CONOWINGO
WATERSHED IMPLEMENTATION PLAN
PROGRESS NEWSLETTER

ISSUE NO. 2 SEPTEMBER 2025

Conowingo Dam
Photo Credit: Chesapeake Bay Program

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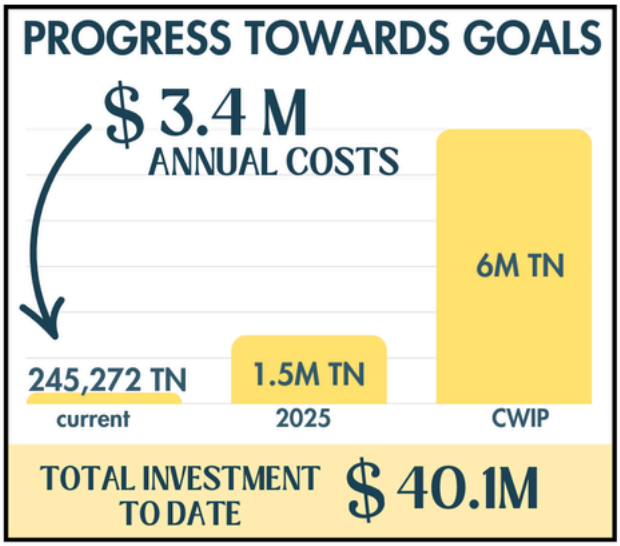
PROJECT BACKGROUND

The Conowingo Watershed Implementation Plan (CWIP) was approved by the EPA Chesapeake Bay Program's Principals Staff Committee in September 2021. The plan provides a comprehensive, cost-effective strategy to reduce nutrient pollution flowing past the Conowingo Dam into the Chesapeake Bay by more than 6 million pounds annually.



PROGRESS UPDATE

CWIP is a collaborative effort among Maryland, Pennsylvania, and New York. To date:

