs.

Thank you for the opportunity to provide comment on the FEIS. If you or your staff have any questions or concerns, I can be reached at 312-886-2910, or contact Virginia Laszewski of my

staff at laszewski.virginia@epa.gov or 312-886-7501. To schedule a meeting with our headquarters office, please contact Karin Leff at leff.karin@epa.gov or (202) 564-7068.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth A. Westlake", written in a cursive style.

Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Enforcement and Compliance Assurance

Enclosure: EPA FEIS Comments

Cc (email): Federal Energy Regulatory Commission, Juan Polit, Environmental Project Manager, (LX/RXE), juan.polit@ferc.gov
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**U. S. EPA COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT
(FEIS) FOR THE LEACH XPRESS PROJECT AND RAYNE XPRESS EXPANSION
PROJECT, OHIO, PENNSYLVANIA, WEST VIRGINIA, AND KENTUCKY
(SEPTEMBER 2016)
(FERC Docket Nos. CP15-514-000 and CP15-539-000)
(CEQ NO. 20160203)**

Columbia Gas Transmission (Columbia Gas and Columbia Gulf Transmission (Columbia Gulf) (Projects Proponents) propose to construct and operate the following natural gas facilities (Projects) :

- Columbia Gas – Leach XPress Pipeline Project (LX): 132 miles of new 36-inch-diameter natural gas pipeline, 24 miles of 36-inch-diameter looping pipeline, 28 miles of 20-inch-diameter pipeline to be abandoned in place, 3 new compressor stations, and appurtenant facilities including 2 existing compressor station modifications, 4 new and 1 modified regulator stations, 13 pig launcher and receiver facilities, 9 mainline valves and 4 odorization facilities in Ohio, West Virginia and Pennsylvania. Columbia Gas would abandon 28.2 miles of the existing Line R-501 in Fairfield, Hocking and Vinton Counties, Ohio and construct 24.2 miles of the R-801 Loop. The proposed LX Project's pipeline facilities would total about 106.7 miles of pipe and add approximately 143,000 horsepower (hp) of compression to transport up to 1.5 million dekatherms (Dth/d) per day of natural gas.
- Columbia Gulf – Rayne Xpress Expansion Project (RXE): two new compressor stations (CS), Grayson CS in Carter County and Means CS in Menifee/Montgomery Counties in Kentucky to add 51,800 hp to enable up to 621,000 Dth/d of firm transportation on its system, and modify the existing Means measurement and regulation station (Means M&R) in Menifee County, Kentucky. Columbia Gulf proposes to modify the Supervisory Control and Data Acquisition (SCADA) system within an existing building as well as install ancillary below ground piping and minor above ground appurtenance facilities.

Project Proponents' Purpose and Need (FEIS page 3-1): Columbia Gas' and Columbia Gulf's stated objectives of the LX and RXE Projects are to deliver up to a total of 2,121,000 Dth/d of natural gas supply from the existing production region to areas of higher demand, premium markets. (FEIS page 3-1)

Project Proponents' Schedule: The FEIS (page ES-2) states that “[s]ubject to the receipt of FERC authorization and all other applicable permits, authorizations, and approvals, Columbia Gas and Columbia Gulf propose to start construction of both projects in November 2016 and continue through November 2017.”

The following are EPA's comments regarding the FEIS and include our responses for select FERC responses to EPA DEIS comments found in the FEIS, Volume II – COMMENT RESPONSES, comments/responses numbered FA2-1 through FA2-89 (pages FA-9 to FA-36).

Alternatives/Alternatives Analysis/Purpose and Need (FA2-04, FA2-05, FA2-12, FA2-13, FA2-16, FA2-17, FA2-18)

FA2-17 et al. In EPA's comments on the Draft EIS for the LX and RXE Projects, we had recommended, in part, that FERC consider the proposed Mountaineer Xpress Pipeline (MXP) Project as a viable alternative to those other two pipeline projects. FERC responded that Mountaineer is not a viable alternative, asserting that LX and RXE have their own distinct purpose and need and distinct delivery and receipt points. However, information to document that assertion was not included in the Leach Xpress and Rayne Xpress Expansion Projects FEIS.

