June 26, 2017
Pennsylvania Department of Environmental Protection
Northcentral Regional Office
Wetlands and Waterways Engineering
C/O James A. Kuncelman, P.E.
208 West Third St.
Suite 101
Williamsport, PA 17701-6448
Re: DEP Application No. E36-947, APS No. 880147
Response to Technical Deficiency Resubmission
Atlantic Sunrise Project
Conestoga, Drumore, Manor, Martic, Mount Joy, Rapho, Pequea, Eden, East Donegal, and West Hempfield Townships and Borough of Mount Joy, Lancaster County

My name is Andrea Ferich, I am a dendrologist and watershed scientist researching, designing, and planting riparian buffers in Pennsylvania. As a Graduate Research student I work with the Pennsylvania Water Resources Center, the Pennsylvania Center for Private Forests, the Center for Nutrient Solutions, and I am a member of the Pennsylvania DCNR Riparian Buffer Advisory Committee, as well as the inter-state Center for Nutrient Solutions in a graduate research capacity.

I have serious concerns regarding the technical capacity of Williams, Inc., Transco to safely implement the Atlantic Sunrise Pipeline without serious degradation of the chemical, thermal, and biological water quality in the Susquehanna River Basin and the Chesapeake Bay Watershed as set forth by the Clean Water Act of 1972, Executive Order 13508, and interstate work plans, management strategies, and TMDL goals.
I have focused the following technical comments on details that I have not seen articulated by lawyers and technical scientists. These comments are not exhaustive, rather additional to the comments you have received from the lawyers of the Lancaster Against Pipelines Organization, other regional geologists, as well as your own concerns in the technical deficiencies of Transco.

1. Cumulative impact-

   The Conowingo Dam no longer has the capacity to retain sediment.
   Scientists and policy experts across the mid-Atlantic Region have indicated that the Conowingo's capacity to sequester nitrogen
2. PA DEP must wait until the Phase III WIP is released
3. Cumulative impact 10 pipelines within the Atlantic Sunrise Pipeline in Lancaster County alone with the loss of 65 acres of riparian buffers
4. Bay's dead zone: ecological and economic impact
5. The riparian buffer crossings need to treated as point sources and not non-point sources

6. Unassessed waterways- EVHQCW Eastern Brook Trout known throughout Lancaster County, and entire ASP line yet still remain as unassessed waters on PA Fish & Boat Commission records
7. Incomplete PNDI

The Chesapeake Bay is the largest estuary in the United States, third largest in the world, with over 50% of this surface water flowing from the Susquehanna River Basin through Pennsylvania (Dutcher, 2000; Armstrong & Stedman, 2012). The Chesapeake Bay has shown drastic decreases in ecosystem function in the last decade impacting economies, with an estimated $22.5 billion annual economy dependent on ecosystem function in the Bay watershed (Phillips & McGee, 2016) as set forth in the TMDL.. Riparian buffers are described as the single most important best management practice for improving water quality, and providing aquatic and terrestrial habitat improvements, reduction in sediment and nutrient loading. The 2006 Chesapeake Bay Program's multi-state goal aims to restore 26,000 miles of riparian vegetation to meet Total Maximum Daily Load (TMDL) to restore ecosystem function in subbasins across the Bay watershed. Pennsylvania has met less than 50% of the riparian buffer goals to be achieved to date (Chesapeake Clean Water Blueprint, 2016). Pennsylvania is clearly failing, currently not upholding sediment and nitrogen reduction goals, as stated in the recent Chesapeake Bay scorecard.

The following technical comments address the overall ASP as well as the Lancaster portions of the pipeline

Some of the greatest deficiencies in the Transco Permit are the negligence in which cumulative impact is discussed. Transco's consultants claim the largest impact of the work will come from sediment, and then attempt to dismiss the cumulative impacts of sediment by sending it downstream, which is in fact the root of the problem, and a dangerous legal liability for the Commonwealth and PA DEP.

4.1.3.1 Water Use and Quality (answered by Transco)
"Potentially affected water resources include groundwater, surface waters, and wetlands. Construction and operation of the Project will likely result in only short-term impacts on water resources and include impacts such as increased turbidity, which will return to baseline levels over a period of days or weeks following construction.

