

EPA EVALUATION OF PENNSYLVANIA'S 2024-2025 and 2026-2027 MILESTONES

Executive Summary

The Chesapeake Bay Program (CBP) partnership established the goal to implement and maintain practices and controls to reduce nitrogen, phosphorus, and sediment in order to achieve applicable water quality standards as described in the [Chesapeake Bay Total Maximum Daily Load](#) (Bay TMDL). The CBP partnership, including the seven jurisdictions (Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia) and the U.S. Environmental Protection Agency (EPA), agreed to develop and implement a framework for holding each partner accountable for reducing nitrogen, phosphorus, and sediment loads to meet the [CBP partnership interim water quality targets](#).

In that role, EPA evaluated Pennsylvania's progress toward attaining nitrogen, phosphorus, and sediment goals at the state and state-basin level and progress toward meeting sector-specific programmatic commitments for the 2024-2025 milestone period. This evaluation also provides an assessment of the final 2026-2027 commitments to maintain and accelerate progress over the next two years.

In reviewing Pennsylvania's final programmatic progress for the 2024-2025 milestones, the 2025 numeric progress, and the final 2026-2027 milestone commitments, EPA identified sector-by-sector strengths as well as areas for improvement. According to the data provided by Pennsylvania for the 2025 progress run, Pennsylvania did not achieve its [statewide interim targets](#) for nitrogen, phosphorus, or sediment. EPA stands ready to assist Pennsylvania with implementing its 2026-2027 two-year milestone commitments.

Some notable strengths identified in this evaluation of Pennsylvania's 2024-2025 milestone progress and the final 2026-2027 milestone commitments include:

- Pennsylvania expanded its network of partners through extensive outreach and coordination with a focus on the agricultural sector and community.
- Pennsylvania built staff capacity and increased funding for state and conservation district programs that were established to address Watershed Implementation Plan (WIP) commitments.
- Pennsylvania made strategic commitments in funding mechanisms, staff, and partnership-building to target priority best management practices (BMPs) through innovative approaches such as block grants to support countywide action plans (CAPs) and incentives to promote installation and maintenance of forested buffers, a priority BMP for Pennsylvania.

Some key areas that EPA expects Pennsylvania to address in the 2026-2027 milestone period and beyond include:

- Continue to accelerate BMP implementation in the agricultural sector, especially because the Phase III WIP is relying on this sector for the majority of the remaining reductions.
- EPA recommends Pennsylvania provide additional information when reporting on progress related to its strategy to increase opportunities to accelerate implementation of priority BMPs, including increased implementation of conservation tillage as a result of implementing the Conservation Tillage Dashboard, and milestones for critical regulatory efforts, like the reissuance of the statewide Municipal Separate Storm Sewer System (MS4) general permit.
- Continue to accelerate BMP implementation in the developed (urban/suburban stormwater) sector, especially because that sector continues to experience growth.

Background and Looking Forward for Future Reviews of Progress

Since 2009, the CBP partnership has used two-year milestones to identify shorter-term actions for implementing WIPs and to document progress toward the partnership's water quality targets. In January 2025, the Principals' Staff Committee¹ (PSC) approved an updated approach to the two-year milestones to streamline both the development of milestone commitments and the reporting of progress, starting with the 2026-2027 milestone cycle. Under this updated approach, jurisdictions, the Conowingo WIP Steering Committee, and Federal Agencies--collectively referred to as Milestone Partners--are [expected to identify](#) high-level programmatic actions they plan to implement during the 2026-2027 milestone period to maintain or accelerate implementation toward meeting interim water quality targets.

At the September [2024 Management Board² meeting](#) the CBP partners agreed to define the "water quality targets" as the Interim Targets and Conowingo Targets.³ The Interim Targets are the Phase III Planning Targets factoring in 2025 changing environmental conditions and Unaccounted Additional Loads (UALs)⁴. In the most recent [Chesapeake Bay Watershed Agreement](#), the CBP partnership agreed that, through 2030, the signatories will continue to accelerate completion of all water quality targets through implementation of Chesapeake Bay Watershed Implementation Plans, two-year milestone commitments and other innovative strategies to achieve and maintain reduced levels of nitrogen, phosphorus and sediment. This evaluation and future evaluations through 2030 progress will measure progress toward the water quality targets using Chesapeake Assessment Scenario Tool (CAST 2023), unless amended by a future CBP partnership decision.

¹ As of July 2026, the PSC name changed to the Policy Steering Committee.

² As of July 2026, the Management Board was dissolved as part of the revised Governance and Management Framework.

³ The PSC approved a phased approach for what can be achieved at Conowingo by 2025. Conowingo has a separate WIP and milestones to meet those targets.

