

EPA EVALUATION OF PENNSYLVANIA'S 2016-2017 and 2018-2019 MILESTONES

In its role in the accountability framework described in the Chesapeake Bay Total Maximum Daily Load (Bay TMDL) document, EPA is evaluating each Bay jurisdiction's progress toward attaining the goal of having practices in place by 2017 that would achieve 60 percent of the nitrogen, phosphorus, and sediment reductions necessary to achieve applicable water quality standards compared to 2009. In addition to including an assessment of this 60 percent goal at the state and state-basin level, this evaluation includes assessments of progress toward meeting sector-specific programmatic commitments, water quality monitoring trends, and the sector-specific commitments for the 2018-2019 milestone period.

The Chesapeake Bay Program (CBP) partnership agreed to use its 5.3.2 suite of modeling tools through 2017 to measure progress towards attaining the 60 percent goal. When the Bay TMDL was established in 2010, the CBP partnership anticipated that the science, data and understanding of the watershed would continue to improve and evolve as the restoration work proceeded and that adjustments to the implementation efforts could be necessary. Therefore, the CBP partnership committed to update the modeling tools to allow the Bay Program partners to better predict areas and degrees of water quality non-attainment and provide better estimates of progress toward attaining the 2025 goal. These updated tools (6.0 suite of models) will be used to develop new numeric planning targets (i.e., the "Phase III Watershed Implementation Plan or WIP Planning Targets"), to be approved by the CBP partnership, to meet the 2025 goal and will be used measure pollutant reduction progress from 2018 through 2025.

The upgraded 6.0 suite of tools predict a different level of pollutant reduction effort than the 5.3.2 suite of models to meet the 2025 goal.

Load Reduction Review

When evaluating 2016-2017 milestone implementation, EPA compared nutrient and sediment loads simulated using the 5.3.2 suite of the CBP partnership's modeling tools and wastewater discharge data reported by Pennsylvania to the statewide and state-basin goal of 60 percent of the necessary reductions compared to 2009.

According to the data provided by Pennsylvania for the 2017 progress run, Pennsylvania did not achieve its statewide 2017 targets for nitrogen, phosphorus, and sediment. Pennsylvania achieved its 2017 targets for nitrogen and phosphorus in the Western Shore major river basin and for phosphorus in the Eastern Shore and the Potomac major river basin. Pennsylvania did not achieve its 2017 targets for nitrogen in the Susquehanna, Eastern Shore and Potomac. Pennsylvania did not achieve its 2017 targets for phosphorus in Susquehanna. Pennsylvania did not achieve its 2017 targets for sediment in any of the major river basins.

As noted above, progress measured using the 6.0 suite of tools is different than progress using the 5.3.2 suite of tools. These numeric differences were provided to the jurisdictions in May 2018. Pennsylvania will have the opportunity to optimize its strategies to attain the 2025 goals with the development of a Phase III Watershed Implementation Plan (WIP). This Phase III WIP will be finalized in 2019.

Through the CBP partnership's Chesapeake Bay Watershed Water Quality Monitoring Network, supported by U.S. Geological Survey (USGS), the Susquehanna River Basin Commission (SRBC), and the Bay jurisdictions, the monitoring trends indicate that nutrient and sediment loads in the Susquehanna watershed are slightly improving (decreasing), with a 5 percent decrease in nitrogen loads since 2007 at the Marietta monitoring station above the Conowingo Dam. However, currently the reductions are not at a pace that will achieve the 2025 Bay TMDL targets. The Susquehanna River loads to the Chesapeake Bay estuary at Conowingo are degrading (increasing) for both nitrogen and phosphorus. Additional work funded and supported by the CBP partnership will continue by USGS, EPA, SRBC, numerous academic partners, and others to better understand, and, ultimately, explain the causes behind the short-term and long-term monitoring trends observed at all of the CBP partnership's tidal and watershed networks' monitoring stations. The continued investment in monitoring allows the CBP partnership to demonstrate observed improvements to local water quality, make linkages to pollutant load reduction actions being taken by farmers, municipalities, homeowners, federal facilities and many others, and to assist in identifying where additional implementation is necessary to restore local streams and rivers and achieve jurisdictions' water quality standards in the Chesapeake Bay.