The primary impacts on surface waters would be temporary and mostly associated with active construction activities, ceasing upon settling of turbidity and proper restoration and stream bank revegetation. The greatest of these potential impacts would be an increase in sediment loading to surface waters and an increase in internal sediment loading due to channel/floodplain instability as a result of a change in erosion/deposition patterns."

The PA DEP needs to wait until the 2017 EPA Phase III WIP is released to fully understand the saturated state of the Conowingo Dam and the adjusted TMDL goals determines TDML and impacts on the sediment saturated Conowingo Dam.

“U.S. Environmental Protection Agency’s Interim Expectations for the Phase III Watershed Implementation Plans Additional Implementation Actions Needed as a Result of Loss of Trapping Capacity of Conowingo Dam need to be released.

The U.S. Army Corps of Engineers Lower Susquehanna River Watershed Assessment study, is assessing the loss of trapping capacity of three dams and reservoirs on the lower Susquehanna River, especially Conowingo Dam and reservoir. USGS studies have shown the Conowingo Dam and reservoir are now in a state of “dynamic equilibrium”, indicating the Conowingo reservoir is at near-full.

The Lower Susquehanna Army Corps of Engineers study concluded more nutrients, not just sediment, are coming over the dam than was assumed in developing the 2010 Bay TMDL; this loss of trapping capacity will need to be addressed in order to attain applicable state water quality standards in the Chesapeake Bay.

Based on these findings and the follow-through additional research, monitoring and modeling work, EPA expects the impacted jurisdictions’ Phase III WIPs will document the additional practices and other management actions needed in place by 2025 as a result of the loss of trapping capacity of Conowingo Dam and its reservoir.” Taken from Bay Foundation report.

Lower Susquehanna River Watershed Assessment
"The report confirms again that our efforts to clean up the Chesapeake Bay must include working upstream where pollution originates. The report also echoes earlier findings that while the Conowingo Dam has reduced pollution entering the Bay for decades, that trapping capacity has been reduced so that more sediment and nutrients now make it past the dam, especially during major storms.

The Susquehanna River has been named the third most-endangered river in the United States in an annual list by the environmental group American Rivers.
The group selected the Susquehanna primarily because of what it called the detrimental effects from the Conowingo Dam, just below the Lancaster County line in Harford County, Maryland.
“The Conowingo Dam alters river flow, blocks fish and impacts water quality, harming the Susquehanna and the Chesapeake Bay downstream,” the group said.

The group also cited the well-documented concern that the dam is now no longer trapping sediment containing nitrogen and other pollutants.

Essentially, nearly all of the suspended sediment from the additional 388 water body crossings of the Atlantic Sunrise Pipeline will be dumped into the Bay, onto Maryland.
The Spring of 2017 had much higher nutrient and sediment run-off than expected. In a report recently released by the University of Maryland Center for Environmental Science a larger dead zone is expected in the Bay this summer due to heavier rain events this Spring in Pennsylvania and New York with 81.4 million pound nitrogen load greatly contributing to the 3.2 million Olympic-size swimming pool dead zone in the Bay (http://www.umces.edu/news/larger-summer-%E2%80%98dead-zone%E2%80%99-predicted-chesapeake-bay?platform=hootsuite)

The additional cumulative impact of 10 new and existing pipelines within 10 miles of the Lancaster portions of the Atlantic Sunrise Pipeline were not accounted for in the cumulative impact.

In 2016 the Supreme Court chose to uphold a federal court ruling for the EPA and state regulators to move ahead with efforts to reduce pollution in the Chesapeake Bay, restrictions on water quality in the Chesapeake Bay Blueprint (http://www.pennlive.com/news/2016/02/supreme_court_ruling_on_chesap.html) According to the Chesapeake Bay Executive Order.

The PA DEP was written up by the EPA last year for failure to control agricultural runoff into the bay.

