
CONOWINGO WATERSHED IMPLEMENTATION PLAN

PROGRESS NEWSLETTER

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Photo Source: Bay Journal



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BACKGROUND INFORMATION

The Conowingo Dam is a 94-foot-tall hydroelectric generating station located about 50 miles northeast of Baltimore Maryland, one of three dams on the lower Susquehanna River. The dam began operation in 1928 and is currently owned and operated by Constellation Energy Generation, LLC. The water impounded by the dam forms the Conowingo Reservoir which serves as a drinking water supply for Baltimore, cooling water for a nuclear generation station, and a recreational fishing and boating spot. The dam also serves as a “pollution gate” by trapping sediments and nutrients in the river and preventing them from flowing downstream and entering the Chesapeake Bay.

Over time, the reservoir has nearly filled up with sediment resulting in little space left to store water and additional sediment settling out from the Susquehanna River. Additionally, major storm events scour sediment from the reservoir, which over-top the dam and create pollution pulses to the Chesapeake Bay. Currently, the dam is estimated to be trapping as much as 2-% of nitrogen, 45% of phosphorus and 70% of sediment flowing downstream.

In 2018, a partnership between the Chesapeake Bay Program and a steering committee with members from each of the six watershed states and the District of Columbia developed a Watershed Implementation Plan (WIP) for the Conowingo Dam. The partnership divided the responsibility for accounting for additional pollution loads entering the Chesapeake Bay from the Susquehanna River Watershed. The Conowingo Dam is just one of a number of issues being addressed through the collaborative decision-making process.

The Conowingo WIP (CWIP) will reduce nitrogen delivered to the Chesapeake Bay by 6M pounds per year. The CWIP was approved by the Principals Staff Committee in September 2021. Phase I includes meeting specific nutrient reduction goals by December 2025. The CWIP Steering Committee issued a new Two-Year Milestones for 2024/2025 in January 2024. The New Milestones include reporting of load reduction progress annually, targeting implementation of practices to achieve 25% of the nitrogen and phosphorus reductions by December 2025, and developing a plan for programmatic capacity and technical assistance needs to achieve goals.

PROJECT INITIATIVES

The CWIP’s goal is to reduce 6M lbs of total nitrogen across the three states within the Susquehanna River Watershed: New York, Pennsylvania, and Maryland. Each jurisdiction arranges their own nitrogen reduction targets, solicits for projects, and awards funding based on set criteria. To date, a total of \$36M has been invested across jurisdictions to implement projects totaling 238,710 lbs of total nitrogen reduction. The following sections describe the progress towards CWIP goals by jurisdiction.

New York: Upper Susquehanna Coalition

A service contract for \$1,434,089 between New York State Department of Environmental Conservation (NYSDEC) and the Upper Susquehanna Coalition was finalized in 2024 and will be in place until 2028. The contract includes technical and funding assistance to landowners to support planning and implementation of BMPs that reduce nutrient and sediment loads to the Chesapeake Bay. The funds will provide support for multiple objectives that include riparian buffer stewardship, planning, and implementation, Conowingo WIP implementation, and cover crop implementation.

For the Conowingo WIP objective, the Upper Susquehanna Coalition will coordinate, plan and implement high priority BMPs identified in the Conowingo WIP. These include natural filters (wetland restoration and riparian forest buffers), sustainable farm practices (prescribed grazing and conservation tillage), and nutrient reduction agricultural practices (nutrient management and manure incorporation). Numeric targets include: 30 acres of riparian forest buffer, 150 acres of prescribed grazing, and 1,000 acres of nutrient management. Costs of Implementation: Based on the most recent cost estimates in the Chesapeake

Assessment Scenario Tool (CAST), the implementation of these practices will cost on average \$18.04 per pound of nitrogen.

Costs of Implementation: Based on estimates from the Chesapeake Assessment Scenario Tool, the funding allocated to the Upper Susquehanna Coalition for Conowingo WIP projects in New York is estimated to be \$221,665 and will contribute to an annual reduction of 2,460 lbs of total nitrogen.

