Conowingo
Watershed Implementation Plan

Objective: To propose a regional collaboration to mitigating the water quality impacts of the Conowingo Reservoir infill in a science-based and cost-effective manner.

Background: When the TMDL was first published in 2010, it was estimated that Conowingo Dam would be trapping sediment and associated nutrients through 2025. New research has determined this is not the case, and that the reservoir behind Conowingo Dam has now reached its trapping capacity. As a result, more phosphorus, sediment and nitrogen are now entering the Chesapeake Bay than were estimated when the TMDL was written. Now under full implementation of the seven jurisdictional WIPs, this additional pollution loading resulting from the Conowingo reservoir at near full capacity would cause water quality standards exceedences in the upper Bay. This additional unanticipated pollutant load must be addressed if we are to meet the bay's water quality standards as they are currently written and implemented. The Chesapeake Bay Program estimates that, after fully implementing the Bay TMDL and Phase I/II WIPs, at least an additional 6 M lbs of nitrogen and 0.26 M lbs of phosphorus reduction is needed in order to mitigate the water quality impacts of Conowingo Reservoir infill. Although further analysis may alter the respective nitrogen and phosphorus loads, the overall pollution reduction increases if implementation occurs in less effective areas of the watershed.

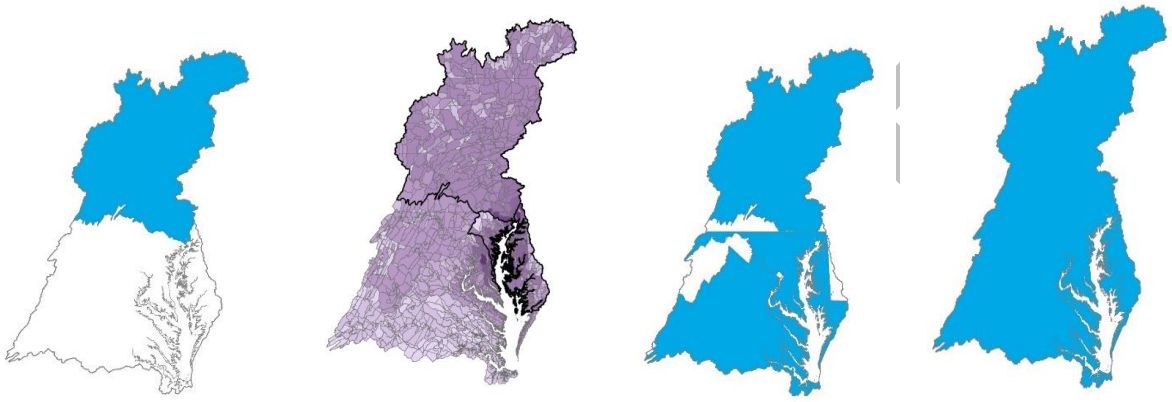
It is also important to recognize that the Conowingo Dam, a hydroelectric facility owned and operated by Exelon, is currently undergoing a Federal Energy Regulatory Commission relicensing which requires a Clean Water Act 401 Water Quality Certification from the state of Maryland. Maryland has indicated that they are going to review the May 2017 application from Exelon for consistency with all applicable state water quality standards. Public comments received on the application signal a need for Exelon to be a key partner in addressing the downstream water quality impacts.

The Chesapeake Bay Program Partnership has identified four options for assigning jurisdictional pollution load reduction responsibility and has also signaled that Exelon should also be held responsible for some portion of the reduction. The four geographic allocation options under discussion are listed below and do not yet include an assignment to Exelon, which is dependent upon the outcome of MD's Water Quality Certification. The four options are:

1. Susquehanna Basin Only – This option includes the area within the states of New York, Pennsylvania and Maryland that are in the Susquehanna River Basin that drain directly into the Conowingo Reservoir.
2. Susquehanna Basin + Other Effective Basins – This option adds the other effective basins that drain directly into the Chesapeake Bay within the state of Maryland and the Commonwealth of Virginia (eastern shore basin) to the first option.

3. Susquehanna + All of Maryland and Virginia – This option adds the rest of the major partnership states that benefitted from the original calculation of the TMDL in 2010.
4. The Entire Watershed – This option includes all seven states in the allocation of the pollution reduction.