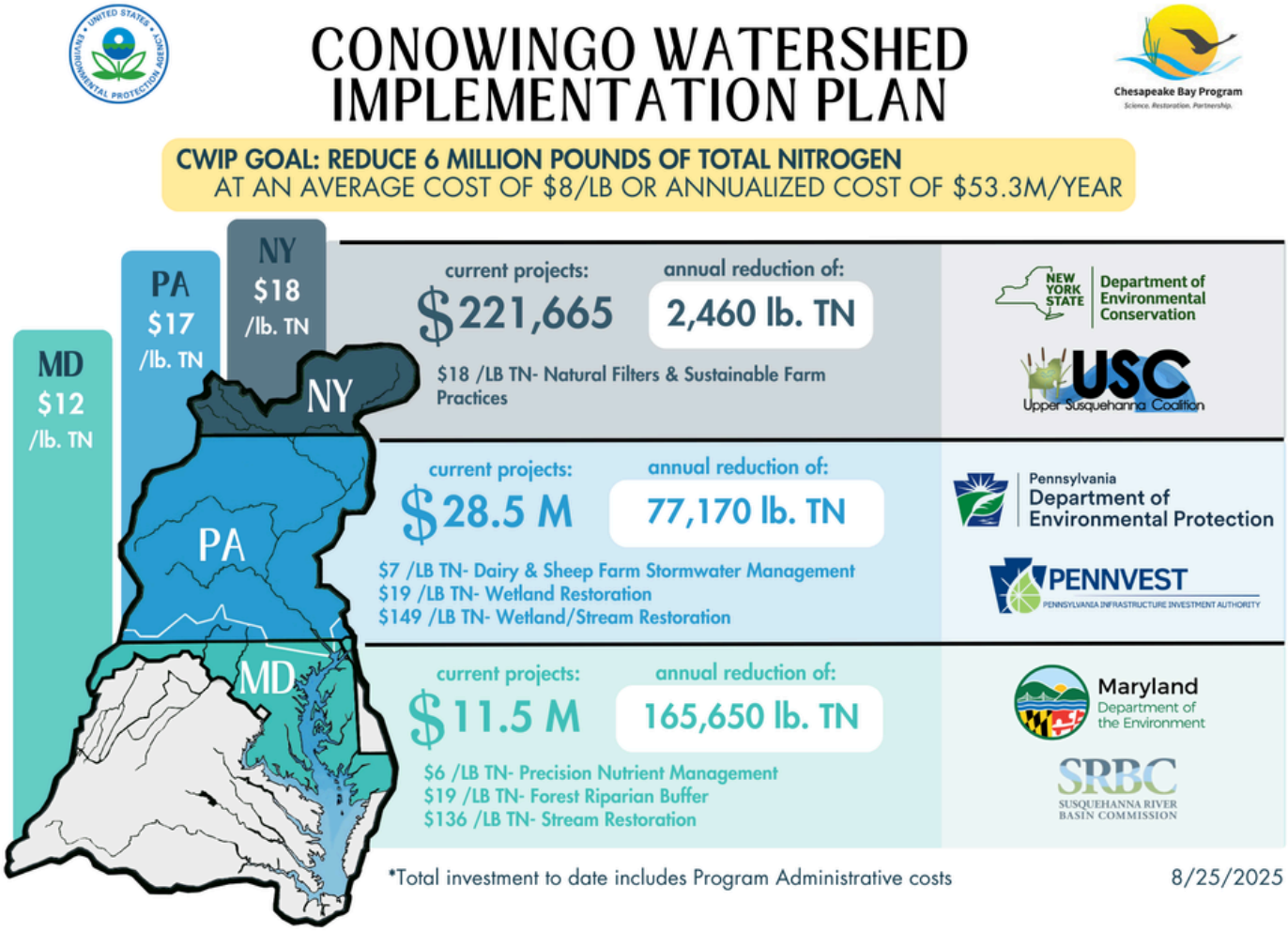
- Maryland committed $25 million through a Pay-for-Success program administered by the Susquehanna River Basin Commission.
- Pennsylvania allocated over $26 million for the Clean Water Procurement Program (administered by PENNVEST) and designated more than $3 million in Local Government Investment funds.
- New York contributed $1.4 million with the Upper Susquehanna Coalition that includes providing technical and funding assistance to support CWIP implementation.

Together, the three states have contracted more than $40 million in projects, expected to achieve 245,272 pounds of nitrogen reduction. Most recently, in August 2025, PENNVEST announced the third round of Clean Water Procurement Program projects to purchase verified nutrient and sediment reductions.

The progress to date is illustrated in the graphic below.

More information can be found at the Steering Committee website:
Conowingo WIP Steering Committee

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.



BARNYARD RESTORATION
(Multiple BMPs)
Mount Pleasant Mills,
Snyder County, PA

North Branch Mahantango Creek Watershed

WINEY FARM BARNYARD RESTORATION

Project Overview

The Winey Farm Barnyard Restoration Project in Synder County, Pennsylvania is a leading example of agricultural conservation and stormwater management practices. Completed in early 2025, this multi-faceted restoration effort directly addresses water quality issues associated with nutrient runoff and sedimentation impacting the North Branch Mahantango Creek, which is listed as impaired for siltation and organic enrichment caused by agricultural activities.

The project restores approximately 8,375 square feet of barnyard area with a combination of BMPs including a heavy use area (HUA), separate manure stacking facilities for poultry and beef cattle, stormwater runoff controls, and barnyard drainage improvements. These improvements result in substantial annual pollution reductions of 1,503 pounds of nitrogen, 78 pounds of phosphorus, and over 170,000 pounds (85 tons) of sediment. The upgrades significantly reduce polluted runoff from reaching nearby streams, directly improving stream health and moving impaired segments closer to delisting.

Project Context

This project is part of the broader Rapid Stream Delisting Strategy led by the Chesapeake Conservancy. The strategy aims to target high-impact projects in impaired watersheds to produce measurable water quality gains. Winey Farm was identified as a high-priority site where BMPs could be combined to deliver maximum measurable water quality improvement results. Upon completion of the project, the results were certified by the National Resources Conservation Service (NRCS).

