June 1, 2018

Ms. Kimberly Bose
Federal Energy Regulatory Commission
Office of the Secretary
Washington, DC 20428

Re: Docket No. CP18-46: Comments Regarding Adelphia Gateway Pipeline Project, Scoping Period

Dear Ms. Bose,

The Delaware Riverkeeper Network ("DRN") is providing the following comments to be considered by the Federal Regulatory Commission ("FERC" or the "Commission") with respect to the proposed Adelphia Gateway Pipeline project (the "Project" or "AGP") proposed by Adelphia Gateway, LLC ("Adelphia"). Clean Air Council joins in these comments and is also submitting separate comments.

Project Summary

The proposed Project includes approximately 84 miles of 18-inch diameter pipeline and 4.5 miles of 20-inch diameter pipeline. Adelphia is seeking authorization to expand the export capacity of shale gas from Pennsylvania and transport up to 250,000 dekatherms ("Dth/d") of gas per day (or "up to" 350,000 Dth/d[1]) to downstream markets domestically and potentially abroad.[2] Based on information provided by Adelphia, the project will require the operation and construction of

- one new 5,625 horsepower (hp) compressor station in Delaware County, Pennsylvania (Marcus Hook Compressor Station)
- one new 5,625 hp compressor station in Bucks County, Pennsylvania (Quakertown Compressor Station)
- 0.25 mile of new 16-inch-diameter pipeline lateral in Delaware County, Pennsylvania and New Castle County, Delaware (Parkway Lateral);
- 4.5 miles of new 16-inch-diameter pipeline lateral in Delaware County, Pennsylvania (Tilghman Lateral);
- one new interconnect each in Montgomery County and Bucks County, Pennsylvania;

[1] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, January 11, 2018. (App.) Exhibit Z-3.
[2] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, January 11, 2018. (App.) Exhibit Z-3.

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- three new interconnects in New Castle County, Delaware;
- three new interconnects in Delaware County, Pennsylvania;
- eight new blowdown assemblies (one in Delaware County, two in Montgomery County, and five in Chester County, Pennsylvania);
- one new mainline valve in Delaware County, Pennsylvania; and
- one temporary wareyard in Delaware County, Pennsylvania.

Additionally, the Adelphia Gateway Project would require the acquisition and use of the following existing facilities:

- 4.4 miles of existing 20-inch-diameter natural gas pipeline in Northampton County, Pennsylvania;
- 84 miles of existing 18-inch-diameter pipeline (the northern 34-mile segment was used to transport oil and natural gas, and the southern 50-mile segment was used to transport fuel oil); and
- four existing meter stations in Bucks, Delaware, and Northampton Counties, Pennsylvania.

The pipeline would be operated within two Zones:

The Northern Zone (or Northern Segment) would consist of the approximately 34-mile,18-inch diameter segment of the pipeline extending north from the interconnection with Texas Eastern in Bucks County, Pennsylvania to the Martins Creek Terminal, Martins Creek, Pennsylvania and 4.5 miles of 20-inch pipeline from Transco in Northampton County, Pennsylvania to the Martins Creek Terminal, Martins Creek, Pennsylvania. The Northern Zone would transport a total of 525,000 Dth/d with 100% of capacity subscribed under Precedent Agreements to existing firm shippers, Lower Mount Bethel Energy, LLC and Martins Creek, LLC. The Northern Zone is currently a dual use (natural gas /oil) pipeline with existing receipt interconnects with the TETCO and TCO pipelines that have been transporting natural gas exclusively since 2014.

The Southern Zone (or Southern Segment) would consist of the approximately 50-mile, 18-inch diameter segment of the Project extending south from the interconnection with Texas Eastern in Bucks County, Pennsylvania to Marcus Hook, Pennsylvania. The Southern Zone would transport "an expected initial capacity"[3] of 250,000 Dth/d. However, Adelphia also states in its application that:

> "The final size and scope of the Project and the amount of capacity to be made available will be fully defined based on binding bids received in this Open

[3] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, January 11, 2018. (App.) Exhibit Z-3.

Season, and Adelphia Gateway reserves the right to increase the capacity of the Project (up to 350,000 Dth/d) based upon bids exceeding 250,000 Dth/day."

The Southern Zone is currently a fuel oil pipeline dating back to the 1970's that has been idle since December 2014. The Project proposes to convert this portion of existing pipeline to natural gas service and to reverse the flow from south to-north to north-to-south. The Southern Zone would also include the addition of the two new compressor stations (Marcus Hook CS and Quakertown CS) and two new pipeline laterals, connecting the Marcus Hook CS to new interconnect sites located within existing meter stations, in order to provide 250 million standard cubic feet per day (mmscfd) of capacity on the Southern Segment.

The *size and scope* of the construction activity for this Project will have a damaging effect on the health and vitality of the Delaware River watershed. Pipeline projects, in construction and operation, create noise and air pollution, cause degradation of water quality and stream habitats, and degrade the functions and values of the ecosystems traversed.

DRN asks that the Commission consider the multitude of environmental impacts associated with this project, including the cumulative impacts of all environmental and community harms it will cause as well as contribution to global warming. Through submission of this comment DRN identifies crucial issues concerning public participation and notification, crucial environmental issues the Commission should consider for the Project within the categories listed on the Notice of Intent to Prepare an Environmental Assessment (the "Notice of Intent");[4] identifies why it is important the FERC evaluate the claimed "need" for the project; and why, given the projects' numerous significant impacts, an Environmental Impact Statement will be necessary.

FERC has failed to properly notice the dates of public scoping meetings and must extend the scoping period by 90 days.

As of May 23, 2018, with just over a week remaining of the project scoping period, FERC had conflicting information on the dates of the public scoping sessions on their website, with their calendar page incorrectly stating that the both scoping meetings were being held on May 30, 2018. The Delaware Riverkeeper Network and other impacted community members and concerned residents rely on the timely and accurate notice of such meetings, as required by the National Environmental Policy Act (NEPA), in order to plan work and family obligations in advance to ensure attendance.

[4] Adelphia Gateway, LLC Notice of Intent to Prepare an Environmental Assessment for the Proposed Adelphia Gateway Project, FERC Docket No. CP18-46, May 1, 2018.

FERC must hold open accessible public hearings along the Project's proposed route.
As noted in FERC's February 22 letter to Adelphia,[5] and made abundantly clear in the correspondence on the docket since then, the Adelphia Gateway project has already received hundreds of comments on the record, demonstrating the strong public concern. In light of this community concern and the deficiencies in Adelphia's materials and in FERC's public scoping notice, FERC should commit to holding open, accessible public hearings where all are welcome to attend and have input on the project. The current public meeting format is restrictive, placing limits on attendance through requiring people to obtain tickets and reserving the right to place time limits on individuals' comments. This restricted format limits the public's access to a public meeting and their ability to comment in a way that effectively expresses their concerns.

FERC must demand complete and final information regarding the scope, size, capacity, feasibility, and design of the Project in order to meaningfully assess its impacts.

As it currently stands, the information on the record regarding the proposed Project is completely inadequate for the public to meaningfully comment on, or for FERC to meaningfully assess, the true scope of environmental and community impacts that the project would inflict.

In fact, at Adelphia's own admission throughout their Application, the actual size, scope, route, design, and capacity of the project are yet to be finalized. stating that "The final size and scope of the Project and the amount of capacity to be made available will be fully defined based on binding bids received in this Open Season, and Adelphia Gateway reserves the right to increase the capacity of the Project." In their Open Season Notice, they provide a disclaimer stating that they reserve "right to […] to change its route or otherwise modify it." They also state that "upon close of the Open Season, Adelphia Gateway will begin the process of […] finalizing the project design and capacity." While the Open Season closed in December 2017, it is clear from the Application and Resource Reports that Adelphia has yet to finalize these plans.

Adelphia does in fact imply that there are already plans to increase the capacity of the project in the future, stating that the Southern Zone would transport "an expected initial capacity" of 250,000 Dth/d." FERC must require Adelphia to fully disclose it's full intentions for future expansion of the Project.

It is impossible for the public or FERC to meaningfully assess the impacts of this project without knowing the actual scope of the project. It is unacceptable for FERC to allow this level of information to constitute the basis of the public scoping period.

[5] FERC's February 22 letter to Adelphia FERC Request for Third Party Consultant, Adelphia Project FERC Docket No. CP18-46, February 22, 2018.

Even within the narrow scope of the project as currently described, Adelphia greatly underrepresents or ignores completely the level of work, with direct environmental impacts, that is likely required in order to complete the project. The Application states that "no environmental impact is anticipated for the Existing System."[6] However, the existing oil and gas pipelines were built in the 1970's and the majority of the mainline (the southern 50 mile segment) is a fuel oil pipeline that has been unused since 2014. Conversion of this older and unused segment of the pipeline from oil to gas will likely require significant construction and ground-disturbing activity (beyond the Blowdown Assemblies and mainline valve identified) that poses serious health, safety, and environmental consequences that are not adequately discussed in Adelphia's Resource Reports. FERC must require Adelphia require fully detail this work and the full extent of its impacts.

On May 29, 2018, just three days before the close of FERC's scoping period, the Commission posted an "Environmental Data Request," including 23-pages of deficiencies in Adelphia's Resource Reports. Just as FERC acknowledges the magnitude of gaps in the Application materials, it is nearly impossible for the public to provide meaningfully comments intended to "focus the analysis in the EA on the important environmental issues" when such basic and critical project information is missing from the docket. Many of the deficiencies identified in this letter exemplify the level of misinformation throughout Adelphia's Application materials. For example, FERC asks Adelphia to "Clarify the source used to determine that no conservation easements would be crossed by the Project", "as the source provided (NRCS 2015) is for the state of Kentucky's U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) website."

As additional evidence of the flagrant gaps of information of the record, the lack of credibility of the information that is there and level of due process Adelphia undergone in confirming the basic feasibility of their proposal, Exelon Corporation has provided comments on the docket stating:

> "At this stage, Exelon cannot determine whether Adelphia's proposed references to their properties would be acceptable. Adelphia must provide a clearer and more precise statement of intent…"
>
> "It is unclear how near Adelphia intends to locate its Proposed Pipeline facilities to PECO or Delmarva properties and facilities. If Adelphia literally intends to co-habit identical space with PECO or Delmarva, this

[6] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, January 11, 2018.

> intent may be counter to PECO's or Delmarva's existing or future needs and plans for full utilization of lands and ROW."
>
> "It should not be assumed that co-location with above-ground facilities is all that is required. It is important that any proposed co-location not interfere with existing underground facilities or new underground facilities planned by PECO and Delmarva."[7]

FERC must require Adelphia provide full, complete, and detailed description of the project and a full assessment of the extent of its environmental and community impacts.

FERC must require a thorough Systems Alternatives Analysis, including a No Action Alternative.

Adelphia is required to submit an alternatives analysis as part of its application for Certification. FERC is also required to consider alternatives, including a No Action alternative, in order to determine the scope of the EIS under NEPA. As part of that analysis FERC already requires that Adelphia provide evidence that there are no other pipeline systems that currently have existing capacity that could satisfy the contractual volumes of gas. If such capacity existed FERC would likely require that the Project be reevaluated.

In their brief consideration of a No Action alternative in Resource Report 10, Adelphia claims:

> In its current state (i.e., without the proposed Project facilities), the existing IEC pipeline system (Existing System, encompassing both the Northern and Southern Segments) does not include the horsepower or the bidirectional flow capabilities required to provide the proposed 250,000 dekatherms per day (dthd) of transportation capacity into the greater Philadelphia area that would be provided by the Project. Alternate project(s) would be necessary to meet the Project's purpose and need under the No-Action Alternative as the incremental gas supplies available for customers in the area would not be available through existing infrastructure. In order to provide the same benefit as the proposed Project, other transporters would need to replace or upsize their system and facilities to provide comparable service as evidenced by Texas Eastern Transmission, LP's (TETCO's) proposed Greater Philadelphia Expansion, which called for replacing existing pipeline with a larger diameter and adding new pipeline looping. These activities would likely result in greater environmental impacts than the proposed

[7] Comments of Exelon Corporation under CP18-46, February 13, 2018. Accession Number: 20180213-5226

> Project. For these reasons, the No-Action Alternative was rejected from further consideration.[8]

However, Adelphia provided no analysis, supporting data, or modeling that demonstrates that upgrading a different pipeline system would result in similar or worse environmental impacts. In fact, there are several other pipelines are already proposed that appear to have redundant purposes to that of the Project, including the Greater Philadelphia Expansion that Adelphia mentions, as well as the PennEast Pipeline, which received FERC certificate on January 19, 2018.

Additionally, FERC stated in its May 29, 2018 Environmental Data Request that "The proposed Project interconnects with several systems that could potentially be used to transport the incremental volumes of gas proposed", before requesting that it "Provide a Systems Alternatives analysis using the existing interstate natural gas transmission pipelines in the area as a means of meeting the stated purpose of the Project."[9]

This analysis should include, but not be limited to, examining differences in impacts to wildlife species, wetlands and waterbodies, steep slope topography, land disturbance, forest reduction, re-vegetation potential, and health and safety risks. Such a study ensures that the pipeline expansion projects proceed in the most logical sequence, with the least amount of environmental impact.

FERC must also seriously consider viable existing and proposed alternatives in its balancing of the likely public benefit against the adverse impacts associated with the project. If the purpose of the project can be met by existing alternatives, the project provides no public benefit.

FERC must thoroughly examine Adelphia's claims of public need for the Project.

NEPA requires that an environmental assessment "[s]hall include brief discussion of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted." 40 CFR 1508.9(b). Adelphia's assertion of need is contradicted by evidence and is largely a statement of industry need and desires rather than public need.