As of 2016, in Lancaster County alone, there are 400,000 acres of farmland where nitrogen needs to be reduced by 35 percent, phosphorus by 27 percent and sediment by 39 percent.
The PA DEP needs to wait until the Phase III WIP is released with the updated TMDL reflecting the heavy pipeline infrastructure, continued development has led to a loss of riparian forest and grass buffers in the Susquehanna River Baseline and increased sediment loading.
The Bay's hypoxic (low-oxygen) and anoxic (oxygen-free) zones are caused by excess nutrient pollution, primarily from human activities such as agriculture and wastewater. The excess nutrients stimulate an overgrowth of algae, which then sinks and decomposes in the water. The resulting low oxygen levels are insufficient to support most marine life and habitats in near-bottom waters, threatening the Bay's crabs, oysters and other fisheries.
The need to wait for the Phase III WIP is only compounded by the "Commonwealth is considering yet another budget that falls well short of providing the investments necessary for success. Pennsylvania will only be successful with sustained investments in the right places and on the right practices (http://paenvironmentdaily.blogspot.com/2017/06/cbf-pa-no-surprise-pennsylvania.html)

Economic
Published in Coastal Management in 2016 Phillips and McGee describes *Ecosystem Service Benefits of a Cleaner Chesapeake Bay.*

> *Information on the economic benefits of natural resource improvement is an important, yet often overlooked, consideration in environmental decision-making. In 2010, the Environmental Protection Agency established the Chesapeake Bay Total Maximum Daily Load (TMDL) that set regulatory limits for nitrogen, phosphorus, and sediment needed to restore the Chesapeake Bay. Meanwhile, the Bay jurisdictions developed implementation plans to achieve these limits. Environmental benefits of achieving the TMDL would accrue due to on-the-ground changes in land use and land management that improve the health, and therefore productivity, of land and water in the watershed. These changes occur both due to the outcomes of achieving the TMDL (i.e., cleaner water) and as a result of the measures taken to achieve those outcomes. This study quantified these changes,*

then translated them into dollar values for various ecosystem services, including water supply, food production, recreation, and aesthetics. We estimate the total economic benefit of implementing the TMDL at $22.5 billion per year (in 2013 dollars), as measured as the improvement over current conditions, or at $28.2 billion per year (in 2013 dollars), as measured as the difference between the TMDL and a business-as-usual scenario. These considerable benefits should be considered alongside the costs of restoring the Chesapeake Bay.

Also according to PA § 105.302. Permit applications for existing stream crossings by pipelines for conveyance of petroleum products and gas.

(1) The shore lines of the affected body of water, including both high and low water marks.
The Transco consultant did not address the high and low water marks

(2) The alignment and depth of the pipe or cable, and the clear depth below the data plane afforded by the pipe in navigable channels.

(3) A cross section of the stream from bank to bank with the location of the pipeline affixed thereon.

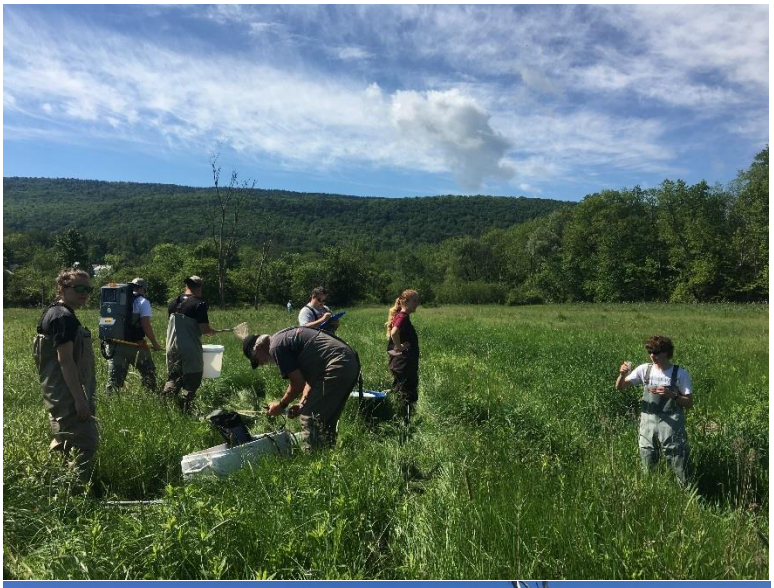
(4) The amount and type of cover material.
The amount of cover material and buried impervious materials were not accounted for in the 105/102 Chapter Permit