QUICK FACTS
ANNUAL REDUCTION:
1,503 lbs. Nitrogen
78 lbs. Phosphorus
170,879 lbs. Sediment
PROJECT AREA:
8,357 SQUARE FEET
TIMELINE:
JUNE 2022- FEBAUARY 2025

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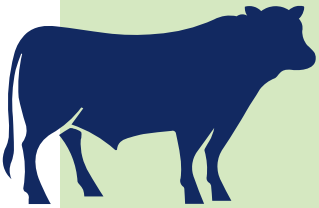

BEEF OPERATION BMPs

Waste storage facility- 1,936 sf
Heavy use area protection- 1,519 sf
Roof runoff controls- 200 ft
Roofs & covers- 3,119 sf
Access road- 1,800 sf
Underground outlet- 200 ft
Exclusion fence- 114 ft
Lined waterway or outlet- 30 sf
Trails & walkway- 384 sf
Subsurface drain- 300 ft

POULTRY OPERATION BMPs

Waste storage facility- 1,920 sf
Heavy use area protection- 480 sf
Roof runoff controls- 96 ft
Roofs & covers- 1,920 sf
Access road- 720 sf Diversion- 53 ft
Underground outlet- 90 ft
Lined waterway or outlet- 94 sf
Structure for water control- 1,050 ft
Subsurface drain- 100 ft
Critical area seeding- 0.1 ac Mulching- 0.1 ac

Landowner Relationship

The Snyder County Conservation District had an existing connection with the farmer, who had previously implemented conservation practices independently and was eager to expand those efforts.

Funding and Partnerships

One of the most significant challenges in implementing the Winey Farm Barnyard Project was coordinating multiple funding sources, each with its own timeline, requirements, and approval processes. Large-scale projects like this one which feature several interconnected BMPs often exceed the scope of a single funding stream. The project brought together resources from the NRCS Regional Conservation Partnership Program (RCPP), National Fish and Wildlife Foundation (NFWF) Small Watershed Grant, PENNVEST's Clean Water Procurement Program, and the Hamer Foundation. Coordinating these funding sources was complex, but critical to implementation success and ensuring that the conservation outcomes aligned with water quality goals.

The success at Winey Farm showcases the importance of local partnerships, including the Snyder County Conservation District playing a key role in landowner engagement, planning, and technical support. Long-term protection of the installed BMPs is secured through deed agreements, ensuring that the water quality benefits will last well beyond the initial investment.

Noteworthy Successes

The Winey Farm project is the first pay-for-performance project in the North Branch Mahantango Creek catchment. As part of the Chesapeake Conservancy's Rapid Stream Delisting Strategy, the project piloted a model where funding is tied to measurable environmental outcomes, like nutrient and sediment reductions. Its success sets a precedent for future restoration efforts using performance-based approaches in impaired agricultural watersheds.

In addition to promoting long-term sustainability for a multi-generational farm, the project helps pave the way for broader conservation efforts in the region.

PROJECT FUNDING

PENNVEST
Clean Water Procurement Program (CWPP)
Hamer Foundation Grant
National Resources Conservation Service (NRCS)
Regional Conservation Partnership Program (RCPP)
Chesapeake Conservancy
NFWF Small Watershed Grant (SWG)

We are excited to welcome Ray Fenstermacher as the new Octoraro Watershed Restoration Coordinator with the Chester County Conservation District!

About Ray Fenstermacher

A long-time Chester County resident and a registered professional geologist in Pennsylvania, Ray brings a deep well of experience, expertise, and passion to the role.

His background includes work as an environmental consultant specializing in groundwater remediation technologies, with a strong focus on geochemical applications. Ray is also a dedicated conservationist who has spent many years fishing in the creeks and streams of southeastern Pennsylvania. He looks forward to making a meaningful impact on the health and resilience of the Octoraro watershed.

In his new role, Ray will provide both technical and administrative assistance. His efforts will help advance the goals of the Conowingo Watershed Implementation Plan (CWIP) and improve water quality throughout the region.