The Projects statement of need does not assert an actual need for the project:

> The Project is designed to increase available natural gas pipeline capacity to the Greater Philadelphia industrial region with potential to serve additional markets in the Northeast while continuing to provide uninterrupted service to two existing

[8] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 10, FERC Docket No. CP18-46, January 2018.
[9] FERC Environmental Data Request, Adelphia Project FERC Docket No. CP18-46, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.

> power plants at the northern end of the system, the Lower Mount Bethel Power Plant and the Martins Creek
> Power Plant.[10]

While the Lower Mount Bethel Power Plant and Martins Creek Power Plant already receive service at the same capacity proposed by Adelphia, they do not have a need for the Project. Similarly, "increas[ing] available natural gas pipeline capacity to the Greater Philadelphia industrial region with potential to serve additional markets in the Northeast" does not imply an actual need for the project, but only an industry desire.

According to expert reports and analysis, there is no need for the gas Adelphia would carry to the Greater Philadelphia region, Pennsylvania is fully supplied. And to the degree that Adelphia wants to assert it is delivering the gas to other unknown, unidentified states in the Northeast and Mid Atlantic markets--in order to substantiate this claim and subject it to the public process that is required by NEPA, more detail is required that actually identifies the states and the users. As noted in the attached expert report from Arthur Berman "...Pennsylvania has no unfulfilled demand..."[11]

Lack of "need" for gas in Pennsylvania is also asserted by a Labrynth Consulting reaction to a recently released report advocating for more pipelines for similar goals, to fulfill an asserted need for gas and to reduce prices in the region. In this responsive analysis the assertion of a need for the gas was proven false with facts:

> "First, Pennsylvania exported 3.23 Bcfd to other regions of the country in 2015 an amount almost equal to its 2014 consumption of 3.3 Bcfd. There is plenty of existing pipeline capacity to meet Pennsylvania's demand and enough left over to send out of the state."[12]

In its application materials, Adelphia states that the project is designed to provide […] "shippers access to diverse and abundant natural gas supplies through existing interconnects with three interstate pipelines and access to demand centers and end-users near the greater Philadelphia area and the Marcus Hook Industrial Complex," a "state-of-the-art terminalling and natural gas liquids storage facility"

Given that Adelphia has not demonstrated any need for the gas in the Greater Philadelphia area and that natural gas can sell at a significantly higher price overseas as compared to domestically, it is both reasonable and foreseeable that Adelphia transported gas will be transported to Marcus Hook for export. FERC must thoroughly assess Adelphia's claims regarding the need for the project in its balancing of the likely public benefit against the adverse impacts associated with the project.

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[10] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, January 11, 2018., and Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1, FERC Docket No. CP18-46, January 2018.

[11] *Professional Opinion of Proposed PennEast Pipeline Project*, Arthur E. Berman, Petroleum Geologist, Labyrinth Consulting Services, Inc., February 26, 2015

[12] Labrynth Consulting responding to "A Pipeline For Growth Report".

FERC Must Thoroughly Assess All of the Potential Impacts Identified in the Notice of Intent, as well as those Required by NEPA.

The National Environmental Policy Act ("NEPA")[13] requires federal agencies to fully consider the environmental effects of proposed major actions, including actions for which an agency issues permits, such as the construction of natural gas pipelines.[14] Under NEPA and its implementing regulations, FERC is required to consider the full range of environmental impacts, including "ecological (such as the effects on natural resources and on the components, structure and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health whether direct, indirect, or cumulative."[15]

This project requires an environmental impact statement. Under 18 C.F.R. § 380.6(3), any "[m]ajor pipeline construction projects under section 7 of the Natural Gas Act using rights of way in which there is no existing natural gas pipeline," require an environmental impact statement. Adelphia will be converting 50 miles of pipeline that has only been used for oil to natural gas, as well as constructing 4.4 miles of new pipeline for the project. Therefore, DRN believes that such actions constitute "major pipeline construction" and require an EIS. In addition, below, DRN identifies how the proposed project has the potential to "significantly affect the quality of the human environment,"[16] which establishes an EIS is a necessary component of the application in order to ensure a proper environmental analysis is complete.

The following comments identify particular issues of concern within the ten categories listed in the Notice of Intent, including topics that have not been addressed in Adelphia's application and FERC's notice of intent. For FERC's convenience we have arranged the comments to correlate with the categories identified in the Notice of Intent.

Water Resources (Including Surface Water and Groundwater) and Wetland Impacts Must be Fully Considered, Including Providing a Full Accounting of the Number of Waterways and Wetlands to be Crossed and Irreparably Altered.

The entirety of the proposed AGP falls within the Delaware River watershed. The project proposes construction within close proximity to streams, waterbodies, and wetlands, as well as several stream crossings, including the open-cut crossing of Stoney Creek. The project route crosses three known contaminated sites including two RCRA Corrective Action sites and a Superfund site. Additionally, much of the information on the project's water impacts, including hydrostatic testing water withdrawal and discharge

[13] 42 U.S.C. §§ 4321-4370(h)
[14] 42 U.S.C. at § 4332(2)(C).
[15] 40 C.F.R. § 1508.8
[16] 40 C.F.R. § 1508.18.

locations and wetland surveys, is missing from the information on the docket. Adelphia's assertions that the project's impacts are "temporary" and "not expected to affect nearby water bodies" are not supported by their materials and are not compatible with recent and reliable science or observed impacts from other pipeline infrastructure projects.[17] The Adelphia Gateway Project's construction and operation would disturb areas of land and water throughout southeast Pennsylvania and therefore could result in extensive harms to water resources and wetlands. These impacts need to be properly evaluated and considered in order to understand the full implications of this project.

Adelphia has numerous gaps and discrepancies throughout their own Resource Reports and maps as to the number, acreage, and classification of wetlands and waterbodies that would be affected by the project. This missing information is critical both to public safety and for understanding the environmental impacts of the Project. It is concerning that Adelphia has already failed a very fundamental task of resource identification for the Project, as such, this must raise red flags for careful scrutiny in the future by the Commission of assertions made by Adlephia regarding environmental harms resulting from the Project.

According to Adelphia's Resource Reports, a "total of two waterbodies, Marcus Hook Creek and Stoney Creek, would be crossed by the Project."[18] Adelphia proposed for Marcus Hook Creek to be crossed using horizontal directional drill (HDD) methods and for Stoney Creek to be crossed using open-cut (dry or wet) method or HDD method.[19] While these crossings pose serious environmental impacts on their own (discussed in greater detail below), the full extent of waterbody crossings, as well as impacts to water resources more broadly, are clearly missing from the information on the record.

FERC and Adelphia must ensure they identify all waterbody crossings, including any within the existing portion of the system that require construction, including and beyond the blowdown assemblies and new mainline valve. By way of example, the following is only a portion of the information on impacts to water resources that has already been identified on the docket as missing from Adelphia's Resource Reports:

1. "Where the mass quantities of water needed for hydrostatic testing will come from, and how and where the spent water will be dumped has "not yet been determined." RR03, § 3.1.2. [20]
2. Wetland surveys have not been completed. Appendix 2a, § 4.0. [21]

[17] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, January 11, 2018.
[18] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 2, FERC Docket No. CP18-46, January 2018.
[19] Adelphia also notes the possibility of HDD, but reference open cut at most points in the RRs: "Adelphia would cross Stoney Creek either using the open-cut (dry or wet) method or HDD method. Adelphia will decide on the crossing method for Stoney Creek once field surveys of the Tilghman Lateral are complete and will file the decision and any associated documentation with the FERC at that time." Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 2, FERC Docket No. CP18-46, January 2018.
[20] FERC Environmental Data Request, Adelphia Project FERC Docket No. CP18-46, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.

3. Geotechnical surveys are not complete and an HDD Inadvertent Release Contingency Plan—for dealing with drilling fluid spills—has not yet been developed. RR06, § 6.1.5.
4. Whether NJR will try to minimize surface impacts by drilling under Stoney Creek, or will open trench directly though it is yet to be determined. RR03, § 3.1.1."[22]
5. The length and/or area of the Project that would cross the Delaware River Streamflow Zone/New Jersey Coastal Plain Sole Source Aquifer.[23]
6. whether the Sunoco monitoring wells identified along the Tilghman Lateral (TL) near MP TL-3.9 and the two monitoring wells near MP TL-1.2 discussed in section 2.2.1.3 are associated with the known contaminated groundwater sites identified in sections 2.2.1.4 and 8.4. If not, confirm whether the identified monitoring wells are associated with additional groundwater and/or soil contamination and address any proposed mitigation to prevent the spread of contamination at these locations during Project construction. [24]
7. The distance, in feet, between the Quakertown Compressor Station (including temporary workspace) and the adjacent wetland and waterbodies. Provide similar information for the Skippack Meter Station. If a 50-foot buffer cannot be maintained, provide a justification and identify specific measures Adelphia would take to ensure the wetland and waterbodies are not affected by construction activities [25]

Additionally, the Delaware Riverkeeper Network shares the concerns expressed by the Clean Air Council in their Initial Comments[26] on the Project regarding the high likelihood of erosion and sedimentation from construction activities for blowdown assemblies within close, upstream proximities of Ridley Creek and Chester Creek. These impacts are particularly important in light of the damaging repeated inadvertent returns from the construction of Mariner East 2 to Chester Creek and the aesthetic and cultural value of Ridley Creek, "the centerpiece of Ridley Creek State Park, a gem of preserved parkland amid Philadelphia's suburban sprawl." 30.29[27] Adelphia's claim that it "does not expect that Project activities would disturb the waterbodies located in proximity to these sites"[28] is extremely concerning.

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[21] FERC Environmental Data Request, Adelphia Project FERC Docket No. CP18-46, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.
[22] Clean Air Council's Initial Comments on Comments on the Adelphia Gateway Pipeline Project, Clean Air Council, February 13, 2018, Docket No. CP18-46.
[23] FERC Environmental Data Request, Adelphia Project FERC Docket No. CP18-46, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.
[24] FERC Environmental Data Request, Adelphia Project FERC Docket No. CP18-46, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.
[25] FERC Environmental Data Request, Adelphia Project FERC Docket No. CP18-46, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.
[26] Clean Air Council's Initial Comments on Comments on the Adelphia Gateway Pipeline Project, Clean Air Council, February 13, 2018, Docket No. CP18-46.
[27] Clean Air Council's Initial Comments on Comments on the Adelphia Gateway Pipeline Project, Clean Air Council, February 13, 2018, Docket No. CP18-46.
[28] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 2, FERC Docket No. CP18-46, January 2018.

While FERC acknowledges these concerns in its May 29 Environmental Data Request[29], the information that FERC requests—the distance between Blowdown Assembly and waterbody, an evaluation of the potential for storm water runoff, and the impacts that would result on creeks and on Ridley Creek State Park—is not sufficient. FERC must require more in-depth analysis and consideration of the cumulative impacts of Chester Creek Gate Blowdown and nearby actions on the Chester Creek watershed; and must require Adelphia to evaluate the effect of the Paoli Pike Gate Blowdown construction on both the water quality of Ridley Creek and the aesthetics and recreational values of Ridley Creek State Park.[30]

The potential for chemical contamination of water resources and resulting adverse impacts to water resources must be adequately assessed.

Adelphia proposes to cross Marcus Hook Creek using Horizontal Directional Drilling ("HDD"). HDD is the method currently in use in the controversial Sunoco MarinerEast 2 Construction Line. While HDD can be a better way to place a pipeline in environmentally sensitive areas, if done carelessly or in unsuitable geological locations, it can result in damaging aquifers and drinking water resources. As Clean Air Council cautioned in their preliminary comments on the Project:

> As a cautionary example, the use of HDD by Sunoco Pipeline L.P. for the Mariner East pipeline project has not been done properly. Sunoco's HDD

[29] FERC Environmental Data Request, Adelphia Project FERC Docket No. CP18-46, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.

[30] *See* Pennsylvania Department of Environmental Protection (PADEP), *Sunoco Mariner East II – Pipeline Construction Inadvertent Returns – Waters of the Commonwealth*, rev'd January 26, available at http://ehb.courtapps.com/efile/documentViewer.php?documentID=41078 (charting inadvertent returns from
Mariner East 2); compilation of Mariner East 2 inadvertent return reports produced from PADEP, available at http://ehb.courtapps.com/efile/documentViewer.php?documentID=41079 and http://ehb.courtapps.com/efile/documentViewer.php?documentID=41080; *see*, e.g., Affidavit of David A. Mano (detailing well water contamination), available at http://ehb.courtapps.com/efile/documentViewer.php?documentID=41088; Affidavit of David Anspach (same), available at http://ehb.courtapps.com/efile/documentViewer.php?documentID=41101.

29 *See* Pennsylvania Department of Environmental Protection (PADEP), *Sunoco Mariner East II – Pipeline*
Construction Inadvertent Returns – Waters of the Commonwealth, revised January 26, 2018, available at http://ehb.courtapps.com/efile/documentViewer.php?documentID=41078 (charting inadvertent returns from
Mariner East 2); PADEP Notice of Violation to Sunoco Pipeline L.P., November 3, 2017, attached as Exhibit C hereto (regarding HDD crossing Chester Creek, "DEP is concerned that the above-cited Inadvertent Return ('IR') is the sixth known IR from this Drill").