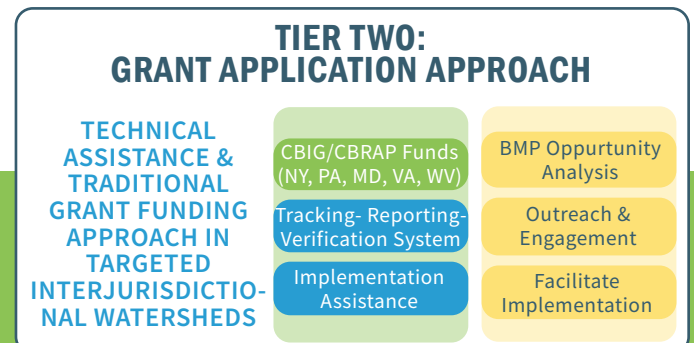
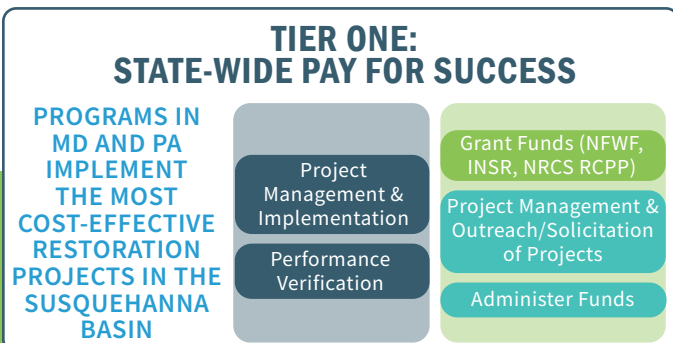
Pennsylvania: PENNVEST Clean Water Procurement

The PENNVEST Clean Water Procurement Program was initiated in 2023 and has released three rounds of funding. Criteria for awarding pay-for-performance contracts emphasize innovative financing and greatest return on investment in terms of nitrogen reductions. Projects with co-benefits are incentivized.

\$22M of funding was allocated to PENNVEST for pay-for-performance projects to be used by 2026. The program was initiated in 2023 and awarded in July 2024. \$6M of state funds were allocated annually to the program in 2024, allowing a third round of funding to be announced in November 2024.

Eligible projects include: best management practices that can be quantified using the Chesapeake Bay Nutrient Tracking Tool (CBNTT) found on the PADEP Nutrient Trading Program website. Criteria for project selection includes dollar cost per pound of nutrient or sediment removal, quantity of nutrient or sediment removal, quantity of nutrient or sediment loads reduced annually, extent to which the project includes small farms (that are not CAFOs), verified nutrient/sediment reduction in a Tiered County, verified nutrient/sediment reduction in a local agriculturally-impaired watershed,

THE CWIP IS A PARTNERSHIP AMONG THE STATES OF MARYLAND, PENNSYLVANIA, & NEW YORK THAT TAKES A TWO-TIERED APPROACH TO IMPLEMENTATION:



fiscal/managerial viability of entity, and additional community/environmental benefits. Award recipients are required to provide a description of the measures to be used to quantify, by measurement or modeling, nutrient or sediment resulting from the proposed projects or practices.

Costs of Implementation: Current PA implementation projects include: wetland and riparian grass buffer restoration (\$9.97/lb TN*), dairy and sheep farm stormwater management BMPs (\$6.91/lb TN*), beef and poultry farm BMPs (\$9.96 /lb TN*), dairy and beef farm BMPs (\$9.96 /lb TN*), dairy and beef farm BMPs (\$40.62/lb TN*), wetland restoration (\$19.01/lb TN*), wetland and stream restoration and riparian plantings (\$149.34/lb TN*), wetland restoration and riparian buffer fencing (\$25.14/lb TN*), and other various projects.

Structural practices may only require this once or at regular intervals. Annual practices must be verified yearly.

Approximately \$11.5M was awarded for seven projects in Maryland and Pennsylvania that represent a diversity of restoration practices, including riparian forest buffers on land used for livestock grazing and hay production, the conversion of cropland to grassland, agricultural precision nutrient management, and stream restorations. A second RFP was issued in September 2024 and the proposals are currently under review.

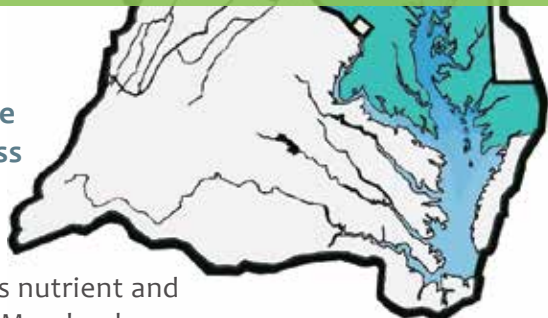


THE PROGRESS TO DATE REPRESENTS 4% OF THE TARGETED NITROGEN LOAD REDUCTION IN THE CWIP. THE CWIP MILESTONES SET A GOAL OF 25% OF THE TOTAL NITROGEN REDUCTION BY THE END OF 2025.