⁴ The UALs are equal to the increased load from cumulative Phase 6 CAST updates to model inputs that occurred after the Phase 3 Planning Targets were set in 2018. Accounting for the UALs balances the load increases from the model changes. Additional reductions necessary to account for Conowingo infill are not included.

Concurrently, the CBP partnership is updating to the Phase 7.0 suite of modeling tools, which are expected to be completed and approved by the partnership in 2028. By December 31, 2030, the CBP partnership committed to revise the planning targets approved by the PSC for nitrogen, phosphorus, and sediment, incorporating the latest watershed modeling, monitoring data and research findings. The CBP partnership also committed to develop new or amended WIPs to meet those updated targets by 2040.

In addition to updating tools, targets, and WIPs, the CBP partnership is exploring ways to better explain progress and the changing environmental conditions of the Chesapeake Bay, using a combination of modeling results and monitoring data. EPA encourages each of the Milestone Partners to review and assess both the available real-world monitoring data and the most recent modeling results (Progress Year 2025) to inform the priority strategies.

Detailed Evaluation of Overall Load Reductions and Source Sectors

Load Reduction Review – Statewide and by Major River-Basin⁵

Each year, jurisdictions in the CBP partnership report the BMPs they have installed, tracked and verified, along with the pollutant load reductions from wastewater treatment plants. When evaluating Pennsylvania's 2024-2025 milestone implementation, EPA simulated nutrient and sediment loads using CAST-23⁶ and wastewater discharge data reported by Pennsylvania and compared those loads to Pennsylvania's water quality targets.

According to the data provided by Pennsylvania for the 2025 progress run, Pennsylvania did not achieve its statewide or state-basin (Eastern Shore, Potomac, and Susquehanna, and Western Shore) targets for nitrogen, phosphorus, or sediment. EPA expects Pennsylvania to accelerate and maintain BMP implementation levels to ensure progress toward meeting its nitrogen, phosphorus, and sediment targets.

⁵ Major river-basin refers to the eight major river basins draining to the Chesapeake Bay, some of which are shared by more than one Bay jurisdiction. For example, the Susquehanna River is shared by New York, Pennsylvania, and Maryland; Pennsylvania-Susquehanna refers to the Pennsylvania portion of the river. The phrase "major river-basin" is interchangeable with "state-basin" in this document.

⁶ CAST-23 is part of the Phase 6.0 suite of modeling tools for the Chesapeake Bay.

Table 1. Loads and Targets for Pennsylvania based on CAST-23 and reported wastewater data.

Pollutant	2009 Progress Loads (M lbs/year)	2025 Progress Loads (M lbs/year)	Water Quality Target Loads (M lbs/year)	Percent of Target Achieved
Nitrogen	112.44	107.28	77.08	15%
Phosphorus	4.47	3.73	2.84	47%
Sediment	3,270	2,733	2,161	48%

The summary progress from the CBP partnership's modeling tools for 2009 and 2025 incorporate BMP credit duration. The CBP partnership decided to remove reported BMPs from the model simulation at the end of their established credit durations unless verified by the state as inspected and continuing to function as designed. Verification is labor intensive but critical for ensuring practices are implemented and reductions are credited. The CBP partnership is exploring opportunities for new technologies and systems to streamline verification. Pennsylvania is expected to provide detailed programmatic milestones to support these BMP implementation targets. In the sector-specific sections below, EPA provides its evaluation of these programmatic milestones and the connection to increased implementation.

Monitoring

EPA encourages each of the Milestone Partners to review and assess both the available real-world monitoring data and the most recent modeling results (Progress Year 2025) to support meeting the priority strategies and actions identified in the final 2026-2027 milestones. Milestone Partners can use the [Chesapeake Assessment Scenario Tool \(CAST\)](#) to access the latest modeled progress results and build scenarios estimating future nitrogen, phosphorus, and sediment loads. The CBP partnership's Chesapeake Bay Nontidal Water Quality Monitoring Network, [supported by twenty-five groups](#) representing local, State, and Federal agencies, including the EPA, the U.S. Geological Survey (USGS), the Susquehanna River Basin Commission (SRBC), and the Bay jurisdictions, generates water quality monitoring data in freshwater rivers and streams throughout the watershed that is analyzed by USGS to provide monitoring-based information about the amount of nitrogen, phosphorus, and sediment entering the Chesapeake Bay through its nontidal rivers. These data inform watershed management by providing information on which to base restoration and conservation actions. The most recent results (www.usgs.gov/CB-wq-loads-trends) for the full 123-station network over the long-term 1985-2023 and short term 2014-2023 were published in March 2025.