30 *See* Pennsylvania Department of Conservation and Natural Resources, *Ridley Creek State Park*, available at http://www.dcnr.pa.gov/StateParks/FindAPark/RidleyCreekStatePark/Pages/default.aspx (last visited Feb. 12, 2018); *see also* Visit Philadelphia, *Ridley Creek State Park: More than 2,600 acres of gently rolling woodlands and meadows*, available at http://www.visitphilly.com/outdoor-activities/philadelphia/ridley-creekstate-park/ (last visited Feb. 12, 2018).

has resulted in contaminating dozens of water wells across Pennsylvania and spilling drilling fluids in over 160 locations.[31]

The EIS needs to carefully and accurately consider not only the actual number and size of streams and wetlands crossed, but also the acreage, vegetation, and slope of forested and wild open space affected by the project and the associated damage to water quality in order to fully and fairly consider the project impact on water resources. Adelphia cannot be allowed to continue to dismissively and deceivingly under-count and under-value the resources harmed.

The proposed Project, as demonstrated by the installation of other pipeline projects in our region and nation, will create new pathways for water flow, thereby altering the hydrologic pattern of the watershed and adversely impacting (in both quantity, quality and seasonal timing) streams, wetlands and drinking water sources.

RCRA and Superfund Sites pose a threat to waterbodies

The project route crosses three known contaminated sites: two RCRA and one Superfund site. Adelphia claims that the project will not disturb these sites, yet does not include any evidence to this effect nor any plans to ensure that this will result. If proper precautions are not followed, disruption of remediation plans at the sites could lead to the spread of contaminated water or soil, threatening the health of pipeline employees, the local community, and local environment.

Need a Proper Analysis of the Effects on Existing ROW

A proper analysis needs to account for the repercussions of clearing vegetation from the ROW.

Current practices call for the ROW to be clear of vegetative matter. Herbicides are frequently used to accomplish this task. Creating and maintaining the ROW could result in increased and repeated herbicide use on or near the federal, state, and county parklands and, as run-off capacity will be intensified in the ROW due to lack of vegetation and forest cover and due to increased soil compaction resulting from pipeline construction, there will be an increased level of herbicides discharging directly (or through stormwater systems) into tributary streams, wetlands and the downstream Delaware River. In addition, the removal of vegetation and increased soil compaction will create a direct route for stormwater runoff from neighboring lands which may be treated by other property owners with herbicides, pesticides, fertilizers, and/or other chemicals that could/would then be transported and discharged into nearby water bodies either directly or through stormwater collection systems. The EIS must consider and question the necessity of the proposed width of permanent clearance considering the harms it poses to

[31] Clean Air Council's Initial Comments on Comments on the Adelphia Gateway Pipeline Project, Clean Air Council, February 13, 2018, Docket No. CP18-46.

the environment. The ease of aerial inspection of the pipeline should not, and cannot, trump the resulting environmental harms associated with gratuitously wide ROW permanent clearings.

Beyond chemical contamination, water quality impacts will also result from an increase in suspended solids in the water due to erosion resulting from the increased volume of stormwater runoff that will result from removal of vegetation and increased soil compaction and from the removal of streamside vegetation thus depriving streams of the natural armoring of vegetative root systems. Upon entering the stream ecosystem, this increase in suspended solids will result in a reduction to the streams' water bearing capacity, in turn reducing oxygen availability and impacting aquatic plant and animal species, including habitat for fish reproduction and macroinvertebrate diversity. Each of these factors must be individually reviewed at all water crossings.

According to expert observation, pipeline trenches can divert groundwater and as a result "permanently alter the hydrologic cycle in the vicinity of the pipeline right-of-way. This alteration will decrease the water resources available to support wetland hydrology and stream base flow in the summer and fall dry season."[32] The compacted soils resulting from pipeline and facility construction increase rainfall runoff and reduce ground water infiltration. This can cause further negative impacts on wetland hydrology and stream baseflow in the area of the pipeline and above ground facilities.[33] "Increased runoff as a result of compacted soils, and increased drainage of shallow ground water" around a pipeline, due to previous and proposed construction practices, can increase "surface water flow and groundwater discharge in the wet winter and spring seasons and decrease summer and fall ground water discharge which supports wetland hydrology and stream base flow."[34] The result of reduced groundwater discharge during the dry summer and fall months can decrease the size of supported wetlands. So the result is too much or too little depending on the time of year. Another result of the altered flows can be to decrease stream baseflow that supports aquatic life and trout habitat in headwater streams in the dry summer and fall period.

Furthermore, the installation of the Project will involve drilling and digging into the bedrock, the potential effects of this must be considered. If these activities result in interception of the water table, dewatering activities would result in the localized drawdowns of water table elevation and could impact local wells. Construction activities may also result in contamination of groundwater by creating a direct flow of contaminants, including herbicides, into local aquifers. FERC must determine whether any of the aquifers along the ROW or facility cites are sole-source as this would magnify any negative impacts of construction. Protection of groundwater is a crucial concern for residents being impacted by the gas pipeline, and therefore, the negative impacts to groundwater quality and quantity must be heavily weighted in FERC's review of the public necessity of this Project. This review must also take into account any costs that

[32] Affidavit of Peter M. Demicco, DRN v. PA DEP an TGP NEUP, 2012.
[33] Id.
[34] Id.

would be borne by these municipalities if the Project depleted the quality of the water supply and groundwater to a point that water treatment facilities become necessary.

Furthermore, increasing the runoff potential of soils due to compaction will negatively impact groundwater recharge areas surrounding the ROW. By removing the topsoil layer and associated forest litter and humus, runoff will decrease the soil porosity and moisture retention capacity. This will induce even greater levels of runoff and will damage the groundwater recharge capabilities of the ecosystem. The decreased ability to absorb water resulting in runoff and sedimentation severely decreases water quality. Previous FERC jurisdictional projects have resulted in significant soil compaction issues. The EIS must identify ways in which previous soil compaction problems can be avoided or properly remediated. A restatement of previous practices would be unacceptable.

To determine current water quality, the NEPA document must include a survey of the established benthic community in potentially impacted streams. This should include the composition, quantity, and diversity of the community using standardized sampling protocols consistent with the state's assessments. Anti-degradation streams that have special designations warrant special attention and protection, especially when a tributary has Category 1, Exceptional Value or High Quality designation. Furthermore if a stream has an existing TMDL and is not meeting its existing water quality, more attention is also warranted. Potential water quality impacts should also be evaluated including further discussion of construction related impacts that include the possibility of fuel spills, compaction from parking and staging equipment and contamination of runoff and further erosion and sedimentation. Any potential channel relocations that occur due to construction must be studied as an impact. Installing the Project will require stream diversions that will also impact wetland areas. These areas of stream channel modification must be identified so that the impacts on wildlife resources be can fully examined with the coordination of NPS, Fish and Wildlife Service, and New York State environmental agencies.

Adverse impacts to wetlands to be crossed or adjacent to construction or ground work need greater due care, attention and assessment than we have seen with previous pipeline environmental reviews

Despite their tremendous value, more than half of America's original wetlands have been lost to development, agriculture, mining, hydrology alterations and pollution.[35] And, each year we continue to decimate nearly 500,000 additional acres of wetlands.[36]

Loss of wetlands can have repercussions felt through the environmental ecosystem. Such losses increases soil erosion, damages water quality and allows

[35] *"America's Wetlands, Our Vital Link Between Land and Water"*, US EPA Office of Wetlands Protection, Office of Water, Doc. No. OPA-87-016, February 1988, p. 6.
[36] Michael J. Caduto, Pond and Brook, A Guide to Nature in Freshwater Environments, University Press of New England, 1985

increased sedimentation and polluted runoff into streams.[37] Increased stormwater flows can upset the "dynamic equilibrium" that exists between wetlands and the surrounding watershed. Changes in volume or quality of runoff to wetlands can affect the biological community and ecological functions of a wetland.

Generally, wetlands work as an integrated system with other wetlands in a watershed. When assessing the value, or lost value, of wetlands, it is important to recognize this critical interrelationship.[38] Below are just some of the benefits of wetlands that will be disrupted by this Project that should be accounted for when FERC conducts its review.

- Wetlands provide productive and diverse ecosystems for both aquatic and terrestrial wildlife[39] and produce biomass for the base of the food chain.[40]
- Wetlands of all sizes, both large and small, have been demonstrated to provide important habitat for a wide variety of plants and animals, many of which could not survive without them.[41] Forty-two percent of the "total U.S. threatened and endangered species depend upon wetlands for survival."[42]
- Wetlands provide a diverse and complex set of ecosystems -- niches that function as an irreplaceable ecological unit.[43]
- Wetlands dense vegetation act as a natural pollution filter thereby providing irreplaceable water quality benefits filtering out out sediment, nutrients and other pollutants,[44] as well as pesticides and heavy metals and can reduce water-borne bacterial contamination through microbial action.[45]
- Wetlands provide flood control, erosion control and groundwater recharge.
- Wetlands are part of nature's sponge, holding water, feeding plants, and slowly recharging aquifers.
- Wetlands effectively absorb and hold floodwaters thereby protecting adjacent and downstream properties from flood damage.[46] Depending on the soil type, wetlands can contain 1 to 1.5 million gallons of water per acre, thereby alleviating flooding by holding excess water like a sponge.[47] At the same time, wetland vegetation helps to slow the speed of floodwaters - this in combination with the storage capabilities of wetlands can both lower flood heights and reduce the erosive potential of floodwaters.[48]

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[37] Clean Water Network and NRDC, *"Wetlands for Clean Water, How Wetlands Protect Rivers, Lakes and Coastal Waters from Pollution"*, April 1997.
[38] *Ibid.* 15, 4.
[39] National Wildlife Federation Fact Sheet -- nwf.org/wetlands/facts/benefits.html
[40] Michael J. Caduto, Pond and Brook, A Guide to Nature in Freshwater Environments, University Press of New England, 1985, p. 29
[41] National Wildlife Federation, "Status Report of Our Nation's Wetlands", October 1987.
[42] DNREC and Brandywine Conservancy, Conservation Design for Stormwater Management: A Design Approach to Reduce Stormwater Impacts from Land Development and Achieve Multiple Objectives Related to Land Use, September, 1997, p. 2-11.
[43] *Ibid*. 21
[44] Clean Water Network and NRDC, *"Wetlands for Clean Water, How Wetlands Protect Rivers, Lakes and Coastal Waters from Pollution"*, April 1997.
[45] *Id.*
[46] *Ibid.* 15, 4.
[47] Bob Schildgen, *"Unnatural Disasters"*, Sierra, June 1999.
[48] *Ibid* 15, 4.

- Wetlands can also desynchronize flood peak flows and velocities during small runoff events.[49]

The analysis should also consider wetland delineations and an assessment of values and functions of wetlands impacted by Adelphia directly or indirectly are needed. The analysis should also include an examination of hydrology, vegetation, and soils. As well as an assessment of function and value considering all ecosystem services being provided that are listed above,, so that potential impacts, alternatives, and avoidance of wetlands and their important natural buffers can be properly assessed.[50]

Additionally, the NEPA document must fully assess impacts to wetlands directly including, but not limited to changes in water levels, flow characteristics, and circulation patterns, the impacts of temporary and permanent alteration of vegetation in and around wetlands, altered temperatures, changed light, altered humidity, altered groundwater or surface water flows, and/or altered flooding frequencies due to the Project. This information is significant as changes in substrate conditions may affect the ability of the wetland to sustain vegetation and wildlife populations including sensitive amphibian populations. For example, repeated maintenance and lagging restoration practices that span over multiple seasons/years could impact important amphibian and fish migrations and critical reproduction periods if biological windows are not considered.

FERC needs to be sure that once studies have been done and a plan is established, Adelphia will abide by it. It has been observed and documented by DRN and Conservation District staff around prior pipeline projects that once the pipeline is moving gas, the final restoration phases by the operator are often not a priority leading to inflicted or unnecessary additional harm to sensitive species, due to improper timing or unnecessary delays. Increased run-off as addressed above may introduce contaminants or more sedimentation to the ecosystem. Increased nutrient loading could produce algal blooms and reduce available oxygen in the water. Any impacts to the physical characteristics of wetlands resulting from the construction and operation of the AGP and any associated appurtenances of land, water, air or light transformations must be included in any analysis.

Adverse Impacts to Floodplains, Including Their Permanent Alteration, Must Be Given Full Consideration

Floodplains vegetated with trees and shrubs can be four times as effective at retarding flood flows as grassy areas.[51] In addition, naturally vegetated floodplains provide breeding and feeding grounds for both fish and wildlife, they "create and enhance waterfowl habitat", and they "protect habitat for rare and endangered species."[52] Naturally vegetated floodplains are generally layered with leaf and organic matter which

[49] *Ibid* 22.
[50] Schmid and Company Inc. *The effects of converting forest or scrub wetlands to herbaceous wetlands in Pennsylvania*. Prepared for the Delaware Riverkeeper Network, Bristol, Pennsylvania, 2014.
[51] *Ibid* 22.
[52] *Ibid* 22

result in organic soils with high porosity and a greater capacity for holding water.[53] The floodplain, in this natural state, is a riparian ecosystem that needs the overbank flows that the natural watershed's hydrology provides in order to remain healthy and in balance.[54] According to the U.S. Environmental Protection Agency, the number one source of pollution to our nation's waterways is from nonpoint sources, including pollution from floodwaters, washed from the land in stormwater runoff.[55] About 40% of the nation's waterways are polluted as a result.[56] Floodplains play a key role in reducing stormwater flows and containing floods, filtering out nonpoint source pollution, thereby reducing pollutant loading and protecting water quality.