Recommendations: We recommend that such support information on project-specific purpose and need and delivery and receipt points, and pertinent information from project-related precedent agreements be routinely included in FERC NEPA documents for all future pipeline projects. In addition, EPA requests FERC include the specific purpose and need supporting information, including delivery and receipt points, for LX and RXE Projects in FERC's decision document for LX and RXE and provide that information to EPA.

FA2-20, FA2-21. EPA recommended specific additional information and analysis for the FEIS to understand and compare the various above-ground facilities, such as potential locations for proposed new compressor stations. FERC responds "*We find the information and analysis in the FEIS sufficient to understand and compare the alternatives.*"

Recommendation: EPA continues to recommend that additional information and analysis be included in future FERC NEPA documents to increase public and stakeholder understanding and ability to thoroughly compare the alternatives.

Air Quality

FA2-15. EPA recommended the FEIS include the amount of compression for the Crawford Compression Station (CS) in Ohio. FERC responds that additional compression that will be needed is currently unknown and won't be determined until final design.

Recommendations: EPA recommends that FERC ensure that any expansion or modification of the Crawford CS does not lead to emissions of any pollutant that may cause or contribute to emission levels which exceed the allowance permitted for the pollutant for the area from new or modified facilities in the area's federally approved State Implementation Plan (SIP). This can best be accomplished by procuring an air permit from the Ohio Environmental Protection Agency.

Greenhouse Gas Emissions

FA2-66. The FEIS did not include estimates of the indirect GHG emissions that would be caused by the proposal and its alternatives, including effects of production, and combustion of the natural gas transported by this proposal.¹ FERC's response to EPA's comments on its Draft EIS indicated non-concurrence with the recommendation to calculate the indirect emissions

¹ See White House Council on Environmental Quality, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (Final Guidance)*, p.11, p. 16.

associated with end use product combustion. Combustion of the product is a reasonably foreseeable effect of this project, and falls squarely within the obligation to consider indirect impacts under NEPA. The CEQ GHG Guidance makes this same point, and uses the end use product combustion of fossil fuel as a specific example of the kind of indirect effect that should be considered under NEPA.

Recommendation: We continue to strongly recommend that FERC include estimates of emissions from production and combustion of the natural gas transported by the proposal.

FA2-67. In the FEIS, FERC compares the proposal's estimated GHG emissions to state GHG emission levels. Comparing one project's direct and indirect emissions to aggregated totals is not an appropriate way to consider the impact of emissions. As CEQ stated in its final guidance, such comparisons are "not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact." In response to comment FA2-67, FERC cites that the draft CEQ guidance allows for the use of these types of comparisons as a frame of reference; that concept is not included in the final guidance and we recommend that this reference be removed.

Recommendation: EPA recommends that FERC follow the approach outlined by the CEQ's Final Guidance and remove comparisons to aggregated emissions levels.

Environmental Justice

FA2-63, FA2-64. EPA reviewed Section 4.9.7, *Environmental Justice*, of the FEIS. FERC states the following regarding potential impacts to low-income populations near the Mean Compressor Station (CS) in Menifee and Montgomery Counties, Kentucky: "*Although the percentage of low-income populations is 16% above the State average, the Mean CS Project would be to expand and [sic] existing facility.*" This number is meaningfully greater than the reference population and FERC does not provide sufficient explanation as to why additional analysis or mitigation is excluded from the FEIS. Potential negative environmental impacts primarily focus on noise and air quality. EPA notes that low-income populations may experience disproportionately high and adverse impacts as a result of the proposed project because of infrastructure vulnerabilities (such as older housing stock) and proximity. Therefore, EPA is concerned with FERC's conclusion that impacts to low-income communities would be "*minor and temporary.*" Based on the information provided, EPA finds it is likely that low-income populations near the Mean CS will be disproportionately impacted.