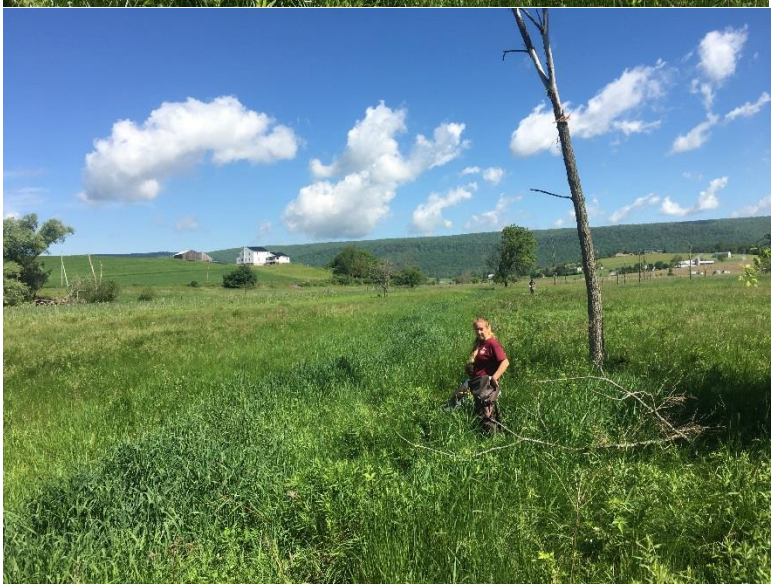
(5) Provisions for shut-off in the event of break or rupture.
Not included

(6) Other information as the Department may require.

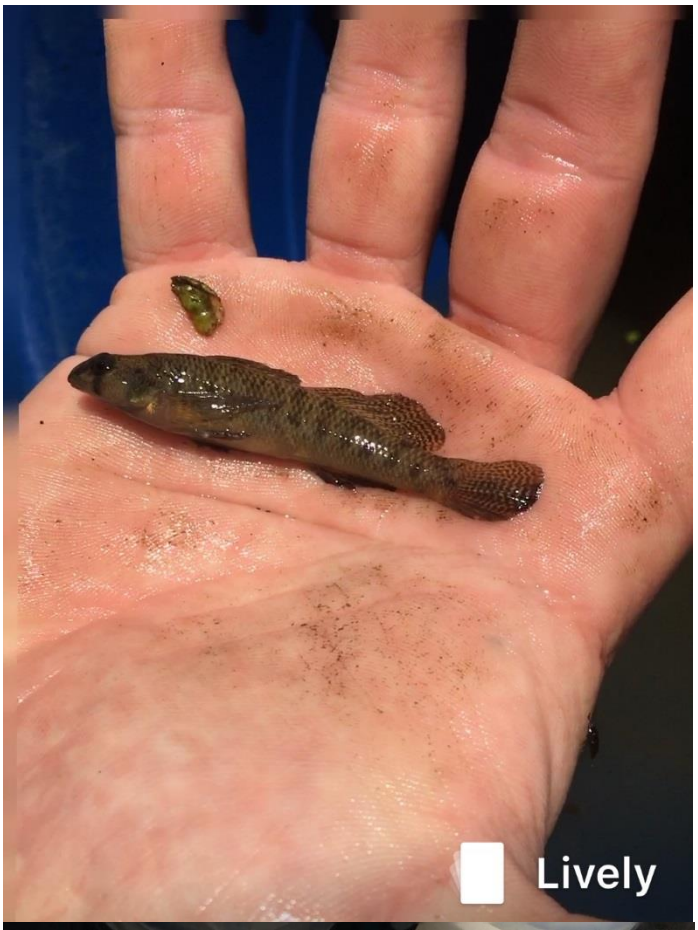
The Transco 105/102 Chapter Permit is overly simplified as all the stream crossings and impacts on forested riparian buffers are essentially treated the same. Transco is required to apply for a point source pollution permit during construction, and non-point source pollution cumulative impact during the 25 years necessary to re-establish shade cover, bank stability, sediment erosion, and nutrient run-off. Substantially, the point source general permits are not included in Transco's resubmission, nor are the proper conservation and best management practices for timber harvesting followed in the permit
http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-88925/363-2134-008.pdf
http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-92149/3800-PM-BPNPSM0345.pdf
http://extension.psu.edu/natural-resources/forests/private/tools-resources/publications/forest-stewardship/forest-stewardship-best-management-practices-for-pennsylvania-forests