The benefits of naturally vegetated and healthy floodplains include:

- Stores and slows floodwaters;
- Intercepts overland flows, capturing sediment;
- Stabilizes streambanks, preventing erosion;
- Protects wetlands and other critical habitats;
- Replenishes groundwater aquifer;
- Filters out and/or transforms pollution;
- Provides recreation and education;
- Trees and other riparian vegetation: provide wildlife habitat; process nutrients and other would-be pollutants; shade and cool waterways; provide food for wildlife and stream insects (detritus); provide beauty and refuge.

Not only are there numerous benefits from naturally vegetated floodplains, they provide protection for local communities as well. Unnatural flood levels and flood damages are experienced by communities living along the Delaware River and tributary streams. In addition, removal of vegetation along water systems removes the natural armoring that helps prevent accelerated erosion from unnaturally high flood flows. The ramifications, individually and cumulatively, of the multitude of proposed stream crossings for flooding, flood peaks, flood damages and erosion must be considered.

Finally, accelerated runoff produced along the ROW and steep slopes of above ground facility sites that will result in more erosion and deposition within streams, increased transport and loading of contaminants, increase in flood peaks due to accelerated runoff (in turn reducing the amount of water entering the ground), decrease in groundwater recharge, blocked or diverted groundwater flow, soil compaction, and the removal of habitat and food sources for wildlife and aquatic life. These impacts can also produce a "ripple" effect by upsetting the balanced ecosystem of the landscape through construction activities.

The Delaware River's health and the health of its tributary streams are threatened by loss of its floodplain and the resulting repercussions. Therefore, adverse impacts to

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[53] *Ibid* 22

[54] Poff, Allan, Bain, Karr, Prestergaard, Richter, Sparks, and Stromberg, "The Natural Flow Regime", BioScience, Vol. 47, No. 11.

[55] Chester L. Arnold Jr., and C. James Gibbons, *"Impervious Surface Coverage, the Emergence of a Key Environmental Indicator"*, APA Journal, Spring 1996, p. 245.

[56] *Id.*

beneficial floodplain values must be considered in the short term, long-term, and cumulative impacts of these alterations.

The Destruction of Naturally Vegetated Buffers Along All Wetlands and Waterways Must Be Given Full Consideration

Healthy and vegetated streamside buffers serve our communities by:

- Providing flood storage,[57] reducing flood peaks, [58] and slowing the velocity of floodwaters,[59] and thereby reducing flooding and damaging flows in downstream and nearby communities;
- Protecting and enhancing water quality by preventing and filtering pollution[60] and enhancing the ability of the neighboring stream to process pollutants,[61] thereby protecting drinking water supplies, recreational uses of our waterways, commercial and recreational fisheries, ecotourism, and business operations that need clean water;
- Recharging aquifers that supply drinking water and base flow to streams;[62]
- Providing and enhancing birding, fishing, hiking, and other recreational opportunities that are so critical to our region's aesthetic beauty and community quality of life;
- Providing and enhancing the quantity and quality of habitat[63] to aquatic life, animals, birds and plants that are important to our watershed ecologically, economically, recreationally and psychologically;
- Providing organic matter critical for supporting aquatic organisms; [64]
- Providing shading and thereby providing water temperature control [65] important for the quality of the stream including the health of the habitats and aquatic organisms present;
- Reducing flood damages by ensuring structure-free zones devoid of structures to be harmed;
- Protecting public and private lands from erosion and helping streambanks maintain their integrity in order to prevent/minimize the costs and harms of sedimentation and restoration;[66]

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[57] Tourbier, J. Toby *"Open Space Through Stormwater Management, Helping to Structure Growth on the Urban Fringe"*.

[58] Army Corps of Engineers WRAP, *"Technical and Scientific Considerations for Upland and Riparian Buffers Strips in the Section 404 Permit Process"*, ERDC-WRAP-01-6, May 2002, citing DeBano and Schmidt 1990; O'Laughlin and Belt 1995".

[59] *Id.*

[60] NJAC 7:8 NJDEP Agency Proposal Document at NJAC 7:8-5.5(h), USEPA, *"Pesticide Tolerance Reassessment and Re-registration, Terbufos IRED Facts"*, EPA 738-F-01-015, October 2001; *Id.*

[61] Sweeney & Blaine, *"Resurrecting the In-Stream Side of Riparian Forests"*, Journal of Contemporary Water Research & Education, Issue 136, June 2007.

[62] Castelle, Johnson, Conolly, *"Wetland and Stream Buffer Size Requirements – A Review"*, J. Environ. Qual. 23:878-882 (1994); NJAC 7:8 NJDEP Agency Proposal Document at NJAC 7:8-5.5(h), page 77; *Ibid. 38*

[63] *Ibid. 38*, citing DeBano and Schmidt 1990; O'Laughlin and Belt 1995"

[64] *Ibid. 38*, citing DeBano and Schmidt 1990; O'Laughlin and Belt 1995".

[65] *Ibid. 38*, citing DeBano and Schmidt 1990; O'Laughlin and Belt 1995".

- Increasing the market value and marketability of nearby homes and communities; [67]
- Increasing the opportunity for and success of ecotourism businesses dependent on the aesthetic beauty of the river and its ecological health; and
- Maintaining the unique ecological and historical qualities of our River and region that are an international draw. [68]

Additionally, vegetated buffers and floodplain areas are an important food source for aquatic microorganisms, invertebrates, and fish.[69] In small headwater streams, as much as 60 to 90 percent of the organic food base comes from surrounding forests.[70] The life cycles of the aquatic invertebrates, and in turn the fish, are closely tied to these organic inputs from the forest.[71] In the larger waterbodies, the vegetation provides refuge as well as havens where the smaller fish can find food.[72] The roots, fallen logs, pools, overhanging branches, and other habitats that vegetation along the banks creates provides important habitat for fish young to old. [73]

Multiple studies have documented that waterways surrounded by mature woodlands provide a greater variety of important aquatic habitat, support a greater diversity of fish species, and support fish in healthier physical condition than waterways where the forest cover has been removed.[74] The overhead cover provided by forested streamside lands provides shading and temperature control – this directly affects the amount of oxygen the water can support.[75] Increased temperatures have been found to alter the release rate of nutrients from suspended sediments.[76] For example, ust small increases in temperature can increase substantially the amount of phosphorus released into water.[77]

Shading from buffers reduces overall temperatures but also reduces the daily and seasonal fluctuations in stream temperature, which is important for healthy habitat. Studies have concluded that removal of streamside vegetation can result in a stream

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[66] Water, Science, and Technology Board, Board of Environmental Studies and Technology, *"Riparian Areas: Functions and Strategies for Management"*, 2002, citing Swanson, et al; Center for Watershed Protection, *"Impacts of Impervious Cover on Aquatic Systems"*, Watershed Protection Research Monograph No. 1, March 2003; *Ibid. 38*

[67] Center for Watershed Protection, Better Site Design: A Handbook for Changing Development Rules in Your Community, August, 1998, Pg. 134, Lutzenhiser, M. and N.R. Netusil. *"The Effect of Open Spaces on a Home's Sale Price."* Contemporary Economic Policy 19.3 (2001): 291-298.

[68] For example, "Pennypack Park in Philadelphia is credited with a 38% increase in the value of a nearby property." Center for Watershed Protection, Better Site Design: A Handbook for Changing Development Rules in Your Community, August, 1998, p. 134

[69] J.C. Klapproth & J.E. Johnson, Virginia Cooperative Extension, Understanding the Science Behind Riparian Forest Buffers: Effects on Plan and Animal Communities, October 2000, Publication number 420-152.

[70] *Id.*

[71] *Id.*

[72] *Id.*

[73] *Id.*

[74] *Id.*

[75] *Id.*

[76] *Id.*

[77] *Id.*

temperature increase of 6 to 9 degrees Centigrade.[78] Such an increase can cause heavy growth of filamentous algae and encourage [79] growth of parasitic bacteria.some species simply cannot survive in warmer water so even seemingly slight temperature changes (the 6 to 9 degree range) can shift the structure of the aquatic community.[80]

Buffers are beneficial also for protecting waterways and communities from other pollutants such as herbicides and pesticides.Removal of forests and vegetation results in polluted runoff, which because of the lack of a vegetated buffer, will enter directly the neighboring stream or river. This kind of polluted runoff includes sediment, nutrients, pesticides, animal waste and more. Too many nutrients in a waterbody, including both phosphorous and nitrogen, encourages an overgrowth of algae and other aquatic plants. Sediment can block the penetration of light in water, affecting the growth and reproduction of aquatic plants. [81] When sediment settles it can cover stream bottom habitats interfering with the feeding or reproduction of fish and aquatic insects dependent upon them. [82] These repercussions will not just be felt where the Project is occurring but through the entire water body. When reaches of a stream with natural function are intersected with dysfunctional reaches there is a net loss in the ability of the stream to provide their water cleaning and protection benefits including processing of nutrients, pesticides, and organic matter. [83] Vegetated buffers prevent erosion of stream banks and adjacent lands – including both public lands and private lands. Root systems of woody shrubs and trees do a better job of anchoring these soils — this is a function that turf grass, or low growing vegetation as is often found at pipeline stream crossings, simply cannot do effectively.[84] Research has concluded that forested buffer systems, as opposed to grassed systems or other herbaceous plants, provide an enhanced ability to sequester contaminants instream and to degrade them; this is primarily due to increased biological activity. Increased nitrogen attenuation and pesticide degradation are particularly associated with forested stream buffers.[85]

The removal of healthy forested buffers along the stream crossings proposed by Adelphia must be assessed – individually and cumulatively. In addition, when the stream

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[78] Leavitt, J. 1998. The Functions of Riparian Buffers in Urban Watersheds", page 4, Master of Science Degree Report, University of Washington, Seattle, WA.
[79] *Ibid*. 49
[80] *Ibid*. 49
[81] David Welsch, Riparian Forest Buffers, US Dept of Agriculture Forest Service, NA-PR-07-91, Available at: http://www.na.fs.fed.us/spfo/pubs/n%5Fresource/riparianforests/
[82] David Welsch, Riparian Forest Buffers, US Dept of Agriculture Forest Service, NA-PR-07-91, Available at: http://www.na.fs.fed.us/spfo/pubs/n%5Fresource/riparianforests/
[83] B.W. Sweeney, Bott, Jackson, Kaplan, Newbold, Standley, Hession and Horwitz, Riparian deforestation, stream narrowing, and loss of stream ecosystem services, Proceedings of the National Academy of Sciences of the United States of America, Vol 101, No. 39, Sept 28, 2004.
[84] National Research Council. 2002. Riparian Areas: Functions and Strategies for Management. Water, Science, and Technology Board, Board of Environmental Studies and Technology, National Academy Press, Washington, DC. Also see Stroud Water Research Center, Protecting Headwaters: The Scientific Basis for Safeguarding Stream and River Ecosystems, 2008.
[85] B.W. Sweeney, Bott, Jackson, Kaplan, Newbold, Standley, Hession and Horwitz, Riparian deforestation, stream narrowing, and loss of stream ecosystem services, Proceedings of the National Academy of Sciences of the United States of America, Vol 101, No. 39, Sept 28, 2004.

crossing includes a cut through a pre-existing mature and healthy forest the degradation of the forest on either side of the Right of Way that results from this forest fragmentation needs also to be considered, both in terms of stream impacts and forest impacts. These and other impacts on waters along the proposed Pipeline route are significant, cumulative with other existing and foreseeable impacts, and must be treated seriously and considered thoroughly in EIS.

The Pending Socioeconomic Impacts on Communities by the Pipeline Are Significant and Require A Through Analysis Under NEPA.

Congress enacted NEPA with the purpose "to use all practicable means and measures .. .to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."[86] Courts have established that a socioeconomic analysis is required when the effect results from a project's environmental impact.[87] Therefore "whether an impact on the "human environment" must be addressed depends on "the closeness of the relationship between the change in the environment and the '**effect**' at issue."[88]

The environmental economic effects of pipelines can occur in 5 ways:[89]

1. Effects on Ecosystem Service Value: the benefits nature provides such as purified water and recreation opportunities
2. Effects on property values: loss of property that occurs as a result of pipeline right-of-way, evacuation zone, compressor station, and viewshed.
3. The Social Cost of Carbon: economic harm associated with the emission of carbon
4. Effects on economic development: economic effects felt by other industries due to the project including the "dampening of growth prospects or even a reversal of fortune."
5. Public Health and Community Costs: the costs of impacts to public health which occur due to the operation of the pipeline and compressor stations and impact of construction and operation on municipal and county community services

Under a proper review all of these categories need to be addressed and analyzed. Yet, Adelphia fails to examine any of these 5 factors. Instead, glossing over any long term detrimental impacts by focusing on the short term beneficial ones. This is not a thorough analysis, nor will it satisfy the economic requirements under NEPA.

Such short term economic impacts Adelphia estimates that they will employ 150 temporary and out-of-town workers for the job.[90] And has even stated in their report that

[86] 42 USC § 4331(a).
[87] *Hammond v. Norton*, 370 F. Supp. 2d 226, 243 (D.D.C. 2005)(citations omitted)
[88] *Hammond v. Norton*, 370 F. Supp. 2d 226, 243 (D.D.C. 2005)(citations omitted)
[89] *Economic Costs of the PennEast Pipeline*, Spencer Phillips, PhD, et al., Key-Log Economics, LLC. January 2017, Available at: http://www.delawareriverkeeper.org/sites/default/files/Economic%20Harms%20Attachment%204%2C%20Key-Log%20Economics%2C%20LLC%2C%20Economic%20Costs%20of%20the%20PennEast%20Pipeline%2C%20January%202017..pdf at 7
[90] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 5, FERC Docket No. CP18-46, at pg. 8, January 2018.

the project will only "result in short-term, beneficial impacts in terms of increased payroll and local material purchases."[91] In order to ensure a proper evaluation, FERC must thoroughly analyze the effects on the economy that this project will bring, both short and long term. Such an analysis is required by NEPA and will ensure a proper evaluation of the project.