Further, while EPA acknowledges that Columbia Gas and Columbia Gulf have provided "*many opportunities for public input and comments about the proposed LX and RXE Projects*", it is unclear if these opportunities have been provided in a meaningful and clear way to potentially impacted low-income populations. Given the likelihood for this project to potentially disproportionately and adversely impact a low-income population, the FEIS should have demonstrated that the lead agency had attempted to meaningfully involve the community in the decision-making process, and identify appropriate mitigative measures to lessen the "*minor and*

temporary” adverse impacts. The EPA noted that the document mentioned “noise control measures would be implemented during project construction and operation to ensure that noise attributable to the new aboveground facilities would be either less than 55 dBA Ldn at nearby noise sensitive areas NSAs”.

Recommendations: EPA recommends FERC’s decision document for the LX and RXE Projects include information that demonstrates that FERC has attempted to meaningfully involve this community in the decision-making process. We also recommend that FERC NEPA documentation for future pipeline projects include verification of FERC’s meaningful involvement with EJ communities early and often in the decision making process. See our additional comments regarding noise impacts next.

Noise Impacts

FA2-64. Further, in regards to permanent impacts such as noise, FERC in Section 5.2 (*FERC Staff Recommended Mitigation*) recommendation #30 states “If the noise attributable to the operation of all of the equipment at any compressor station under interim or full horsepower load conditions exceeds 55 dBA Ldn at any nearby NSAs, Columbia Gas and Columbia Gulf shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date.”

Recommendation: The EPA recommends that the additional noise controls take place if not immediately then as soon as possible and not within one year of the in-service day. The one year period implicates additional and unnecessary burden on this population. Please remind the applicant that the Noise Control Act SEC.2 [42 U.S.C. 901] “Findings and Policy”, mentions that “the inadequately controlled noise presents a growing danger to health and welfare of the population.”

Wetlands and Streams

The FEIS (pages ES-7 and 4-51) discloses that the LX Project would affect 301 wetlands and cross 983 freshwater waterbodies. “Columbia Gas would use various crossing methods such as wet open-cut, conventional bore, and horizontal directional drilling (HDD) and follow measures outlined in the [Environmental Construction Standards] ECS and Procedures to minimize impacts on waterbodies.”

FA2-51 and FA2-55: EPA recommended the FEIS include supporting materials that document avoidance and minimization of aquatic resources. FERC responds “Permit applications filed with U.S. Army Corps of Engineers (COE), NW 12 is under the purview of COE. Section 5.2, condition 9 requires the applicants to document that they have received all applicable authorizations required under federal law (or evidence of waiver thereof). The EIS is a summary document intended to disclose the potential impacts of a proposed action and specific avoidance and minimization measures for construction of the projects are presented in the ECS and are included by reference. As such, we believe that the EIS discussion of impacts and mitigations associated with the Section 404 and USACE NWP-12 permitting is sufficient for the purpose of the EIS under NEPA.”

Recommendation: EPA continues to recommend that supporting materials and additional information on avoidance and minimization of impacts to aquatic resources be included in FERC's environmental analysis of natural gas pipelines. This information would not only include avoidance and minimization of impacts during construction, but also support the efforts made to avoid and minimize aquatic resources impacts during the identification and analysis of alternatives.

FA2-56. In addition, the FEIS does not include the proposed wetlands compensation mitigation plan as EPA recommended.

Recommendations: EPA requests that FERC recommend that the applicant provide a copy of the proposed compensatory mitigation plan to EPA Regions 3 and 5 when it is provided to FERC and the Corps. EPA will coordinate with the Corps to provide any comments or questions as a result of our review of the compensatory mitigation plan. If FERC has not already planned to do so, please include a requirement in FERC's Certificate that the compensatory mitigation plan should be completed and approved prior to construction of the proposed Projects.