Additionally, the [Monitored and Expected Total Reduction Indicator for the Chesapeake \(METRIC\) tool](#) can be used to compare observed water-quality trends with expected outcomes based on management actions, helping to clarify progress and guide priorities.

Future EPA evaluations will continue to stress the importance of using both modeling and monitoring information to target water quality actions such as milestone commitments to maintain and accelerate meeting the partnership's water quality targets. This integrated approach supports more accurate assessments and reduces misinterpretation, ultimately aiding partnership efforts to maintain and accelerate restoration and conservation efforts to achieve the water quality targets.

Source Sector Review

Pennsylvania's 2026-2027 programmatic milestones are not grouped by sector. Grouping 2026-2027 milestones by sector is an option, but not a requirement in the latest milestone expectations. EPA's comments about 2026-2027 milestones, however, are organized by sector to be consistent with the evaluation template for the 2024-2025 period.

Agriculture

Pennsylvania is predominantly relying on agriculture BMP implementation to meet its interim water quality targets. Pennsylvania continues to make incremental progress toward its goals, but the current pace of implementation is not on track to meet its statewide nitrogen, phosphorus, and sediment targets by 2030. EPA expects Pennsylvania to accelerate BMP implementation in the agricultural sector.

2024-2025 Milestone Achievements

- Continued outreach, communication, and stewardship programs to increase use of several high priority BMPs including conservation tillage, cover crops, and pasture management.
- Hired two conservation district field representatives in Southcentral Regional Office to provide operational and liaison assistance to conservation districts.
- Implemented recommendations provided by the Agricultural Permitting Roundtable and Food Processing Residual Waste workgroup in 2024 (both workgroups sunset in 2025).
- Nutrient management technicians conducted outreach to agricultural community regarding Manure Management Manuals and Agricultural Erosion and Sediment (E&S), holding over 300 outreach events that include approximately 20,000 farmers, and 130 consultants annually.

2024-2025 Milestones Not Achieved

- Pennsylvania's 2024 progress report included several updates that lacked quantitative outcomes and outputs for milestones that have defined numeric targets or endpoints. EPA recommended incorporating quantitative outcomes for the 2025 reporting cycle. Pennsylvania did not provide this information for the following milestones flagged in 2024:
 - 2.1.3A - The milestone is to continue communication and outreach to increase implementation of pasture management to a numeric target of 108,000 acres. The 2025 update cites progress on implementation of the system rather than associated BMP implementation.
 - 2.3.3A - Appreciate Agricultural Conservation Assistance Program. (ACAP) investment in animal agriculture with heavy use area protections and manure management structures

but progress report doesn't mention associated implementation or progress toward the stated goals of adequate manure storage at 90% of poultry and swine operations and 75% at all other operations.

2026-2027 Milestone Strengths

- Continues to invest in building staff capacity to support state programs and expand its network of partners, including public-private partnerships, with an emphasis in the agricultural sector and across Pennsylvania's nonpoint source program. Continued investment is critical to building on the momentum established in Pennsylvania in the last several years.
- Commits to reduce administrative barriers to implementation and to achieve outcomes tied to local water quality goals.
- EPA commends Pennsylvania for the development of the Nonpoint Source Management Plan referenced in the Milestones. This is a comprehensive action plan intended to maintain or increase implementation levels as partners work to achieve the Phase III WIP targets by 2030.

Key Areas to Address in the 2026-2027 Milestone Period and beyond

- Report progress on efforts to accelerate BMP implementation in the agricultural sector and identify what programs were leveraged to achieve the implementation targets, especially since some BMP targets were not met in the 2024-2025 milestone period.
- EPA anticipates implementation levels to be maintained or increased as partners work to achieve the interim targets by 2030.
- EPA recommends Pennsylvania provide additional information when reporting on progress related to its strategy to increase opportunities to accelerate implementation of priority agriculture BMPs to target nonpoint sources of nitrogen, phosphorus, and sediment.

Urban/Suburban Stormwater

2024-2025 Milestone Achievements

- The draft MS4 general permit (PAG-13) was published for public notice in January 2025.
- Adams County continues to work with the National Park Service (NPS) to develop an urban nutrient management plan for Gettysburg National Park.
- Five counties have begun updating their Pennsylvania Act 167 Plans. Six additional counties applied for Act 167 funding for 2026.
- Utilized the newly created eReporting application to submit MS4 annual reports by 200 permittees.
- Approved the Pollutant Reduction Plans (PRPs) for Pennsylvania Department of Transportation (PennDOT) and Pennsylvania Turnpike MS4 permits in 2025.

2024-2025 Milestones Not Achieved

- The PAG-13 general permit for small MS4s has yet to be issued. This permit provides for the flexibility necessary for small MS4s to achieve milestones as well as the opportunity to utilize a collaborative approach to implement BMPs that will assist with achieving pollutant

reductions. Pennsylvania is in the process of responding to public comments, finalizing the permit, and preparing training materials in advance of reissuance.