Impacts to Lands Use must be Fully Assessed and Avoidance of Forested Land and Preserved Open Space Must Be Given Full Consideration.

While Adelphia claims the project will impact only 42.2 acres for construction and 9.4 acres for operation, the impacts of converting the 84 miles of existing oil and gas pipeline have been largely ignored, with the Application stating that "no environmental impact is anticipated for the Existing System." However, the existing oil and gas pipelines were built in the 1970's and the majority of the mainline (the southern 50 mile segment) is a fuel oil pipeline that has been unused since 2014. Conversion of this older and unused segment of the pipeline from oil to gas will likely require significant construction and ground-disturbing activity that poses serious health, safety, and environmental consequences that are not adequately discussed in Adelphia's Resource Reports. FERC must require Adelphia require fully detail this work and the full extent of its impacts.

The variety of harms that would result from the proposed cuts through preserved open space must be fully and fairly considered – whether the open space is preserved by purchase or conservation easement.

FERC must require the applicant to consider alternative routes that do not impact public open space. Companies routinely propose pipeline routes that impact public open space because these lands are valued at a lower rate when compared to non-preserved lands. FERC must not permit this "savings" to the applicant to drive the siting process. Public and preserved lands must be priced according to their value. FERC must deter this strategy for siting the pipeline and consider the distorted pricing of open space as it evaluates alternative routes for this Project and as it considers the cumulative environmental harms of the proposed pipeline Project. It is DRN's position that FERC's approach to evaluating cumulative impacts gives inadequate consideration to the distorted incentives for pipeline companies to target protected open space – whether protected through purchase or conservation easements.

Natural areas are critical for water quality, have more stable soils, provide habitat for plants and animal species, and help maintain the value of historical sites. Loss of open space adversely impacts water quality, aquatic habitat, and the intact ecological health that is otherwise benefitted by the preserved open space. Pipeline passage through open space significantly reduces scenic character and recreational opportunities thereby adversely impacting jobs and economic benefits associated with recreation, vacation and other related industries.

[91] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 5, FERC Docket No. CP18-46, January 2018.

Realtors and homeowners in the region have asserted that the presence, or even the potential presence, of shale gas infrastructure facilities, especially compressor stations, adversely impacts the marketability of nearby homes. FERC must fully and fairly consider these harms and require quantifiable and documented data to support any assertions/findings. Potential impact blast zones and the environmental and property harm it would cause along the entire pipeline corridor if an accident were to happen must also be considered in the analysis of this increase in the system's capacity.

The impacts to the market value and marketability of homes that will result from the removal of mature vegetation to make way for the pipeline loop and additional facilities (both permanent ROW and compressor station site as well as their temporary construction areas that will not be fully restored) must also be fully and fairly considered. Healthy, mature, vegetated buffers along waterways are known to enhance property market values. For example, "Pennypack Park in Philadelphia is credited with a 38% increase in the value of a nearby property."[92] In addition, "[t]wo regional economic surveys documented that conserving forests on residential and commercial sites enhanced property values by an average of 6 to 15% and increased the rate at which units were sold or leased."[93] And in a survey conducted by the National Association of Home Builders, 43% of home buyers paid a premium of up to $3,000, 30% paid premiums of $3,000 to $5,000, and 27% paid premiums of over $5,000 for homes with trees.[94] To the extent the Project will be cutting down forests and buffers and replacing them with low growing grasslands, and to the extent that the forest fragmentation caused by pipeline and facility construction and maintenance will result in additional forest degradation as far as 300 feet back on either side of the ROW and facility sites, the impacts to home market values and marketability must be accounted for.

Fishery Impacts Need Full Consideration

Benthic invertebrates are impacted during the construction phase of a pipeline whenever any of the open trench cut methods are used. Changes in downstream diversity and structure of benthic invertebrate communities can result. While, in time, the benthic community generally restores, that does not diminish or negate the ecosystem effects during the time of damage including the other cascading affects to other ecosystem services otherwise provided by the invertebrates – including as food for other dependent species, the water quality benefits provided by invertebrates helping with nutrient breakdown, and the breakdown of instream detritus creating food for other species.[95] These impacts must be thoroughly considered.

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[92] Center for Watershed Protection, *Better Site Design: A Handbook for Changing Development Rules in Your Community*, August 1998, p. 134.
[93] Center for Watershed Protection, *Better Site Design: A Handbook for Changing Development Rules in Your Community*, August 1998 Citing two studies by Morales and Weyerhauser.
[94] Cheryl Kollin, "Designing with Nature and Showing the Benefits", Land Development, National Association of Home Builders, Winter, 1997.
[95] *Id.*

Using the open trench cut method of crossing can also affect fish, including direct harm but also by reducing the suitability of habitat including for eggs, juveniles and overwintering.[96] Fish exposed to elevated suspended solids levels can experience reduced feeding rates, physical discomfort or damage from the abrasive materials on their gills, decreased instream visibility, reduced food supply, and increased competition as fish attempt to move to cleaner waters.[97] For example, the filling of riffles not only can have adverse impacts for invertebrates and fish, in terms of taking important habitat, but it can also diminish the ability of the riffles to help create oxygen important for aquatic life.[98] Over time these impacts can depress the immune system of fish, result in lower growth rates, result in increased stress on individuals and populations, cause damage to the gills – all of which can result in a decline in fish and population health and survival rates.[99] This of course all gets compounded by adverse effects to the suitability of habitat for eggs and juveniles necessary to support the overall community and population.[100] Additionally, downstream sedimentation and also disruption of flows during crossing activities can result in areas of the stream that are shallower or dewatered, thereby taking preferred habitat.[101] These impacts must be thoroughly considered – including both short term and long term impacts.

All of the aquatic, fish, amphibian and invertebrate species located in and/or around the streams, rivers and/or wetlands to be crossed or impacted by the project must be thoroughly catalogued, their population status considered, and the ramifications of the AGP construction and operation on aquatic individuals and communities must be analyzed. For example, the headwater streams impacted by the Project must be surveyed for native brook trout. The crossing of multiple streams, including trout waters, will have a large impact on the trout populations and spawning in the region, especially during construction, and will degrade the waterways long after the Project is completed.

Not only must the impact on present species be assessed, but the impact on habitat potential for species that once inhabited the area, or could inhabit it in the future if properly protected must also be considered.

Among the impacts resulting from construction of the Project, the NEPA document must also examine impacts to all aquatic ecosystems caused by the channelization of groundwater and surface water to new areas as it runs parallel to the new pipeline. For example, a gas pipeline installation that crossed the Musconetcong River in Asbury, New Jersey resulted in an alteration in the channelization of groundwater towards running parallel with the pipeline and away from the river, decreasing water levels in the river and

[96] *Ibid* 1.
[97] Pipeline Associated Watercourse Crossings, 3rd Edition, publication prepared for CAPP, CEPA, and CGA by Tera Environmental Consultants.
[98] *Ibid* 1.
[99] *Ibid* 1.
[100] *Ibid* 1.
[101] *Ibid* 1.

negatively impacting trout spawning and macroinvertebrate populations.

Impacts to Vegetated Habitats and Dependent Species Needs Full Cataloguing, Consideration and Review

The Project, as proposed, requires the removal of vegetation from the ROW and large portions of the above ground facility cites. This will have a multitude of direct and secondary effects including increased runoff and soil erosion, encroachment and establishment of invasive species, and destruction of wildlife habitat, loss of biodiversity, loss of forest cover and forest edge impacts to the remaining forest, and increased use of herbicides along the ROW that will impact the surrounding ecosystem. The impacts of modifying the various vegetative ecosystems along the length of the project must be assessed, including both direct and indirect effects of project construction and operation. Among the vegetative and ecosystem impacts in need of careful consideration is the impact of forest ecosystems. These impacts must all be identified and accounted for in the EIS.

Pipeline and associate infrastructure construction results in the loss of riparian (streamside) vegetation.[102] For each of the pipeline construction techniques, there is a resulting loss of vegetation and foliage associated with clearing the stream banks. Riparian vegetation is an important part of a healthy ecosystem and protects the land adjoining a waterway which in turn directly affects water quality, water quantity, and stream ecosystem health. The body of scientific research indicates that stream buffers, particularly those dominated by woody vegetation that are a minimum 100 feet wide, are instrumental in providing numerous ecological and socioeconomic benefits.[103] Simply put, riparian corridors protect and restore the functionality and integrity of streams. A reduction in streamside healthy and mature streamside vegetation reduces stream shading, increases stream temperature and reduces its suitability for incubation, rearing, foraging and escape habitat.[104] While horizontal directional drilling may move the construction footprint further away from the stream, it too results in vegetative losses and soil compaction that can have direct stream impacts.

The loss of vegetation also makes the stream more susceptible to erosion events, exacerbating the sedimentation impacts of construction. In crossings that result in open forest canopies, increases in channel width, reduced water depth, and reduced meanders have persisted in the years after using an open cut method of installation.[105]

[102] James Norman, et al., Utility Stream Crossing Policy, ETOWAH AQUATIC HABITAT CONSERVATION PLAN, July 13, 2008,
[103] See e.g. Newbold et al. 1980, Welsch 1991, Sweeney 1992, Sweeney and Newbold 2014.
[104] Canadian Association of Petroleum Producers, Canadian Energy Pipeline Association, and Canadian Gas Association, Pipeline Associated Water Crossings, 1-4 (2005).
[105] Ibid 1.

Forest fragmentation and habitat loss is a serious consequence of pipeline construction. Damage to a forest ecosystem includes the direct and actual location of the foot print of the ROW, roadways, construction areas, and above ground aperture locations. An additional 300 feet of forest on either side of the ROW is also impacted. "[F]orest clearing creates an associated edge effect" whereby "increased light and wind exposure creates different vegetation dynamics".[106]

The Nature Conservancy has determined that "[t]he expanding pipeline network could eliminate habitat conditions needed by "interior" forest species on between 360,000 and 900,000 acres as new forest edges are created by pipeline right-of-ways."[107]

Wildlife Impacts Must Be Fully Assessed.

All animal species located on or that utilize habitats for any portion of the year and their life cycle in, around and/or impacted by the proposed ROW, construction areas and/or project apertures (such as compressors stations) must be thoroughly catalogued, their population status considered, and the ramifications of the AGP construction and operation analyzed. Not only must the impact on present species be assessed, but the impact on habitat potential for species that once inhabited the area, or could inhabit it in the future if properly protected and preserved, must also be considered. Among the impacts to be considered is the impact to interior forest species, such as black-throated blue warblers, salamanders, and many woodland flowers, that require shade, humidity, and tree canopy protection that only deep forest environments can provide.[108]

A pipeline ROW corridor "inhibits the movement of some species, such as forest interior nesting birds, which are reluctant to cross openings where they are more exposed to predators."[109] While some species may be inhibited from travelling up or across an open pipeline ROW, others will readily travel up and over, increasing the level of harm – this includes all terrain vehicles (ATVs) that continue to impact areas. The clearing of forest for pipelines can also result in the introduction and linear and outward spread of invasive species (such as Japanese knotweed, Japanese stiltgrass, multiflora rose, *Phragmites* and hay scented fern) resulting in further decline of native wildlife species, and the creation of microclimates that degrade forest health through sunscald and wind-throw. For example, the pipeline corridor becomes a path for ATVs, and seeds of invasives can spread along the corridor in vehicular tires. These invasive plants, if tolerant to shade, can also then colonize surrounding woodlands, decreasing habitat and diversity within the adjacent forest habitat.

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[106] Cara Lee, Brad Stratton, Rebecca Shirer, Ellen Weiss, *An Assessment of the Potential Impacts of High Volume Hydraulic Fracturing (HVHF) on Forest Resources*, The Nature Conservancy, Dec. 19, 2011.
[107] Nels Johnson, et al., Natural Gas Pipelines, The Nature Conservancy, Dec. 1, 2011.
[108] *Id.*
[109] *Id.*

FERC must use the best available science to ensure protection of wildlife and avoid jeopardy to wildlife habitat. Failure to employ the best available science to determine the biological baseline and evaluate potential impacts would thwart the purposes of NEPA.

The ROW forest buffer, compressor station cites, access roads, construction areas, staging areas, areas of aperture placement and operation, and buffers must be examined for species and habitat. The effects of increased forest edge and habitat degradation due to the impacts of construction and permanent impairment of resources on these species must be analyzed as well. The ramifications of noise, light, air and heat impacts from operation of the pipeline and associated apertures such as compressor stations must be fully considered.

Endangered and Threatened Plant and Animal Species Must Be Thoroughly Catalogued and Considered

The NEPA document must continually update this list with the latest species information throughout the project review and assess how the project would affect these species including impacts on habitats, vegetation, reproduction, water quality and other ecological impacts such as increased sedimentation of waterways, increased water temperatures, increased soil temperatures, multiple disturbances over time, mortality due to increased traffic, and impacts to groundwater recharge. All possible impacts to these species resulting from the Project must be studied.

Species monitoring is an extensive process and the timeframe for conducting these studies must not be cut short simply to satisfy the applicant's desired in-service date. More time may be needed to study the true impacts to these threatened, rare, and endangered species if this Project moves forward. The NEPA document must carefully assess whether this Project can proceed without disrupting this habitat or resulting in the taking of any federal or state protected species. Furthermore, FERC should require AGP to mitigate for the loss of habitat. FERC must ensure full compliance with the Federal Endangered Species Act. The EIS document should clarify that any disturbed areas that will result in compensation, will involve resources that have substantially the same values and functions as those impacted.