Agriculture – Maintain Backstop Actions Level

2016-2017 Milestone Achievements

- Pennsylvania continues to improve its tracking and reporting of best management practices (BMPs) through the development and utilization of the PracticeKeeper software which enables Conservation District and Pennsylvania Department of Environmental Protection (PADEP) staff to enter non-cost share practice implementation information directly into a database. This work builds on the 2016 accomplishments by Pennsylvania State University to develop a voluntary self-reporting conservation practice inventory and by Pennsylvania to conduct a transect survey for conservation tillage and traditional cover crops.
- Pennsylvania Department of Conservation and Natural Resources (DCNR) announced a separate statewide buffer initiative of \$2.5 million over the next three years beyond the 2016 commitment from the Pennsylvania Infrastructure Investment Authority (PennVEST) to provide \$3 million over the next three years for riparian forest buffers. In addition, \$13.7 million dollars of Growing Greener projects, focused on agriculture, stream restoration and stormwater runoff, were announced and \$1.5 million was invested in the Agricultural Plan Reimbursement Program, aimed to reimburse farmers for the cost of development of manure management, nutrient management, and erosion and sediment control plans.
- PADEP has been proactive in enlisting Conservation District staff to assist with outreach to farmers and with administrative reviews to determine whether farms have the required manure management and agricultural erosion and sediment control plans.
- Pennsylvania is continuing its work in developing updates to its Phosphorus Index.

2016-2017 Milestones Missed

- Pennsylvania missed the 2017 nitrogen target by over 17 million pounds statewide, with 16 million pounds expected to come from the Agriculture sector using the 5.3.2 suite of the CBP partnership modeling tools. Through the Restoration Strategy announced by Pennsylvania in January 2017, Pennsylvania was successful in redirecting and focusing existing resources. However, additional resources are needed to accelerate and fully implement this strategy.
- Progress related to achieving the increase to the PADEP Stream Bank fencing program was not reported. This work was carried forward into the 2018-2019 milestones to implement projects including streambank fencing.

2018-2019 Milestone Strengths

- Committed to advance riparian buffer implementation through grants, outreach, and the convening of a Riparian Forest Buffer Advisory Committee.
- Committed to initiate implementation of the Pennsylvania Agriculture Conservation Stewardship program.
- Committed to initiate a pilot to assess implementation of state-required plans as part of the Agricultural Compliance Inspection program.
- Met the commitment to reissue the Pennsylvania General Permit (PAG)-12 for Concentrated Animal Feeding Operations (CAFOs) by April 2018.

Key Areas to Address in the 2018-2019 Milestone Period and in the Phase III WIP

- EPA expects Pennsylvania, as part of its Phase III WIP, to identify a dedicated and targeted funding source (e.g., an annual state cost-share program) and the programs and policies to support increased BMP implementation levels needed to improve water quality. EPA recommends investigation of innovative financing mechanisms that can achieve the highest levels of pollutant load reduction at the least cost.

Urban/Suburban Stormwater – Maintain Backstop Actions Level

2016-2017 Milestone Achievements

- Reissued the Phase II Municipal Separate Storm Sewer System (MS4) General Permit (PAG-13) in June 2016 with a numeric reduction requirement for nitrogen, phosphorus, and sediment and the requirement to develop Pollution Reduction Plans (PRPs).
- Provided eight training sessions on the MS4 program development and support to over 1,000 municipal staff and consultants and provided training to PADEP regional staff on the review of PRPs.
- Awarded \$2.286 million in grants for 17 stormwater BMPs.
- Penn State is nearing completion of an MS4 annual reporting system to help permittees submit annual reports to PADEP with an expected completion date of fall 2018.

2016-2017 Milestones Missed

- Pennsylvania has neither developed technical guidance for Minimum Control Measure (MCM) 3 nor conducted the additional planned webinar trainings on the MCMs under the MS4 permit program, although a general MCM webinar and other information were posted to its website and presentations were made at technical conferences.
- Although an MS4 division was established in PADEP, progress has not been made to develop a financial assistance grant program to help communities assess feasibility of implementing a stormwater utility or to develop PRPs and TMDL plans.
- Revisions to the Stormwater BMP Manual are underway but significantly off schedule. Pennsylvania originally intended to release a final draft by December 2017, but now anticipates releasing a final draft by December 2019.

2018-2019 Milestone Strengths

- Final launch of MS4 electronic annual reporting system to capture BMP implementation and other MS4 activities electronically.
- Will begin planning for next round of MS4 general permits that start in 2023, to align with PADEP's Phase III WIP.
- Commitment to publish the draft Stormwater BMP Manual.
- Will complete reviews of Chesapeake Bay PRPs.
- Commitment to allow MS4s to collaborate and use flexible, cost-effective approaches to achieve pollutant reductions.
- Will revise and reissue the Construction Stormwater General Permit (PAG-02).

Key Areas to Address in the 2018-2019 Milestone Period and the Phase III WIP

- EPA expects Pennsylvania to address the gap in nutrient and sediment reductions in the Urban/Suburban Stormwater sector in its Phase III WIP.
- EPA encourages the use of regional approaches in Pennsylvania's Phase III WIP to engage both the regulated and non-regulated urban communities, given that over 70 percent of the urban land is not covered by MS4 permits. Pennsylvania should address this in the Phase III WIP, with strategies for non-regulated developed land. EPA suggests that Pennsylvania conduct outreach to small un-regulated communities to install, inspect, maintain, verify, and report urban BMPs installed in their jurisdictions, as a result of statewide stormwater management and erosion and sediment control statutes and regulations, such as Pennsylvania's Act 167. EPA encourages the use of watershed-wide permits in the MS4 communities.
- EPA recommends Pennsylvania include a milestone for improving documentation and reporting of fertilizer sales data to track future fertilizer application rates.
- EPA expects Pennsylvania to correct remaining program deficiencies identified in the findings from the Pennsylvania Stormwater Program Reassessment shared in Spring 2017.