The four options are also illustrated graphically in Figure 1 below.



(a) (b) (c) (d)

Figure 1 – Four options currently under consideration by the Bay Partnership for assigning reduction responsibility for the additional reduction as a result of Conowingo infill. a) Susquehanna Basin, b) Susquehanna Basin + Other Effective Basins, c) Susquehanna + All of Maryland and Virginia and d) Entire Watershed.

There are also three options with respect to timing to account for this additional load reduction:

1. Now – The loading is incorporated now into the Phase 3 WIP and must be addressed by 2025
2. Beyond 2025 – The loading is recognized as something that must be addressed now, but the actual implementation will need to occur before and continue beyond 2025.
3. Post-2025 – The loading is not something that can be addressed now. The impact of this loading will be re-visited once the progress made from the implementation of the load reductions defined by the TMDL for 2025 is assessed.

After careful and extensive discussion of these options, the following alternative approach is offered.

Alternative Approach: Develop a separate and collaborative Conowingo Watershed Implementation Plan that provides details on how to reduce adverse water quality impacts to the Chesapeake Bay resulting from Conowingo Reservoir infill and provides a timeline at which it can be accomplished.

The recommended approach is in response to the recognition by all Chesapeake Bay Partnership jurisdictions that:

A. Trapping of pollutants by the Conowingo reservoir over the past 80+ years has benefited the water quality of the Bay, it has also to varying degrees benefitted states by lessening load reduction responsibilities, but now that benefit is greatly diminished;
B. Elevated pollution levels upstream of the reservoir accelerate the rate at which the Conowingo reservoir has filled;
C. No maintenance of the reservoirs to restore the trapping capacity has occurred over the life of the dam and the reservoir is now at near full capacity; and
D. The most cost-effective approach to mitigating the current adverse water quality impacts, of the near-full capacity Conowingo reservoir, are realized by pooling resources to pay for pollution reduction practices in the most effective locations. See Figure 2 which illustrates that when pollution reduction practices are placed in more effective locations less overall load reduction is needed.

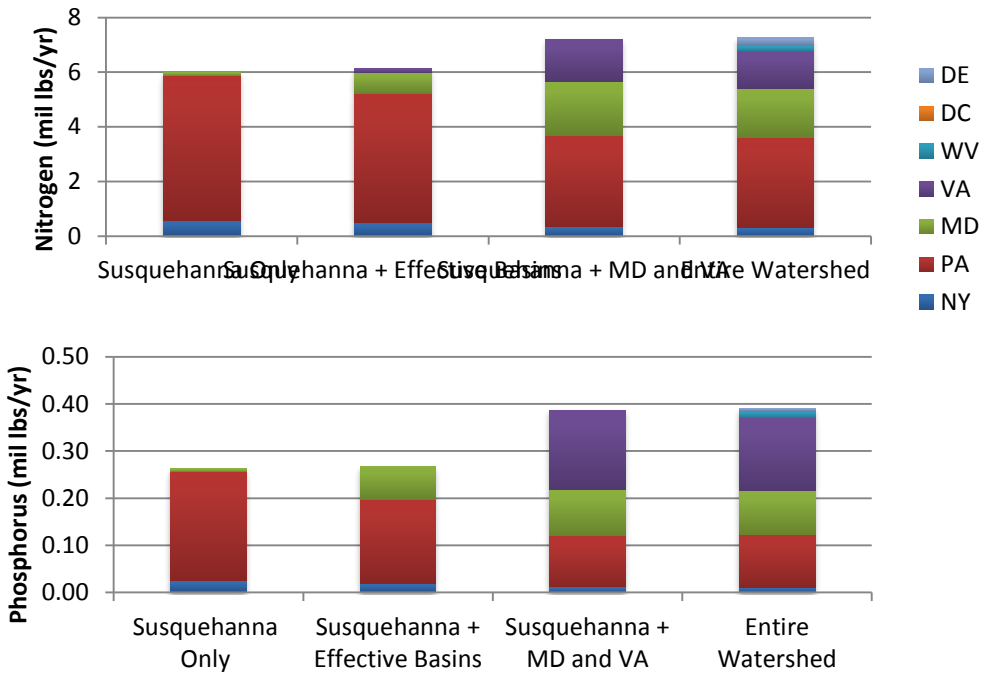


Figure 2 – Basinwide Conowingo targets developed using four different allocation options