The ROW forest buffer, compressor station site, access roads, construction areas, staging areas, areas of aperture placement and operation, and buffers must be examined for species and habitat. The effects of increased forest edge and habitat degradation due to the impacts of construction and permanent impairment of resources on these species must

be analyzed as well. The ramifications of noise, light, air and heat impacts from operation of the pipeline and associated apertures such as compressor stations must be fully considered.

Invasive Species Impacts Must Be Given Due Attention

Invasive vegetation out-competes native vegetation and spreads rapidly through forest openings.[110] The entire Project would create edge impacts on forest communities that will be disturbed or re-disturbed by the project. The newly-created forest edge will be a direct impact of the Project and will be a prime spot for invasive species infestation on the newly-created edge. Moreover, the Project's disturbance of vegetation in the ROW, compressor station cites access roads, and temporary workspaces will require re-vegetation following construction, which will itself introduce new invasive species.

The damaged and/or changed habitat ecosystems will also be an invitation for invasive wildlife species that can also have near term and long term impacts on the region, all of which must be fully considered.The spread of invasive species, whether already established and able to find new favorable habitats due to the Project, or resulting from project construction, would have a major impact on the biodiversity of ecosystem through widespread loss of native vegetation and/or native species. The loss of biodiversity is a tragedy in its own right, but it will also affect visitor experience and may result in less utilization of the affected areas by flora enthusiasts, birders, wildlife viewers, hikers, hunters and/or boaters in favor of more biologically diverse sites elsewhere. The reestablishment of native vegetation, especially considering the effects of deer herbivory, will take many years, and until reestablishment is achieved the area will be susceptible to further invasive species infestation. FERC must consider these impacts in the NEPA document.

Moreover, NEPA review must also encompass the impacts of invasive species on groundwater recharge. Invasive species often have shallower root systems than native plants, which allow the soil to erode more readily and to degrade the quality of watersheds by adding to "suspended sediment loads and turbidity."[111]

Finally, the financial impacts of invasive species management must be considered. If the applicant does not commit to conducting permanent invasive species management outside the ROW and all other affected land in the associated forest buffer, the National Park Service, State Park agencies, county park programs, private homeowners and others will be required to fund future eradication programs through money or activity. The NEPA document must consider the Project in light of the unavailability of government resources

[110] New Jersey Audubon Society, Forest Health and Ecological Integrity Stressors and Solutions: Policy White Paper, March 2005, Available at: http://www.njaudubon.org/Portals/10/Conservation/PDF/ForestHealthWhitePaper.pdf.
[111] T. Stohlgren, C. Jarnevich & S. Kumar, Forest Legacies, Climate Change, Altered Disturbance Regimes, Invasive Species and Water, Unasylva 229, 2007, at 44, 47-8.

to ensure the applicant's mitigation and restoration projects are successful on public trust lands.

The AGP is likely to result in new and additional encroachment of undesirable invasive vegetation and animals species into forests, park lands, and other publicly or privately preserved areas destroying biodiversity, reducing the effectiveness of groundwater recharge, and driving away recreational visitors. This will in turn result in a loss of the economic values that accompany high recreational and aesthetic values of a region.

Public Safety Analysis Must Examine The Risk of Converting an Older, Abandoned Pipeline From Oil to Gas Pipelines to Ensure Risk to Public Safety has been adequately considered.

Adelphia claims that the Project "will result in minimal environmental impacts as the majority of the Project facilities are already existing."[112] Insisting that the only construction to be considered in its application is the construction of additional facilities, yet there is evidence that the conversion of a pipeline from oil to natural gas entails obstacles and public safety on its own. Therefore, Adelphia needs to account for the environmental and public safety issues that could occur during this process.

Pipeline Hazardous Materials Safety Administration has released guidelines after two explosions which occured due to issues with converting pipelines from oil to gas.[113] The agency points out that a process that seeks to repurpose pipelines call allow for companies to use "older [pipelines that] were manufactured using outdated processes, materials or design elements that aren't acceptance by today's standards."[114] Such this process can have significant impacts "on the integrity of a pipeline."[115]

The process can impact various aspects of a pipeline's "operation, maintenance, monitoring, integrity management, and emergency response" as well as "[p]ressure gradient, velocity, and the location, magnitude, and frequency of pressure surges" and

[112] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, at pg. 6, January 11, 2018.
[113] Pipeline Safety: Guidance for Pipeline Flow Reversals, Product Changes and Conversion to Service, Department of Transportation, Docket No. PHMSA-2014-0040, https://www.pipelinelaw.com/wp-content/uploads/sites/24/2014/09/Advisory_re_Flow_Reversals.pdf; The Tesoro High Plains Pipeline rupture discovered on September 29, 2013, after leaking an estimated 20,000 barrels of crude oil, the location of pressure and flow monitoring equipment had not been changed to account for the reversed flow, and the Pegasus Pipeline failed on March 29, 2013 releasing 5,000 barrels of crude oil into a neighborhood, after flow of the pipeline had been reversed.
[114] "Pipeline Reversals and Conversions: Case Studies, Best Practices." *High Precision With Ultrasonic Pigging | Pipeline & Gas Journal*, Sept. 2015, Available at: pgjonline.com/magazine/2015/september-2015-vol-242-no-9/features/pipeline-reversals-and-conversions-case-studies-best-practices.
[115] Pipeline Safety: Guidance for Pipeline Flow reversals, Product Changes and Conversion to Service, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Docket No.: PHMSA-2014-0040.

cycle changes.[116] Which may warrant a "material compatibility and corrosion susceptibility review."

The existing oil and gas pipeline was built in the 1970's and the majority of the mainline (the southern 50 mile segment) is a fuel oil pipeline that has been unused since 2014. Conversion of this older and unused segment of the pipeline from oil to gas will likely require significant construction and ground-disturbing activity that poses serious health, safety, and environmental consequences that are not adequately discussed in Adelphia's Resource Reports.

Currently Adelphia's plans to combat these threats includes only "inspecting welds both visually and with x-rays, installing shut-off valves along the pipeline, hydrostatically pressure testing at high-than-normal operating pressures prior to placing the pipeline into service, installing emergency shutdown systems on the compressor stations, and installing pressure-regulating devices."[117] As well as "performing routine preventative maintenance and pipeline patrols and maintaining an emergency response plan and a pipeline integrity management program."[118] None of these take any preventative measures to ensure that there is no threat to the public safety. Nor is there any indication that the pipeline to be converted meets current safety standards and will maintain integrity throughout the conversion. FERC must require Adelphia require fully detail this work and the full extent of its impacts.

Additionally, There must be a risk assessment conducted to determine if the conversion from oil to natural gas can be completed without putting the public, the environment, and those companies dependent on this investment at risk. Such an assessment should include major reviews of the pipeline's condition and history including: laterales, line cleanliness, right-of-way conditions, potential for corrosion or mechanical damage, potential threats, such as fatigue or wear down of pipes, equipment required for conversion and compatibility, inline inspection and hydrotesting, and any past safety issues.

A Proper NEPA Analysis Must Include an Examination of All Potential Air Quality Issues and Consequences of Them

It has been well-settled for decades that NEPA's ultimate goal is the protection of human health and welfare and the physical environment.[119] FERC must therefore undertake a full and substantive analysis of the potential environmental and health effects

[116] Pipeline Safety: Guidance for Pipeline Flow Reversals, Product Changes and Conversion to Service, Department of Transportation, Docket No. PHMSA-2014-0040, https://www.pipelinelaw.com/wp-content/uploads/sites/24/2014/09/Advisory_re_Flow_Reversals.pd

[117] Answer of Adelphia Gateway, LLC to Comments, FERC Docket No. CP18-46-000, at p 13, Feb. 2, 2018.

[118] Answer of Adelphia Gateway, LLC to Comments, FERC Docket No. CP18-46-000, at p 13, Feb. 2, 2018.

[119] *See Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 771 (1983) ("All the parties agree that effects on human health are cognizable under NEPA . . . ."), 773 ("NEPA states its goals in sweeping terms of human health and welfare . . . . [T]hese goals are ends that Congress has chosen to pursue by means of protecting the physical environment.") (original emphasis omitted).

of NOx, VOCs, greenhouse gases and other pollutants—including fugitive emissions—that would be generated if the Project were to go forward as such cases has the potential to cause significant damage to the surrounding environment and health of the individuals who live in the area.

If construction of the project were to occur, emissions would result from the construction and operation of the new and modified pipeline, two new compressor stations, and eight blowdowns and meter stations. Not only do Compressor and pipelines associated with shale gas are sources of methane, ethane, benzene, toluene, xylene, carbon monoxide and ozone.[120] But diesel emissions as a result of the Project may lead to a higher level of ozone along the ROW as the cleared ROW provides more sunlight for nitrogen oxides and reactive organic cases to combine. These additional emissions would affect residents of areas already burdened by elevated levels of pollution, since the areas are in nonattainment of the NAAQS under the 8-Hour Ozone (Northampton, Bucks, Montgomery, Chester, Delaware, and New Castle Counties) and PM-2.5 standards (Delaware County),[121] NOx and VOCs both being precursors to ozone.

Additionally, the 8 blowdowns, five of which are within 15 miles in Chester County, and compressor stations have been shown to have a demonstrated effect on the health of surrounding populations.[122] These stations create air pollution that leads to chronic respiratory issues, cardiovascular issues and heart attacks, neurological issues, cancer, and reproductive and development toxicity, among others.[123] Prior to Adelphia's construction FERC must ensure that they have analyzed the repercussions and costs these facilities will have on public health.

A blowdown is the "largest single emission at a compressor station." with gas plumes extending upward 30 to 60 meters. The first 30 to 60 minutes being are most intense and biggest release, but the entire blowdown could last up to three hours. FERC should also consider the effects of these toxins when admitted in short, sudden spurts rather than the average for the year. As the stations being built in the Project will most likely only have short, sudden emissions of gases sparingly throughout the year and such events have been shown to have different effects on human health and the environment as compared to a steady continuous release. People living near compressor stations report strong odors as well as visible plumes during venting or blowdowns, as well as health issues such as burning eyes and throat, skin irritation, coughing, and headache.

Finally, all of these facilities lead to noise exposures. Adelphia hypothesizes that

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[120] Brown, CM, et al. (2002). Effects of pipeline rights-of-way on fish habitat at two Alberta stream crossings. In Environmental Concerns in Rights-of-Way Management: Seventh International Symposium. Elsevier Science Ltd. P. 82

[121] EPA, *Nonattainment Areas for Criteria Pollutants (Green Book)*, available at https://www.epa.gov/green-book (last visited May 31, 2018).

[122] Understanding Natural Gas Compressor Stations, PennState Extensions, available at: https://extension.psu.edu/understanding-natural-gas-compressor-stations

[123] Understanding Natural Gas Compressor Stations, PennState Extensions, available at: https://extension.psu.edu/understanding-natural-gas-compressor-stations

the noise reducing technology, which is not specifically explained, will lead to only noise levels of 60db. Yet the background noise for a quiet rural area is 30db, described as 1/16 as loud as 70 db. These noise will create sporadic interruptions in the neighborhoods where they are located, and need to be assessed further than what Adelphia has done.[124]

The EA Must Include a Thorough Assessment of All Cumulative Impacts Including Climate Change, Upstream and Downstream effects of the Natural Gas Industry, Simultaneous Projects, and Environmental Justice.

FERC needs to account for the actual cumulative impacts of the proposed project. NEPA defines cumulative impacts as "impact[s] on the environment which result[] from the incremental impact of the action *when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal or person undertakes such other actions.*"[125] Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."[126] CEQ has emphasized that cumulative effects analysis includes a "[f]ocus on truly meaningful effects of "past, present, and future actions" as well as "all federal, nonfederal, and private actions."[127] For the current project, this means that a cumulative assessment done properly needs to account and evaluate the effects the project will have on climate change, the increase in natural gas acquisition and usage, as well as the cumulative impact of the construction alongside other pipeline infrastructure projects and burdens it will place on environmental justice communities.

An analysis of GHG emissions and consequential Climate Change effects is required by NEPA

FERC should consider the cumulative impacts of the Project's direct and indirect greenhouse gas ("GHG") emissions. It is a common consensus that climate change is "a result of human activity" where the "combustion of fossil fuels (coal, petroleum, and natural gas), combined with agriculture and clearing of forests, is primarily responsible for the accumulation of GHG."[128] Numerous significant environmental impacts are a result of climate change including: an increase in the number of days areas will fail to meet federal air quality standards due to ozone; severe flooding and heavy downpours, a

[124] Adelphia Gateway, LLC, Adelphia Gateway Project Appendix 9D, FERC Docket No. CP18-46.
[125] Council on Envtl. Quality, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions 5, 9-10 (Feb. 18, 2010) (emphasis added), available at http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf (notice of availability published at 75 Fed. Reg. 8,046 (Feb. 23, 2010)).
[126] 40 C.F.R. § 1508.7 (2010) (emphasis added)
[127] Council on Envtl. Quality, Considering Cumulative Effects Under the National Environmental Policy Act 11(1997), available at http://ceq.hss.doe.gov.nepa/ccenepz/sec2.pdf
[128] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1 at 41, FERC Docket No. CP18-46, January 2018.

change in the life cycle events of vegetation and wildlife species; and an increase in health risks for vulnerable populations due to heat stress and poor air quality.[129]

The Council on Environmental Quality ("CEQ") draft guidance has noted that "for Federal actions that require an EA or EIS the direct and indirect GHG emissions from the action should be considered in scoping," and these GHG impacts should be considered in the context of the "aggregate effects of past, present, and reasonably foreseeable future actions."[130] Moreover, to reject that notion that climate change does not need to be considered in the EA is a violation of decision rendered by the Court of Appeals for the DC Circuit in which the court determined: "greenhouse-gas emissions are an indirect effect of authorizing this [pipeline] project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate. *See* 15 U.S.C. § 717f(e)."[131] Therefore, in order to conduct a thorough EA, as required under NEPA, FERC must look at the indirect and direct effects of climate change from production of the pipeline materials to the eventual end use of natural gas flowing through it.