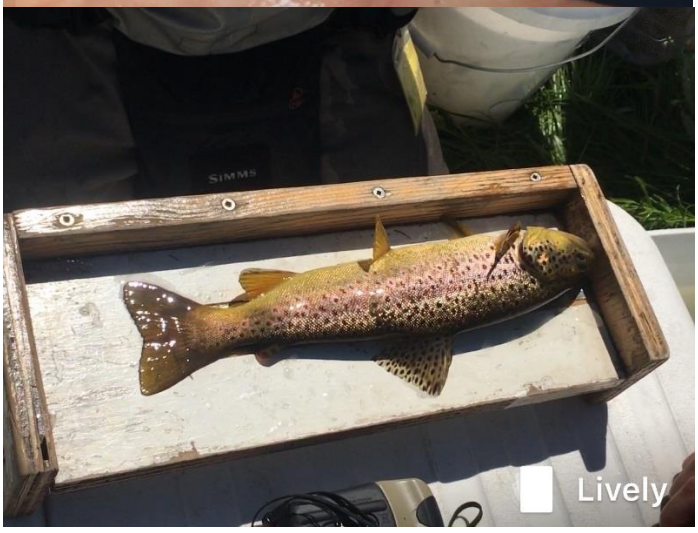
Unassessed Waterways-
Exceptional value high quality coldwater trout stream appear all across the landscape of Pennsylvania. Recently while assessing a channelized agricultural tributary to Pine Creek in Centre County, both the temperature data and macro-invertebrate communities indicated that potential habitat for Eastern Brook Trout. These photos indicate the current conditions of this site as a hayfield. The channelized agricultural tributary was designated impaired.





After our survey was done, the PA Fish 7 Boat confirmed a new designation, likely a Class A Trout Stream. Rather than assuming the unassessed waterways are lifeless, the PA DEP need to assume the water bodies with suitable temperature and/or macro-invertebrate communities are trout streams. Over 100+ unassessed waterways are crossed in this permit, without proper inventory taking place.





Enclosed you will find temperature data for 8 tributaries in Southern Lancaster County to be crossed by the Atlantic Sunrise Pipeline with thermal regimes below the critical Eastern Brook Trout threshold in Lancaster County as monitored by the Lancaster Water Quality Monitoring Network.

Climber's Run

Fishing Creek

Pequea Creek
Tucquan Creek
Steinman Run
Kellys Run
UNT Fishing Creek
Conowingo Creek
Climbers Run 2

The unassessed waterways are not properly addressed in the permit :
http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/AtlanticSunrise/Chapter_105LancasterCounty/Attachment%20B/Attachment%20B-1.pdf

Every unassessed waterway that the Atlantic Sunrise Pipeline crosses needs to inventoried for Brook Trout, bivalves, and all relevant aquatic and terrestrial flora and fauna relevant to the PNDI.

These questions then need to readdress:
4. Is the water resource designated as a wild trout stream by the Pennsylvania Fish and Boat Commission?
5. Is the water resource listed as High Quality or Exceptional Value in Title 25 Pa. Code Chapter 93?
Indicate the stream classification found in Chapter 93.
Classification EV; HQ-CWF; HQ-CWF, MF; CWF-MF; WWF-MF; TSF, MF; WWF.
6. Is the water resource designated as a National Wild or Scenic River or as part of the Commonwealth's Scenic Rivers System or classified as priority 1-A for inclusion in the system?

Appendix L-2
As stated in Chapter 102.14 of the Pennsylvania Code, unless authorized by exceptions, earth disturbance activities are not permitted within 150 feet of a perennial or intermittent river, stream, or creek; or lake, pond, or reservoir when the project site is located in an EV or HQ watershed (PADEP 2010b). Linear pipeline projects, such as the proposed Project, may request a waiver from PA DEP.
A waiver needs to be received for all unassessed waterways, they also need to be approached at a right angle. The PADEP, in a conference call held on January 28, 2016, provided guidance that a riparian buffer waiver request is not required if the pipeline crosses an EV/HQ stream and riparian buffer at an approximate right angle.

The Project crosses 65 riparian areas within Lancaster County, covering 34.49 acres. Over 32 of these acres are forested or herbaceous. Temporary workspace width at within riparian areas varies from 75 to 90 feet wide. Other actions that would or could contribute to the cumulative impacts of the Project in Lancaster County include 11 planned or potential residential developments that are within 0.5 mile of the CPL South route have you discussed this the

developers. Due to the highly explosive nature of this 42" pipeline residents within the evaporation zone should be notified under the risk assessment. Impacts to the PNDI within the evaporation zone need to be analyzed as well.
As described in your cumulative impact There are 10 planned, proposed, or existing natural gas transmission projects within 10 miles of the Project. What is this cumulative impact on sediment and nutrient loading?