- The BMP Manual was not finalized and published.
- PRP and TMDL Plan reviews were not completed in conjunction with the 2018 PAG-13 for all MS4s in the Chesapeake Bay watershed. Pennsylvania anticipates them to be completed before the end of 2026.

2026-2027 Milestone Strengths

- Tracking increased Post Construction Stormwater Management (PCSM) and Stormwater Control Measures (SCM) reporting through Accelerator Pilot Program mapping portal.
- As part of the “Streamlining Permitting and Grant Requirements” milestone, they are monitoring the effectiveness of a new tool that will help permit applicants identify the most efficient stormwater control measures for proposed projects.

Key Areas to Address in the 2026-2027 Milestone Period and beyond

- Continue to accelerate BMP implementation in the developed (urban/suburban stormwater) sector, especially since that sector continues to experience growth and Pennsylvania is expecting additional nutrient reductions from the developed sector according to its Phase III WIP.

Wastewater Treatment Plants and Onsite Systems

2024-2025 Milestone Achievements

- Met or surpassed its goals for several activities that support reduced nutrient loadings from the wastewater sector, including enhanced technical assistance to wastewater treatment facilities; provision, servicing and calibration of equipment; and training.
- Nearing finalization of a new manual for land treatment of treated wastewater.

2024-2025 Milestones Not Achieved

- Pennsylvania met the goal to develop a request for proposals (RFP) for technical assistance and outreach for small and disadvantaged wastewater and water systems; however, EPA recommends that Pennsylvania provides additional details on achievements such as number of systems and examples of the type(s) of projects implemented would help explain the completed work.

2026-2027 Milestone Strengths

- Pennsylvania does not have specific programmatic milestones for the wastewater sector for 2026-2027. As part of the “Developing Environmental Workforce and Building Capacity for Clean Water Projects” milestone, they are convening a group of industry experts to identify opportunities to recruit and retain wastewater operators statewide.

Growth, Offsets, and Trading

Key Areas to Address in the 2026-2027 Milestone Period and beyond

- Continue to work with EPA in offsetting any new or increased nutrient and sediment loads identified in the Pennsylvania portion of the Chesapeake Bay watershed.

Other

2026-2027 Milestone Strengths

- Identifying the Pennsylvania Department of Environmental Protection (PADEP's) strategic priorities and reflecting those priorities in the narrative summary and the final milestones for 2026-2027.
- Clarifying baselines for the final 2026-2027 milestone in response to EPA's evaluation in March 2026.
- Commits to develop two interactive Dashboard applications to make Pennsylvania water quality monitoring data and best management practice (BMP) reporting data more accessible for watershed restoration planning across sectors and to help identify opportunities across sectors for targeted restoration.
- Commits to use implementation-scale watershed monitoring with Pennsylvania's [water quality assessment data](#) and [water quality trends](#) data to evaluate BMP efficacy, which is an ongoing commitment in Pennsylvania's nonpoint source program.

Key Areas to Address in the 2026-2027 Milestone Period and beyond

- EPA recommends that Pennsylvania include progress updates for the bulleted lists of activities below the milestone commitments when reporting progress.

Potential Federal Actions and Assistance

EPA remains prepared to assist each of the seven watershed jurisdictions in implementing the 2026-2027 milestones. EPA will work with each jurisdiction to develop specific oversight and assistance activities to provide prioritized support for implementation efforts, including funding, technical assistance and analysis, training, and regulatory reviews.

EPA plans to continue to commit staff, contractual and funding resources to support the seven watershed jurisdictions in implementing the 2026-2027 milestones and future two-year milestones. This support includes evaluation of the most-effective practices and locations; annual funding assistance to address priority implementation needs; evaluation of Bay jurisdictions' implementation capacity under various staffing, funding, regulatory and programmatic scenarios; local planning outreach; legislative and regulatory gap analysis; and monitoring trend analyses.

In addition, EPA will continue to work with federal partners to provide leadership and coordinate with Bay jurisdictions on WIP and two-year milestone implementation to reduce pollutants from federal lands. EPA will continue its commitment to track annual progress of the Bay jurisdictions and make those results available to the partnership and the public. [See:

<https://www.epa.gov/chesapeake-bay-tmdl/epa-oversight-watershed-implementation-plans-wips-and-milestones-chesapeake-bay> and
<https://www.chesapeakebay.net/news/pressrelease/chesapeake-bay-watershed-jurisdictions-continue-working-toward-nitrogen-and-phosphorus-goals-with-sediment-goal-already-achieved>]