Vegetation

Forest/Interior Forest/Migratory Bird Habitat

The FEIS (page 4-61) states: "*The LX Project would affect 1,380.6 acres of upland forests and two acres of wetland forest during construction.*" The FEIS does not include a Migratory Bird Conservation Plan with forest compensation mitigation commitments recommended and approved by the U.S. Fish and Wildlife Service.

Recommendation: EPA recommends FERC's determination regarding issuance or denial of a Certificate include consideration of the Final Migratory Bird Conservation Plan that includes forest compensation mitigation approved and agreed to by the U.S. Fish and Wildlife Service.

FA2-59. EPA recommended the FEIS include the project proponents' Invasive Species Management Plans for LX and RXE Projects. FERC responds that an Invasive Species Management Plan will be developed as part of the final wetland compensation management plan.

Recommendation: We recommend that the Invasive Species Management Plan include upland as well as wetland areas.

FA2-61. EPA recommended the FEIS include documentation that demonstrates that the project proponents commit to applying seed mixes that contain native pollinator plant species so as to benefit pollinating insect, bird and bat species. We appreciate that FERC responds they "*will make a recommendation that Columbia Gas provide a revised ECS (environmental construction standards) with provisions for use of native pollinator plant species seed mix.*"

Recommendation: EPA recommends FERC receive Columbia Gas' revised ECS with provisions for use of native pollinator plant species seed mix for FERC consideration and prior to FERC Certificate determination.

Cumulative Impacts (FA2-77 – FA2-84)

We appreciate that FERC expanded the cumulative impact analysis to include non-jurisdictional projects.

Climate Change

FA2-84. EPA recommended the FEIS discuss the Projects Proponents' and FERC's consideration of the Projects' susceptibility to impacts associated with climate change and identify mitigation measures. For example, discuss the risk of the Projects' pipelines being exposed due to increases in flooding, scouring, and/or upland erosion due to expected heavy precipitation events associated with climate change. FERC responds "*Section 4.13.5.11 of the EIS will be updated to include this information.*" "*Pipelines are routinely exposed to heavy rainfall events and flooding. During operation of pipelines, pipeline operators conduct routine monitoring of the right-of-way to ensure the integrity of their pipelines.*" EPA's review of the FEIS finds that there is no Section 4.13.5.11 in the FEIS and FEIS Section 4.13.6.11 – Climate Change (pages, 4-234 – 4-235) does not discuss the Projects Proponents' and FERC's consideration of the Projects' susceptibility to impacts associated with climate change nor identify mitigation measures in order to help insure human life and the environment are protected. In addition, there is no information in the FEIS that shows that FERC's and the Project Proponents "routine monitoring" protocols have incorporated climate change factors.

Recommendation: EPA recommends FERC substantiate that the applicant's design, construction and "routine monitoring" plans have incorporated measures to address the expected increased heavy rainfall events and flooding due to climate change for this and future natural gas pipelines.

FEIS 5.0 CONCLUSIONS AND RECOMMENDATIONS

Water Resources – Surface Waters

FEIS (page 5-3) states of the FEIS states "*Additional measures outlined in the ECSs would aid in the effective avoidance or minimization of impacts on surface waterbodies. Activities associated with crossing West Virginia state-designated high quality waters would be covered under the WVDNR Stream Activity Permit for Marshall and Wayne Counties, West Virginia. Columbia Gas intends to request a waiver from the fish spawning season timing restriction prior to construction. Because these time windows may differ from the time windows required by section V.B.1 of our Procedures, we require evidence of the state agency's approval for the proposed time windows. Because Columbia Gas has not yet received its WVDNR Stream Activity Permit for the LX Project, we are unable to verify these WVDNR recommended instream work windows. Impacts associated with hydrostatic testing on public and municipal water supplies would be minimized through control measures established by Columbia Gas and Columbia Gulf in accordance with state recommendations. Accidental spills during construction and operation would be avoided through implementation of the SPCC Plan. Due to the measures discussed above, we conclude impacts on waterbodies would be adequately minimized during construction of the Projects.*"

Recommendation: EPA is concerned that a waiver is being sought and recommend that FERC request that the applicant work during specified instream windows and do not request a waiver. It is unclear, as it is uncertain if a waiver will be granted, if the conclusion that impacts to waterbodies would be adequately minimized is supported.