Wastewater Treatment Plants and Onsite Systems – Maintain Ongoing Oversight

2016-2017 Milestone Achievements

- Issued all 189 significant sewage permits and 22 of the 23 significant industrial permits with annual net mass load limitations (“cap loads”).
- Pennsylvania’s Wastewater sector remains below the 2025 Bay TMDL goals for numeric loading results for each pollutant.
- Although not identified as a milestone, EPA recognizes the wastewater optimization work that Pennsylvania is performing to achieve nutrient reductions that will improve local water quality and ultimately the Chesapeake Bay.

2016-2017 Milestones Missed

- None.

2018-2019 Milestone Strengths

- Continues to reissue permits with annual net mass load limitations (“cap loads”) for significant and new dischargers.

Key Areas to Address in the 2018-2019 Milestone Period and in the Phase III WIP

- None.

Offsets and Trading – Maintain Enhanced Oversight

2016-2017 Milestone Achievements

- Continues to monitor the number of credits generated and purchased by compliance year and posts the information on the PADEP website.
- Pennsylvania expects its draft Phase III WIP to include an evaluation of EPA’s load growth by sector, address load growth in the sectors where it occurs, and develop methods to track and account for sector load growth.
- Pennsylvania chose to transition into using the United States Department of Agriculture (USDA) Nutrient Tracking Tool (NTT) trading credit calculation tool for calculating credits.

2016-2017 Milestones Missed

- None, noting that Nutrient Trading Program regulation revisions are on hold until after the Phase III WIP is completed.

2018-2019 Milestone Strengths

- Pennsylvania is working with USDA to develop a Pennsylvania-specific NTT tool with support from the Chesapeake Bay Program Office.

Key Areas to Address in the 2018-2019 Milestone Period and the Phase III WIP.

- The CBP partnership agreed to develop 2025 growth projections for jurisdictions to use in developing their Phase III WIPs. EPA will provide growth projections to Pennsylvania by sector and basin based on Pennsylvania’s data. EPA expects Pennsylvania to account

for and describe how it will offset any sector language to basin growth in its Phase III WIP (e.g., programs, regulations, etc.). Growth projections will be updated every two years and EPA expects Pennsylvania to address any projected growth in its 2-year milestones. In particular, EPA expects Pennsylvania to continue to monitor and quantify any increases in agricultural loads and to take appropriate steps to offset any increases in resulting pollutant loads, as necessary.

- EPA recommends that Pennsylvania consider including language in its MS4 permits that would factor the use of trading or offsets and enable progress to be made toward Bay TMDL targets in the next version of the PAG-13 permit.

Other

2016-2017 Milestone Achievements

- Pennsylvania is making significant progress in its Phase III WIP strategy development including the convening of sector workgroups with representatives from Federal, state and local governments, and non-governmental and quasi-governmental organizations, and a steering committee chaired by PADEP, DCNR, and Pennsylvania Department of Agriculture and committing to the development of county-level targets.

Key Areas to Address in the 2018-2019 Milestone Period and the Phase 3 WIPs

- In 2018, EPA expects that Pennsylvania's BMP Verification Program will be fully implemented for all BMPs except for Nutrient Management practices, which EPA expects will be fully implemented in 2019. The CBP partnership agreed that all reported practices and control technologies must be implemented, maintained and working so they effectively yield nutrient and sediment load reductions. EPA recognizes the 2018-2019 milestones reflect Pennsylvania's commitment to this implementation effort. The BMP verification process should be updated through Pennsylvania's BMP Verification Program Plan (Quality Assurance Project Plan) whenever changes are made after approval by relevant CBP partnership workgroups and Goal Implementation Teams.
- EPA expects that Pennsylvania will work with EPA and the appropriate federal agencies to establish 2025 federal facility targets that are coordinated with local area goals and also ensure that BMPs reported by specific federal agencies are included in jurisdiction progress submittal, to allow accurate assessment of federal progress in meeting the federal facility targets. Pennsylvania should collaborate with federal agencies to address any issues related to the progress data and reconcile federal agency records with jurisdiction databases or other jurisdiction BMP record systems.

Potential Federal Actions and Assistance

- EPA's Chesapeake Bay Program Office intends to commit staff, contractual, and funding resources to support the development and implementation of each of the seven watershed jurisdictions' Phase III WIPs. This support includes evaluation of the most-effective practices and locations, evaluation of a jurisdiction's implementation capacity under various staffing, funding, regulatory and programmatic scenarios, local planning outreach, legislative and regulatory gap analysis, and monitoring trend analysis.