In a recent decision FERC states that in order to consider GHG a "casual relationship" must exist such that "if the proposed pipeline would transport new production from a specified production area and that production would not occur in the absence of the proposed pipeline (i.e., there would be no other way to move the gas)."[132] Aside from the fact that such a stance is contradictory to NEPA law and recent judicial decisions.[133] There is no doubt that Adelphia falls into this category. If they had not purchased the pipeline, zone south would be out of commission and there would be no way to transfer the natural gas. Additionally, the resource reports posit that Adelhia can increase the amount of gas transferred per day from 250,000 dekatherms to 350,000 dekatherms based on need, meaning that they are building the project specifically to move this gas and there would be no other way to do it. Therefore FERC must consider the GHG emissions and consequential effects on climate change this project will have.

Direct effects of the Project must include both the production and construction of the pipeline and its numerous auxiliary facilities. The production of the pipes, mining of metal and supplies to manufacture the pipelines, and the transport of those pipes from the production facility to the final pipe desitionatio are all fossil fuel dependent. Additionally, the construction of the Project will require a large amount of fossil fuel to power construction equipment. The EA must consider emissions from trucks and other vehicles used while transporting materials and idling at the site. Further these effects cannot be looked at isolation but in the context of the communities, taking account for any current burdens on the communities and alternatives that could mitigate these emissions as well.

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[129] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1 at 42, FERC Docket No. CP18-46, January 2018.

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

[131] *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017)

[132] Order Denying Rehearing Request, Dominion Transmission, Inc., Docket No. CP14-497.

[133] *Sierra Club v. FERC*, 867, F.3d 1357, 1373 (D.C. Cir. 2017).

Emissions that will occur during the operation of the pipeline must be fully evaluated. Direct emissions may include but are not limited to carbon dioxide (CO_2) and nitrous oxide (N_2O) emissions from compressor engines, line heaters, and generators, as well as fugitive methane emissions from compressors and pipelines; and black carbon emissions from diesel vehicles and equipment.[134] Additionally the operation of eight blowdowns, will lead to sporadic, intense releases of methane and other chemicals into the air.[135] Such releases can and should be accounted for when looking at GHG emissions.

Finally, the EA must account for the indirect effects that will occur to frack the natural gas and burn it for fuel. A request to build a pipeline is evidence that natural gas will be fracked, transported, and converted to energy. These facts can be taken as given because otherwise FERC would not find that such projects are required by public convenience and necessity and satisfy the criteria to receive their certification.[136] Since NEPA analyses of GHG sources must take into account all phases of the proposed action, such certain downstream effects of a gas pipeline should be assessed. Moreover, cumulative impact analysis requires that these GHG emissions be considered in the context of GHGs emitted from the aggregate of natural gas that have been and will reasonably foreseeably be extracted from the Marcellus Shale region.

Adelphia's comment provides little to no valuable information in this area. When analyzing the impact of their estimated emissions, Adelphia "provides a frame of reference" by referring to the national averages in comparison, but no portion of NEPA uses this ratio, nor does such an assertion address the significance of the additional GHGs brought by adding zone south and current GHG's emitting from zone north.[137] Additionally, Adelphia claims there is no way to know the "new" usage that will occur on the South End, as that is currently out of operation, yet it states that it "received bids for more than twice the capacity of the Zone South facilities."[138] Indicating that usage can be ascertained and will in fact be new and occuring only because of the Project. This information should provide a basis for FERC to determine the amount of natural gas that will be transferred and used through the pipeline, allowing for an actual estimate of GHG emissions to occur.

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

[135] Summary on Compressor Stations and Health Impacts, Southwest Pennsylvania Environmental Health Project, February 24, 2015.

[136] 15 U.S.C. § 717f(e). ("the proposed service, sale, operation, construction, extension, or acquisition, to the extent authorized by the certificate, is or will be required by the present or future public convenience and necessity; otherwise such application shall be denied.")

[137] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1 at 41 and 42, FERC Docket No. CP18-46, January 2018.

[138] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46 at 12, January 11, 2018.

Moreover, the analysis of potential consequences of these emissions must be more thorough. Adelphia's only analysis now hinges on the comparison of their emissions compared to the national and international average.[139] This is not enough. Climate Change emissions can be measured in the known effects that will occur including: temperature rise, extreme weather events, sea level rise, increase in participation, and heat waves. Additionally, the social cost of carbon can allow for Adelphia and FERC to easily identify the potential issues that will be created by the Project.[140] For example estimates on the cost of one ton of carbon have been estimated to be $21 or $55 4to $266 depending on the discount rate applied (how much it is worth it to us now to prevent future damage).[141] Given that Adelphia estimates provide an estimate for all delivered gas that could be burned, the costs of GHG emissions for the project could range from $102,097,086 or $267,397,130 - $1,293,229,756.[142]

While FERC does not need to use this methodology given that but for Adelphia purchasing this pipeline ensuring continued use on zone north and creating new use on zone south, there needs to be some analysis as to the consequences on the environment this project will bring. Especially because but-for the Project these areas could have been served with alternate forms of energy production or taken steps to reduce their footprint, that now they will have the choice to not do.

An analysis of the upstream and downstream impacts is required by NEPA.

FERC is clearly obligated by NEPA, as well as the reality of applicable science, laws, and facts to consider the downstream and upstream impacts of its pipeline approvals.

The DC Circuit has clearly explained: "An agency conducting a NEPA review must consider not only the direct effects, but also the indirect environmental effects, of the project under consideration."[143] "Indirect effects" are those that "are caused by the [project] and are later in time or farther removed in distance, but are still reasonably foreseeable."[144] Effects are considered reasonably foreseeable if they are "sufficiently likely to occur so that a person of ordinary prudence would take [them] into account in reaching a decision."[145] Moreover, CEQ has stated that an agency conducting a NEPA analysis must "take account of all phases and elements of the proposed action over its

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[139] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1, FERC Docket No. CP18-46, January 2018., § 1.11.2.8.

[140]"Working Paper: The 'Social Cost of Carbon' Made Simple." *EPA*, Environmental Protection Agency, 10 Feb. 2017, www.epa.gov/environmental-economics/working-paper-social-cost-carbon-made-simple.

[141] Foster, Joanna M. "The Social Cost of Carbon: How to Do the Math?" *The New York Times*, The New York Times, 18 Sept. 2012, green.blogs.nytimes.com/2012/09/18/the-social-cost-of-carbon-how-to-do-the-math/.

[142] NFoster, Joanna M. "The Social Cost of Carbon: How to Do the Math?" *The New York Times*, The New York Times, 18 Sept. 2012, green.blogs.nytimes.com/2012/09/18/the-social-cost-of-carbon-how-to-do-the-math/.

[143] *Sierra Club v. FERC*, 867, F.3d 1357, 1373 (D.C. Cir. 2017); *See* 40 C.F.R. § 1502.16(b).

[144] Id. § 1508.8(b).

[145] *EarthReports, Inc. v. FERC*, 828 F.3d 949, 955 (D.C. Cir. 2016) (citations omitted)

expected life."[146] And that the impacts of these "other actions" considered in the cumulative impact analysis need not be directly initiated by the project.[147] Here, the fact that some natural gas development may or may not occur with or without the Project's construction is ultimately irrelevant. What controls here is that there will be significant development around the Project.[148]

In a recent denial of a rehearing request FERC asserted that when a project consists of an upgrade of a compressor station, in a state that has banned fracking there is no need for any analysis of upstream and downstream impacts analysis on the projects effects on the natural gas industry. FERC itself stated that. "The geographic scope of our cumulative impacts analysis varies from case to case, and resource to resource, depending on the facts presented."[149] FERC went on to explain that Dominion was a "project consists entirely of construction and modification of compressor stations--not construction of linear pipeline--the project impacts will be confined to discrete areas. "[150] Adelphia is distinct from Dominion in that it is the construction and operation of a major pipeline. [151] Additionally, it will transport interstate natural gas in Pennsylvania, the second largest producer of natural gas in the United States.[152] Finally, Adelphia basis its capacity to carry gas on the demand shown by end consumers.[153] Therefore, this project EA should include an analysis on the downstream and upstream impacts as it is a lateral pipeline, is in a state that will be exporting and using the gas for energy consumption, and reasonable forecast the upstream and downstream effects based on the precedent agreements and knowledge of the industry.

With regards to upstream impacts, increased and ongoing extraction of gas from shale using hydraulic fracturing technology, is not just reasonably foreseeable, it is a known and demonstrable effect of FERC approved pipeline infrastructure that is obvious to any person of ordinary prudence. A request to build a pipeline is evidence that natural gas will be fracked, transported, and converted to energy. These facts can be taken as given because otherwise, there would be no need for FERC to allow for/certify

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[146] Draft NEPA Guidance on COnsideration of the Effects of the Effects of CLimate Change and Greenhouse Gas Emissions, Council On Environmental Quality, February 18, 2010, at p.at 5.
[147] See also *Nat. Res. Def. Council. v. Hodel*, 865 F.2d 288, 298 (D.C. Cir. 1988) (determining that the cumulative impact assessment of an Outer Continental Shelf ("OCS") oil and gas leasing activity must consider the cumulative impacts of "simultaneous OCS development in different areas" without requiring that such other OCS development be caused by the proposed leasing activity).
[148] *U.S. v. 27.09 Acres of Land*, 760 F. Supp. 345, 351– 52 (S.D.N.Y 1991) (finding a FONSI unsupportable where the cumulative impact analysis for construction of a Postal Service facility failed to consider the impacts of future nearby development without requiring that such other development be caused by construction of the proposed facility)
[149] Order Denying Rehearing, Dominion Transmission, Docket No. CP14-497. Issued May 18, 2018. 163 FERC ¶ 61,128, pg. 14
[150] Order Denying Rehearing, Dominion Transmission, Docket No. CP14-497. Issued May 18, 2018. 163 FERC ¶ 61,128, pg. 15
[151] Adelphia is a project applying under Section 7(c) of Natural Gas Act.
[152]Dep, Pa. "2016 Oil and Gas Annual Report." *PA Oil and Gas Mapping*, www.depgis.state.pa.us/oilgasannualreport/index.html.
[153] Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, January 11, 2018. (App.) Exhibit Z-3.

projects.[154] New pipeline capacity enables, supports, and induces operators to advance, accelerate, and complete natural gas drilling and production. In fact, the industry itself recognizes the relationship between pipelines and drilling and relies on new pipeline capacity to accommodate new shale gas extraction.[155] As do those who are looking to expand natural gas production.[156] Finally, but for the construction of an interstate pipeline – whose approval is entirely controlled by the Commission – natural gas producers would simply be unable to access markets across state lines without access to interstate transmission lines.Therefore, there can be no doubt whatsoever that the construction of an interstate natural gas transmission line is causally related to the development of shale gas resources in the Project area.

A proper NEPA analysis then must include foreseeable related activities that occur in natural gas exploration, production, and consumption, including the construction and operation of well pads, access roads, gathering lines, compressor stations, and other infrastructure. FERC cannot ignore this responsibility on the basis that it is in determinable. Publicly available maps of permitted gas wells in Pennsylvania show the locations of wells already drilled in the Pennsylvania counties to be crossed by the Project as well as the locations of newly-permitted well sites. Additionally, there is data available on the emissions from conversion of natural gas to energy and estimates of its usage, Adelphia was able to do it using "worst case scenario" estimates[157], there is no reason that they cannot walk those estimates back and give a reasonably, scientifically-based estimate in order to understand the burdens this project will put on the environment and on public health.

Additionally, FERC must consider the impacts of the Project in the context of existing and reasonably foreseeable shale development, including the Marcellus Shale and Utica Shale as well as other shales identified by the US Geological Survey, which includes but is not limited to the hundreds of miles of gathering and transportation pipelines and associated infrastructure (such as valves and compressor stations) that have been and will need to be constructed to move the gas from the thousands of wells that have been and will be drilled to interstate markets. For example, the Commission should determine how many wells the capacity of the project supports, and model the environmental impact of the construction and operation of those wells

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[154]15 U.S.C. § 717f(e).

[155] A subsidiary of the Natural Fuel Gas Company, Seneca Resources, stated in a presentation to its investors in 2016 that it had "[l]imited development drilling [in its Eastern Development Area in northeastern Pennsylvania] until firm transportation on [the proposed] Atlantic Sunrise (190 MDth/d) is available in late 2017" and that it had "50-60 remaining Marcellus [drilling] locations" and "100-120 [Geneseo shale] locations" that could not be developed until that pipeline project was underway. National Fuel. Investor Presentation: Q2 Fiscal 2016 Update April 2016. Slide 10. Available at: http://s2.q4cdn.com/766046337/files/doc_presentations/2016/April/20160428_NFG-IR-Presentation.pdf (more examples in dominion comment if wanted)

[156] Greater Philadelphia Energy Action Team, *A Pipeline for Growth*, March 30, 2016. (a report issued by the Greater Philadelphia Energy Action Team advocates for more pipelines in order to induce and support more and new shale gas production finding that "[e]ncouraging the industry to invest in new pipelines and in new distribution system infrastructure … provides additional capacity for increased volumes of gas.")