Surface Water Uses during Construction

FEIS (page 5-4) states *"All water used for hydrostatic testing for the LX Project would be obtained from local surface waters and municipal sources. Columbia Gas would require 42 million gallons of test water for pipeline facilities and 1 million gallons of test water for aboveground facilities. The RXE Project would obtain water from municipal sources."* No conclusions were presented for the possible combined effects of water withdrawal, instream construction, reduction of riparian areas, and changes to groundwater flow/recharge as a result of blasting.

Recommendations: EPA is concerned by potential complex impacts resulting from a combination of activities, including water withdrawals, blasting, and vegetation removal. We recommend the combination of impacts from these activities be considered, especially for sensitive resources. For the LX and RXE Projects and future pipeline projects, please include appropriate conditions to ensure continuous flow of water downstream of withdrawal zones, and any conditions to minimize or avoid loss of habitat, change in water temperature and dissolved oxygen levels, and entrainment or impingement of fish or other aquatic organisms.

Additional Comments

FA2-53, FA2-65. EPA recommended, in part, that FERC include the Resource Report that identifies the existing wetland conditions as an FEIS appendix and/or provide the web address as a direct link to the wetlands Resource Report. We also recommended FERC provide a direct link to the detailed emission calculations in the file on record for the construction activities identified in Table 4.11.1-6. The FEIS does not provide direct links nor include appendices with this information.

Recommendation: EPA continues to recommend FERC NEPA documents provide direct links to specific file on record information that FERC refers the reader to for further information if that information is not included in the FEIS. Providing a direct link to the specific information would save the public and regulatory agencies time when reviewing FERC's NEPA documents.

Document Content(s)

EPA comments FEIS LeachXpress-Rayne Xpress Expansion.PDF.....1-11

State	Facility Name	Facility ID (ORISPL)	Year	CO2 (short tons)	Heat Input (MMBtu)
WV	John E Amos	3935	2015	14,169,967.50	138,109,257
WV	Harrison Power Station	3944	2015	11,684,292.80	113,882,126
WV	Mount Storm Power Station	3954	2015	10,324,092	100,624,677
WV	Mountaineer (1301)	6264	2015	8,035,894.50	78,323,403
WV	Pleasants Power Station	6004	2015	7,298,726.60	69,591,235
WV	Fort Martin Power Station	3943	2015	7,098,913.70	67,686,117
WV	Mitchell (WV)	3948	2015	5,520,319.60	53,875,167
WV	Longview Power	56671	2015	2,960,553.80	28,855,296
WV	Axiall Corporation Natrium Plant	50491	2015	1,016,448.20	9,906,988
WV	Grant Town Power Plant	10151	2015	820,713.20	7,999,086
WV	Pleasants Energy, LLC	55349	2015	613,482.10	10,278,291
WV	Phil Sporn	3938	2015	609,337	5,809,842
WV	Kanawha River	3936	2015	588,198.10	5,608,292
WV	Kammer	3947	2015	247,414.10	2,359,024
WV	Big Sandy Peaker Plant	55284	2015	101,763.80	1,724,699
WV	Ceredo Generating Station	55276	2015	73,354.30	1,243,351
WV	Bayer	880053	2015		828,998
WV	Chemours Belle Plant	10788	2015		501,294
WV	Morgantown Energy Facility	10743	2015		6,473,505
WV	UCC South Charleston Plant	50151	2015		665,134

Document Content(s)

Need for a revised or supplemental DEIS (with Exhibits).PDF.....1-149