The Conowingo Watershed Implementation Plan (WIP) would include consideration of the following innovative components:

1. Creating a fund for all parties to invest in the installation of practices in the most cost-effective and pollutant load reduction efficient locations.
2. Incorporating the outcome of the Exelon 401 Water Quality Certification.
3. Conducting a purposeful re-allocation of EPA's Chesapeake Bay Implementation Grant (CBIG), Chesapeake Bay Regulatory and Accountability

Program Grant (CBRAP) and other federal funds that incorporates an eighth planning target and WIP for Conowingo.

4. Establishing an oversight committee as a subcommittee of the Chesapeake Bay Program Partnership's Principals' Staff Committee (PSC).
5. Developing a process by which preferred practices, targeted geographic locations and implementation projects will be selected and deployed.
6. Managing reservoir sediment through dredging and beneficial re-use based upon information from the Maryland pilot project.
7. Determining achievability and in what timeframe.

Although there are many specifics to this approach that remain, the Chesapeake Bay Program Partnership's Water Quality Goal Implementation Team (WQGIT) recommended that more detail be provided on; 1) pollutant load targets; 2) funding options; 3) implementing pollution reduction practices and 4) crediting.

Proposed details are as follows:

<u>Pollutant Load Targets</u>: The total pollutant load targets attributed to Conowingo Reservoir infill would be assigned to a separate Conowingo Planning Target which all Bay jurisdictions would work collaboratively to achieve.

For the reasons described in A. and D. above, rather than adding those individual allocations to jurisdictions' existing allocation targets, the recommendation is that the total allocation be assigned to its own, separate Conowingo Planning Target (i.e. we will now have eight Planning Targets: the seven bay jurisdictions + Conowingo) to be achieved collaboratively by all relevant parties in a separate implementation plan. In other words, although the PSC may decide to assign ultimate responsibility for meeting the Conowingo allocation to the most effective areas in a subset of Bay jurisdictions (See Figure 1 and Table 1), all Bay jurisdictions recognize the benefits of Conowingo's past pollutant trapping and, therefore, all agree to work together in implementation of the agreed upon plan.

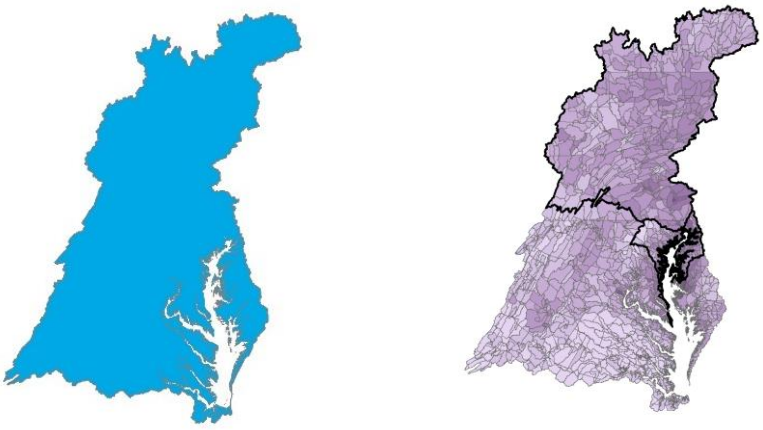


Figure 3. All jurisidictions will participate in mitigating the impacts of the Conwoingo infill (left). Pollution reduction practices will be within and Conowingo planning targets will be assigned to the most effective areas (right).

Table 1. – Draft Conowingo planning targets assuming management practices are located in most effective areas

Jurisdiction	Nitrogen Target (Million lbs)	Phosphorus Target (Million lbs)
NY	0.50	0.020
PA	4.71	0.177
MD	0.78	0.069
WV[a]	0.00	0.000
DC[a]	0.00	0.000
DE[a]	0.00	0.000
VA[a]	0.14	0.000
Basinwide	6.12[b]	0.266[b]

a) Jurisdictions do not have an explicit targets but agree to provide funding and additional resources to implement practices in the most effective areas

b) Basinwide target, and jurisdiction targets will be adjusted after MD's 401 Water Quality Certification is finalized

<u>Funding options</u>: All parties would agree to contribute resources (e.g., funding, technical assistance, etc) into a pool to be managed collaboratively to achieve the necessary pollutant load reductions.