[157] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1 at 41, FERC Docket No. CP18-46, January 2018.

An Analysis of Environmental Justice Communities Impacts Must be Done to Comply with Executive Order No. 12,898

Cumulative impacts analysis also needs to analyze the Projects impact on environmental justice ("EJ") communities. Such issues are mandated by federal policy with guidance on proper evaluation provided by the EPA. Currently Adelphia's review of EJ communities and FERC's request for information does not meet the standards of either of these policies, nor does it adequately conform to the state's policy as well.

Executive Order 12,898 ("Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations") makes it the federal government's purpose to "focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities.[158] Under this executive order, EPA policy guidelines mandate that under NEPA any federal action must be evaluated in the following four ways:[159]

1. Each federal agency must analyze environmental effects, including human health, economic, and social effects, of federal actions, including effects on minority communities and low-income communities, when such analysis is required by NEPA.
2. Mitigation measures outlined or analyzed in EAs, EISs, or Records of Decision (RODs), whenever feasible, should address significant and adverse environmental effects of proposed federal actions on minority communities and low-income communities.
3. Each federal agency must provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving accessibility of public meetings, official documents, and notices to affected communities.
4. In reviewing other agencies' proposed actions under Section 309 of the Clean Air Act, EPA must ensure that the agencies have fully analyzed environmental effects on minority communities and low-income communities, including human health, social, and economic effects.

In the current proposed project there is no way to ascertain the number of EJ communities affected as Adelphia has failed to gather and quantify the appropriate

[158] Executive Order. No. 12,898, 1994; 59 Fed. Reg. 7629 (Feb, 11, 1994); "Summary of Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." *EPA*, Environmental Protection Agency, 17 Oct. 2016, www.epa.gov/laws-regulations/summary-executive-order-12898-federal-actions-address-environmental-justice.

[159] Final Guidance For Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis, EPA, April 1998, avaliable at: https://www.epa.gov/sites/production/files/2014-08/documents/ej_guidance_nepa_epa0498.pdf

information.[160] Additionally, while acknowledging that the Tilghman later will be built in some environmental justice areas, utilizing Pennsylvania EJ policy, Adelphia has insisted that because the Project will "be located within existing right-of-way, roadways, and/or industrial areas" there will be no significant impacts."[161] Further, they insist that HDD drilling, the same drilling that is currently the cause of multiple Clean Water Act violations by Sunoco's Mariner East II,[162] will prevent any detrimental effects from occurring in the communities during construction. Yet such assumptions have no foundation in facts, laws, or experience, nor does it account for the effects felt by communities during operation of the pipeline.

The construction of a pipeline brings toxic emissions, environmental degradation, threats to safety, and threats to drinking water. These are significant effects. Further, pipeline operation and maintenance is known to cause air pollution and can lead to damage of surrounding water bodies, no matter the precautions followed by a company. Additionally, these effects can exasperate health conditions such as asthma and heart disease. Environmental Justice Communities are already exposed to such elements and to place more burdens in their community adds to the continuing injustices they experience.

While FERC has asked Adelphia to provide more information on the population within 1 mile of the Project, this does not fully address the issues.[163] The purpose of EJ is to prevent injustices in *communities*, a one mile radius is an arbitrary measurement that will not account for the make-up of communities along the route. Such a definition narrows the scope and lessens the work for Adelphia and FERC at the expense of these communities. Further, the EJ executive order and policy promulgated by the EPA works to protect communities from health effects of projects, health effects result from pollution in air and water, neither of which are constrained to only a one mile radius of the pipeline. Finally, the definition of EJ used by FERC requires the makeup of the community to be over 50% minority or 50% below the poverty line, or in the alternative 10% above the reference value of the state or the county as a whole. Whereas, in Pennsylvania EJ communities are defined as. "any census tract where 20 percent or more individuals live in poverty, and/or 30 percent or more of the population is minority."[164] FERC's definition will not properly identify EJ communities and will make it more difficult for the state to enforce its policy properly as it demands such a higher population portion. Further, FERC does not base their requirements on any current standards, arbitrarily determining a number that will likely lead to the exclusion of state identified EJ communities with no explanation or facts to back-up such a decision.

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[160] Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 5.2.6, FERC Docket No. CP18-46, January 2018.
[161] Id.
[162] *See* Compilation of Mariner East 2 inadvertent return reports produced from PADEP, available at http://ehb.courtapps.com/efile/documentViewer.php?documentID=41079 and http://ehb.courtapps.com/efile/documentViewer.php?documentID=41080.
[163] FERC Environmental Data Request, Adelphia Project Docket No. CP18-46-000, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.
[164] "How Does DEP Identify Environmental Justice Area?" *PA Environmental Justice Areas*, PA DEP, www.dep.pa.gov/PublicParticipation/OfficeofEnvironmentalJustice/Pages/PA-Environmental-Justice-Areas.aspx.

Therefore, FERC and Adelphia need to widen the scope, change the definition of EJ, and consider the burdens that will be added to these communities in the form of air and water pollution in their NEPA analysis.

Cumulative Impacts Must Include an Analysis of the Effects of All Current and Foreseeable Pipelines in the Region, accounting for degradation that will occur in their construction as well as operation.

NEPA requires that "when several proposals for . . . actions that will have cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental consequences must be considered together." [165]"[T]he key language there is 'upon a region.'" [166]

Numerous projects are or will be constructed in the same region that Adelphia is located within. FERC cannot frame its cumulative impact analysis too narrowly by considering only the immediate vicinity of the proposed pipeline route. The outer bounds of the environmental review area should extend at least as far as the subwatershed through which the pipeline crosses,
as opposed to an arbitrary designation of feet or mileage as FERC has identified in the past review documents.[167] Additionally, A critical consideration in determining the cumulative environmental effects must be the interaction of runoff with other pollutants from all sources and consideration of the impact of the Project when added to other past, present, and reasonably foreseeable future projects and actions, whether federal, non-federal, or private.[168]

Other FERC Projects in the vicinity include:

- Constitution Pipeline
- Diamond East Project
- Leidy SE Project
- Mariner East 1&2
- NJ Natural Gas Project
- PennEast Pipeline
- TEAM 2014 Expansion Proj.
- East Side Expansion Project
- PennEast

[165] *Kleppe v. Sierra Club*, 427 U.S. 390 (1976).
[166] ***Sierra Club v. United States DOE*, 867 F.3d 189, 200-01 (D.C. Cir. 2017)(citations omitted)**
[167] FERC Environmental Data Request, Adelphia Project Docket No. CP18-46-000, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.
[168] Council on Envtl. Quality, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions 5, 9-10 (Feb. 18, 2010) (emphasis added), available at http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf (notice of availability published at 75 Fed. Reg. 8,046 (Feb. 23, 2010)).

Overall, for the Delaware River Basin, the following impacts for the eight proposed projects[169] include:[170]

- Total land disturbance during construction is 2,977 acres, of which roughly 1,050 are forest, and 41 are wetlands.
- Total land disturbance for the permanent right-of-way is 1,328 acres, of which roughly 440 are forest, and 22 are wetlands.
- The proposed pipeline routes will require at least 175 stream crossings, of which 92 potentially could be shared with existing pipelines.

FERC must acknowledge that these projects do not occur in a vacuum and evaluate the effects of them all when considering the cumulative impacts of the projects. As one by one they steadily deplete the natural and scenic resources of the region, the combined impact becomes potentially devastating. If utility infrastructure proposals continue to move forward at this pace, the environmental impacts will be ruinous. Therefore, a proper NEPA analysis needs to account for the stress that will be placed on the watershed as well as on the local communities and lands.

Additionally, there is an increasing likelihood that if projects continue as proposed and planned Adelphia, PennEast, and Mariner East II will all be under construction simultaneously within the same region. In its application, Adelphia assumes that it will began construction in August 2018 and also posits that by this time Mariner East 2 and PennEast will be completed. Yet given the current issues with both of these pipelines it appears highly unlikely that they will be finished prior to this date. Therefore, the EA must account for the impacts that will occur as a result of simultaneous construction of all three as well as operation.

The Project Requires an Environmental Impact Statement

NEPA[171] and its implementing regulations[172] require agencies to consider a full range of environmental impacts. To determine the significance of a project, the agency must consider two variables "context" and "intensity." "Context is the geographic, biophysical, and social context in which the effects will occur.[173] This mandates that any claims of a small scale impact, must be considered in the context of the local area, and not dismissed due to its minimal impacts.[174] Intensity is a measure of "the severity of the impact, in whatever context(s) it occurs."[175] These impacts can be both beneficial and adverse and include: effects on public health and safety; "unique characteristics of the

[169] PennEast and its potential impacts are not included in this analysis.
[170] Lars Hanson and Steven Habicht, CNA, *Cumulative Land Cover Impacts of Proposed Transmission Pipelines in the Delaware River Basin.*
[171] 42 U.S.C. §§ 4321-4370f (2006).
[172] 40 C.F.R. §§ 1500-08(2010).
[173] "'Significance' under NEPA." *What Is NEPA?* , National Preservation Institute, 15 June 2011, www.npi.org/NEPA/significance.
[174]"'Significance' under NEPA." *What Is NEPA?* , National Preservation Institute, 15 June 2011, www.npi.org/NEPA/significance.
[175] "'Significance' under NEPA." *What Is NEPA?* , National Preservation Institute, 15 June 2011, www.npi.org/NEPA/significance.

geographic areas"; potential for controversy on environmental grounds; any uncertainty or unique risks; potential for establishing precedent; cumulative impacts; potential adverse effects on infrastructure, as well as scientific, cultural, or historical resources; adverse effects on endangered or threatened species or habitat; and potential for violation of a Federal, state, or local law.[176] The effects to be considered must be direct, indirect, and cumulative.

This project requires an environmental impact statement. Under 18 C.F.R. § 380.6(3), any "[m]ajor pipeline construction projects under section 7 of the Natural Gas Act using rights of way in which there is no existing natural gas pipeline," require an environmental impact statement. Adelphia will be converting 50 miles of pipeline that has only been used for oil to natural gas, as well as constructing 4.4 miles of new pipeline for the project. Therefore, DRN believes that such actions constitute "major pipeline construction" and require an EIS. In addition, below, DRN identifies how the proposed project has the potential to "significantly affect the quality of the human environment,"[177] which establishes an EIS is a necessary component of the application in order to ensure a proper environmental analysis is complete.

This project will result in significant environmental impacts and requires an Environmental Impact Statement (EIS) under NEPA. The Project will consist of two new lateral pipelines, eight blowdown assembly sites, eight new meter and regulatory facilities, and numerous other natural gas ancillary facilities, as well as the conversion and operation of 84-miles of oil pipeline to shale gas pipeline. While Adelphia seems to underplay the impacts construction and operation will have, claiming that the fact that pipeline constructed on these sites 30 years ago will make their modifications and construction of numerous auxiliary facilities negligible, as outlined in this comment, such an assertion could not be further from the truth. [178] ROWs do not stay as stagnant construction sites but are covered and lived on, to the point where others may not be able to distinguish a ROW from a non ROW area. [179]

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[176] "'Significance' under NEPA." *What Is NEPA?* , National Preservation Institute, 15 June 2011, www.npi.org/NEPA/significance; 40 C.F.R.§ 1508.27.

[177] 40 C.F.R. § 1508.18.

[178] Answer of Adelphia Gateway, LLC to Comments, Adelphia Gateway LLC, Feb. 2, 2018, Docket No. CP18-46-000, at p. 7 .

[179] *See* Pennsylvania Department of Environmental Protection (PADEP), *Sunoco Mariner East II – Pipeline Construction Inadvertent Returns – Waters of the Commonwealth*, rev'd May 29, 2018, available at http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Sunoco_Mariner_East_II-Pipeline_Construction_Inadvertent_Returns-Waters_of_the_Commonwealth_Revised.pdf (charting inadvertent returns from Mariner East 2 into waters); PADEP, *Sunoco Mariner East II -- Pipeline Construction Inadvertent Returns -- Uplands*, rev'd May 31, 2018, available at http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Sunoco_Mariner_East_II-Pipeline_Construction_Inadvertent_Returns-Uplands_Revised.pdf (charting inadvertent returns from Mariner East 2 into uplands), collectively Exhibit E hereto; compilation of Mariner East 2 inadvertent return reports produced from PADEP, available at http://ehb.courtapps.com/efile/documentViewer.php?documentID=41079 and http://ehb.courtapps.com/efile/documentViewer.php?documentID=41080; *see*, e.g., Affidavit of David A. Mano (detailing well water contamination), available at

In the end, there is no doubt that this project will significantly impact the surrounding environment during construction and operation. Additionally, this pipeline will encourage and continue the unhealthy reliance on natural gas, which when extracted and consumed destroys landscapes and releases greenhouse gases (GHGs) and other toxic emissions. Further, the numerous environmental issues identified in this comment as well as FERC themselves in the request for additional information,[180] shows that this project will have a significant impact on the environment. Therefore, the Project demands an EIS.

Respectfully submitted,

Maya K. van Rossum
the Delaware Riverkeeper

http://ehb.courtapps.com/efile/documentViewer.php?documentID=41088; Affidavit of David Anspach (same), available at http://ehb.courtapps.com/efile/documentViewer.php?documentID=41101.

[180] FERC Environmental Data Request, FERC, May 29, 2018, Adelphia Project Docket No. CP18-46-000, May 29, 2018. Available at: https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14674252.