Ray's position is designed to build local capacity by fostering partnerships with key organizations, including the Octoraro Watershed Association, Octoraro Source Water Collaborative, Susquehanna River Basin Commission, and environmental agencies in Pennsylvania, Maryland, and New York.

Key responsibilities of the role include:

- Connecting communities with funding opportunities and reducing technical and administrative barriers to project implementation.
- Identifying and prioritizing project locations in collaboration with local jurisdictions and partners.
- Hosting listening sessions with stakeholders to understand community needs and implementation challenges.
- Supporting grant writing and assisting applicants in securing funding for capacity building, technical support, and water quality improvement projects.
- Conducting educational workshops on funding opportunities and project development.

This position is funded through PA DEP's Local Government Implementation (LGI) funds, conveyed to Chester County Conservation District through their annual County-wide Action Plan (CAP) block grant.

To learn more about the Octoraro Watershed, visit the State of the Octoraro Creek Watershed.

IMPROVING SOIL HEALTH FOR A HEALTHY ECOSYSTEM

AGRICULTURAL BMPS AND CAST TOOLS

In April, the CAST webinar "Agricultural BMPs for a Healthy Ecosystem" was presented by Helen Golimowski and Olivia Devereux. The webinar provides valuable insights to support CWIP project implementation and inform local planning efforts.

Soil health and water quality are deeply interconnected. Practices that improve soil structure and organic matter—such as cover cropping, conservation tillage, and prescribed grazing—not only boost crop productivity and drought resilience but also help reduce sediment and nutrient runoff, particularly nitrogen and phosphorus. Since farmland has large pervious surface area, it is uniquely positioned to support stormwater infiltration and watershed restoration. There are several common Agricultural Best Management Practices (BMPs) that advance soil health.

Tillage Management

Reduced and no-till practices minimize soil disturbance and maintain crop residue on the field, improving soil structure, porosity, and biological activity. Depending on the level of residue maintained, tillage practices are classified as low residue (15–29%), conservation (30–59%), or high residue (60%+).

Cover Crops

Planted after the primary growing season, cover crops improve water retention and reduce erosion and phosphorus runoff. Effectiveness depends on crop type, region, and management strategy.

Nutrient Management

Aligning nutrient inputs with crop needs helps minimize excess application. Manure is often preferable to chemical fertilizers due to its carbon-bound nutrient forms, which are less prone to runoff.

Pasture and Grazing Management

Practices such as rotational grazing, limiting animal concentration areas, and maintaining at least 60% vegetative cover help reduce erosion and nutrient runoff, while supporting herd and soil health.

The Role of CAST

The **Chesapeake Assessment Scenario Tool (CAST)** is a web-based tool for estimating nitrogen, phosphorus, and sediment loads. Users can model and compare BMP scenarios by geography and land use type to assess pollutant load reductions and associated costs.

CAST helps conservation planners, producers, and policymakers to estimate load reductions and explore trade-offs between water quality and production. The tool helps to identify cost-effective BMPs based on land use (cropland, hayland, pasture, etc.) and can compare modeled scenarios with implemented practices to guide future planning.

Key Takeaways

- Soil health and water quality go hand in hand. Improving soil structure and organic matter reduces nutrient runoff.
- BMP effectiveness varies by land use. Tools like CAST help tailor strategies to specific land types and conditions.
- Progress is being made, but challenges remain in reducing nitrogen and phosphorus in agricultural systems.
- CAST supports informed decisions by modeling reductions, estimating costs, and guiding BMP implementation.

To learn more, visit the CAST Website at cast.chesapeakebay.net

THIS NEWSLETTER WAS DEVELOPED BY:

The Center for Watershed Protection
under the direction of the
CWIP Steering Committee co-chairs:
Jill Whitcomb, PA DEP
and Matt Rowe, MDE

PA DEP, MDE, and NY DEC contribute staff support to advance the goals of CWIP.
CWIP Steering Committee Webpage:
https://www.chesapeakebay.net/who/group/conowingo-watershed-implementation-plan-steering-committee