In the DEP's technical deficiencies feedback stated, **Transco will need clearances from Fish and Boat, USFWS, PA Game Commission, DCNR, in lieu of PNDI. I have been in conversation with PA DEP's Assistant Counsel Anne Shapiro regarding my concerns that the public versions of these documents were not made available. These documents must be received prior to the approval of the 105/102 Chapter permits. Also, appendix G is referred to, but not attached:**
There is no appendix G attached

> Bog turtle habitat is known within fifteen (15) Pennsylvania counties including: Adams, Berks, Bucks, Carbon (Aquashicola Creek Watershed only), Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill (Swatara Creek Watershed only), and York.
>
> The proposed project is located in Lancaster County, which is a known bog turtle county. For further information on Phase I bog turtle habitat surveys of all wetlands proximate to the project, please see Appendix G.

Bog Turtle habitat is relevant according to the PNDI. In Transco's resubmission it is listed as N/A.
Why is Risk assessment listed in this section as N/A? A risk assessment is clearly applicable.

-PASPGP-4 Cumulative Impact Project Screening Form does not actually analyze or address cumulative impact.

There is no appendix G attached

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> The proposed project is located in Lancaster County, which is a known bog turtle county. For further information on Phase I bog turtle habitat surveys of all wetlands proximate to the project, please see Appendix G.

Bog Turtle habitat is relevant according to the PNDI. In your permit it is listed as N/A
Why is Risk assessment listed as N/A
Sediment
1300-PM-BIT0001 5/2012

The following answers provided in the 105/102 Chapter Permit are also of concern:
Question 12 12.0 Will the project interfere with the flow from, or otherwise impact, a dam?
12.0.1 Transco answered no. This is incorrect

Cumulative impacts on the Holtwood Dam, Safe Harbor Dam and Conowingo Dam are not addressed in the 105/102. According to the **LOWER SUSQUEHANNA RIVER WATERSHED ASSESSMENT, MARYLAND AND PENNSYLVANIA these three dams are all impacted with an increase in sediment loading LOWER SUSQUEHANNA RIVER WATERSHED ASSESSMENT,MARYLAND AND PENNSYLVANIA, as conducted by** The U.S. Army Corps of Engineers, Baltimore District (USACE), and the Maryland Department of the Environment (MDE)
http://bloximages.chicago2.vip.townnews.com/cecildaily.com/content/tncms/assets/v3/editorial/7/e7/7e7618e0-3b54-5a6b-9c79-386137b99442/54654700c8626.pdf.pdf

Sediment and associated nutrients from the land, floodplain, and streams in the lower Susquehanna River have been transported and stored in the areas (reservoirs) behind the dams over the past century. The dams have historically acted as sediment traps, reducing the amount of sediment and associated nutrients reaching the Chesapeake Bay. At the time that this assessment began, there was concern about the implications of reduced trapping and storage capacity of the reservoirs, and consequent impacts of increasing nutrient and sediment loads to the Chesapeake Bay. The Chesapeake Bay ecosystem is impacted both physically and biologically by the delivered sediment load from the Susquehanna River basin. These impacts are exacerbated by large storm and flood events which scour additional sediment and associated nutrients from behind the dams on the lower Susquehanna River and adversely affect the Chesapeake Bay ecosystem. This assessment concludes that each of the three reservoirs' sediment trapping capacity is greatly reduced from historical trapping, and that each reservoir has reached an end state of sediment storage capacity. The evaluations carried out through this assessment demonstrate that Conowingo Dam and Reservoir, as well as upstream Safe Harbor and Holtwood Dams and their reservoirs, are no longer trapping sediment and the associated nutrients over the long term. Instead, the reservoirs are in a state of dynamic equilibrium.

Therefore subsequent answers are incorrect. This project does impact Maryland. The project also impacts Army Corps of Engineers structures, these three dams.

Attachment E1 Eligibility Determination Section A, question 1 is incorrect. The Atlantic Sunrise Pipeline will impact greater than 1 acre of waters and wetland with elevated stream temperatures, sediment deposition, and nutrient run-off in Lancaster County alone, as well as the cumulative impact of the entire project.