The unique and critical component to this proposed Conowingo WIP is the pooling of resources and collaborative application of those pooled resources in the most cost-effective manners possible. Pooled resources will be phased in over a period of time. Key sources of initial funding are anticipated to be realized through the Exelon Water

Quality Certification Agreement (May 2018) and reallocation of existing federal funds to states for Chesapeake Bay restoration, primarily CBRAP and CBIG. Additionally, EPA is previously on record in their commitment to re-evaluate CBRAP and CBIG funding allocation formulas based on the new Phase 3 WIP planning targets, and would consider a new Conowingo planning target in that reevaluation. Other federal (ex. USDA, NRCS, etc.) and non-federal fund sources (e.g., NFWF Chesapeake Stewardship Fund) would be pursued in the future. Amounts and forms of contributed resources from individual jurisdictions, as well as realization of additional fund sources would be phased in over time as appropriate.

Implementing the Plan: Pooled resources would be managed by a third party with Chesapeake Bay Program Partnership oversight to implement approved pollution reducing practices in the most cost-effective and pollutant load reduction efficient manners possible independent of jurisdictional boundaries.

A third party would be charged with applying the pooled resources in the most cost-effective and pollutant load reduction efficient locations in order to achieve the required Conowingo pollutant load reductions for the least cost. Reductions would come from existing CBP approved BMPs and other innovative components such as those listed above. Geographic targeting of BMP locations would be consistent with CBP approved models and watershed loading rates. Additionally, the fund manager would be charged with verifying and tracking all reductions. Potential third parties could include the Chesapeake Bay Program Office, Chesapeake Bay Trust, NFWF or the Susquehanna River Basin Commission.

Crediting Implementation

Practices funded with pooled money are credited to the Conowingo planning target only, regardless of where the practices were implemented or where the funding originated.

Plan Development Schedule

December 2017	Receive PSC Approval on Conowingo Watershed Implementation Plan concept and the first cut of the planning targets to address this additional load.
January 2018	Send letter from PSC to Exelon emphasizing the importance of their continued involvement in this effort to address the water quality impact from Conowingo Dam.
February 2018	Release an EPA RFP for an award of a cooperative agreement or contract to facilitate the development of the Conowingo WIP.

February - May 2018	All partners, including a representative from each jurisdiction, the Chesapeake Bay Commission and EPA work collaboratively to begin development of the Conowingo WIP to include: 1) determining a fund manager, 2) assigning specific jurisdiction reduction responsibilities, including shared resources, and 3) working with EPA and other federal partners on federal funding reallocations.
May 2018	Determine the role of Exelon in plan implementation based on Maryland's decisions regarding 401 certification.
June – Oct 2018	Select the RFP awardee and building on the decisions made between January and May 2018, the oversight committee will work with the awardee to continue the drafting of a Conowingo WIP to include local government and public engagement strategies, the identification of specific reduction practices and a timeline, funding sources, establishment of the fund manager, and the determination of any gaps and contingencies.
October 2018	Begin utilization of any federal FY19 federal funding allocated to the implementation of the Conowingo WIP.
Oct-Nov 2018	30-45 day public review and comment period. Finalize the Conowingo WIP based on comments.
February 2019	Submit the final draft Conowingo WIP for Partnership review as part of the Phase 3 WIP review process.
July 2019	Post the final Conowingo WIP along with the seven watershed jurisdictions' Phase 3 WIPs.
October 2019	Begin full plan implementation utilizing funding allocated to the plan for federal fiscal year 2020.
Annually	EPA to evaluate the effectiveness and progress of the Conowingo WIP, pursue additional funding sources to help with implementation, identify additional mitigation options and adjust as necessary.
Summer 2023	Reevaluate and make any necessary corrections based on Conowingo WIP implementation and any other factors.