**Maryland:
Maryland Department of the
Environment, Pay-for-Success**

Maryland allocated \$25M to establish a pay-for-success program in support of the CWIP's nutrient and sediment reduction targets. The Maryland Department of the Environment (MDE) partnered with the Susquehanna River Basin Commission (SRBC) to issue the first CWIP Verified Nutrient Reductions RFP in 2023 and awarded projects in the second quarter of 2024.

Criteria for awarding pay-for-success contracts emphasize innovative financing and the greatest return on investment in terms of cost per pound of nitrogen reduced. Projects must be within the Susquehanna River Basin and be creditable using CAST. Proposals receive a higher ranking if they are in Cecil or Harford Counties, located in the Deer Creek, Conowingo Creek, or Octoraro Creek Watersheds, and in a Most Effective Basin. Award recipients are required to provide a verification plan which describes the protocol for verifying that practices are completed to Chesapeake Bay Program standards using a third-party verifier.



Costs of Implementation: Current projects include two (2) precision nutrient management projects (\$15.00 and \$6.27/lb TN*), forest riparian buffers and land use conversion (\$18.98/lb TN*), forest riparian buffers (\$49.58/lb TN*), and three (3) stream restorations (\$136.49/lb TN*).

**indicates average cost per pound of total nitrogen reduction.*

PROJECT FUNDING

\$1.0M is allocated to the Upper Susquehanna Coalition for projects in New York, contributing to an annual reduction of 2,460 lbs of total nitrogen.

\$24.3M is currently distributed to various pay-for-performance projects in Pennsylvania, contributing to an annual reduction of 70,600 lbs of total nitrogen.

\$25.0M has been allocated to the Susquehanna River Basin Commission in Maryland for pay-for-success projects contributing to an annual reduction of 165,650 lbs of total nitrogen.

The current project status is reflected below. The values in the figure represent the amounts distributed to various projects that are in planning, design or construction implementation. The resulting projected annual reduction in total nitrogen is shown for each state.

CONOWINGO WATERSHED IMPLEMENTATION PLAN PROGRESS

CWIP GOAL: Reduce 6 Million Pounds of Total Nitrogen at an Average Cost of \$8/LB or Annualized Cost of \$53.3M/Year

| average \$ | current project costs & TN reduction | |
|--|---|--|
| NY \$18 /lb. TN | current projects: \$221,665 <small>\$18/LB TN- Natural Filters & Sustainable Farm Practices</small> | annual reduction: 2,460 lb. TN |
| PA \$15 /lb. TN | current projects: \$24.3M <small>\$7/LB TN- Dairy & Sheep Farm SW Management \$19/LB TN- Wetland Restoration \$149/LB TN- Wetland/Stream Restoration</small> | annual reduction: 70,600 lb. TN |
| MD \$12 /lb. TN | current projects: \$11.4M <small>\$6/LB TN- Precision Nutrient Management \$19/LB TN- Forest Riparian Buffer \$136/LB TN- Stream Restoration</small> | annual reduction: 165,650 lb. TN |

PROGRESS TOWARDS CWIP GOALS

\$ 3.2 M

ANNUAL COSTS

TOTAL INVESTMENT TO DATE

\$36.0 M

PARTNERS

*values reflect total investment to date, including program administration costs

UPCOMING EFFORTS

Practices are being implemented in New York, Pennsylvania and Maryland. The CWIP Steering Committee is tracking progress across jurisdictions for projects that are in planning or design phases of implementation.

Pennsylvania’s Local Government Impact (LGI) grant was awarded to Chester County Conservation District for \$2.3M to promote CWIP progress in the priority Octoraro Watershed. Chester County Conservation District reported four (4) BMPs implemented in June 2024 toward CWIP progress.

Future editions of the Progress Newsletter will highlight specific projects including descriptions, costs, implementation, and photographs.

COORDINATOR POSITION

To implement the CWIP, two new positions have been proposed. The Octoraro Watershed Coordinator and the Susquehanna Watershed Coordinator will provide technical assistance to the existing jurisdictions, local watershed groups, and directly to farmers, property owners and producers. The two positions would be housed by Chester County Conservation District and SRBC, respectively. The Octoraro position has been approved. A funding application has been submitted to the National Fish & Wildlife Foundation (NFWF) Innovative Nutrient & Sediment Reduction (INSR) program to provide for three years of the Susquehanna Watershed Coordinator services. Both programs will be sustained through additional grant applications.



Photo Source: The Center for Watershed Protection

FOR MORE INFORMATION

Visit the Conowingo WIP Steering Committee website at: www.chesapeakebay.net/