Section B Question 7a. There is an urgent need bivalve inventories to be conducted at all proposed locations by an independent consultant. Which of these waterways have even been inventoried?
Question 12a. Answered "No" and in fact the project will impact study rivers.

Question 13 the proposed project does require the preparation of an Environmental Impact Statement

Question14- the proposed regulated does have an indirect impact on Maryland

YES ☐ NO ☒ 1a. Is your project located in the Corps of Engineers Philadelphia District (Delaware River Watershed), or in Chester, Lancaster, or York County?

The permit is specifically for Lancaster County, the answer above is incorrect.

YES ☐ NO ☒ 1b. Does your project propose impervious surfaces within waters and wetlands? **If YES, provide area of impervious surface within the footprint of waters and wetlands:** _____ square feet

YES ☐ NO ☒ 1c. Does any part of your project propose the removal of any impervious surfaces? **If YES, provide area of impervious surface being removed:** _____ square feet

Clearly these answers above are incorrect. As seen in the permit application cement and metal casings are used, which are impervious surfaces. Roadways will also be removed in certain sections.

YES ☐ NO ☒ 19. Does the proposed work temporarily impact waters and/or wetlands that will remain in place for more than 1 year?

Thermal impacts for the 65 acres of buffers and 32 acres of riparian buffers removed in Lancaster County alone will be measurable for over 20 years as the canopy is re-established.

YES ☐ NO ☒ 17. Will the proposed work alter, use, build upon, attempt to possess, or that may harm or impair any existing or proposed Corps Civil Works project, and any Corps-owned or managed property?

Holtwood, Safe Harbor, and Conowingo Dams will be impacted.

YES ☐ NO ☐ 22b. Will you comply with all of the identified conservation measures?

It is greatly concerning that Transco did not answer this question.

YES ☐ NO ☒ 14. Does the proposed regulated activity or area of indirect impact (secondary impact) extend across state boundaries (i.e., the work in not wholly located within the Commonwealth of Pennsylvania)?

The project does have a direct and indirect impact on Maryland at the Conowingo Dam and in the Chesapeake Bay

Attachment I 1 Location map is distorted and not to scale. This projections shortens the appearance of the project, and falsifies information in permit

A4a. Sanctuaries

The Project will not affect areas dedicated for use as sanctuaries by state or federal agencies or non-profit organizations.

This answer is incorrect. There is a dedicated sanctuary located at 3939 Laurel Run, Columbia, PA 17512. This sanctuary is located on the property of the Sisters of the Adorers of the Blood of Christ, an order of Catholic women religious whose "Land Ethic" to "respect our interconnectedness and oneness with creation" and to revere "Earth as a sanctuary where all life is protected" is a cornerstone of

their faith.

A4b. Refuges

The Project will not affect areas dedicated for use as refugees.

Transco does not answer the question correctly above.

Transco will replant the 50-foot-wide permanent ROW by applying a riparian seed mix. Failed over and over again.
Forest riparian buffer planting scheme is missing. This should be conducted by a forester. Ash and Elm trees should not be planted due to invasive pests.

The use of NHD data in remote sensing aspects of the permit are outdated and incorrect. Rather, The USGS Chesapeake Bay 1 meter Land Use data should be used to quantify and project impact. https://chesapeake.usgs.gov/phase6/map/#map=7/-8582732.74/4851421.17/0.0/0,4

Also according to the Transco permit "Fertilizer tablets may be placed in the backfilled soil to help the growth of
the planted trees and shrubs. After planting of the site has been completed, tree and shrub shelters will be installed
for those plants suitable for shelters. If deemed necessary, other methods
of wildlife damage control include the application of rodenticide to each
tree/shrub or installing bait boxes for meadow vole control."
These chemicals are inappropriate in the flood plain. Also, there is no maintenance plan included in the permit application, continued invasive control on the flood plain, survival requirements, herbicide and fertilizer application are of specific concern.

Wait until the 2017 EPA Phase WIP III is released that determines TDML and impacts on the sediment saturated Conowingo Dam.

Please do not hesitate to contact me if you would like to discuss further, or have any questions.

Sincerely,

Andrea Ferich
andreaferich@gmail.com
(856)283-1338

Enclosed: All unassessed waters need to better assessed to determine EVHQCW Class A Trout Streams