EPA EVALUATION OF MARYLAND'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 Maryland to the statewide and state-basin goal of 60 percent of the necessary reductions compared to 2009. According to the data provided by Maryland for the 2017 progress run, Maryland achieved its statewide 2017 targets for phosphorus and sediment but did not achieve its statewide 2017 target for nitrogen[1]. Maryland achieved its 2017 targets for all pollutants in all major basins except for nitrogen in the Eastern Shore and the Western Shore and for phosphorus in the Western Shore.

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. Maryland will have the opportunity to optimize its strategies to attain the 2025 goals with the development of a Phase III 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

[1] Maryland's Back River Wastewater Treatment Plant began operating its Enhanced Nutrient Reduction treatment process in September 2017, but these reductions were not credited toward Maryland's 2017 progress due to the CBP partnership's data accounting and reporting procedures.

(SRBC), and the Bay jurisdictions, the short-term (10 year) monitoring trends indicate that nutrient loads in the Choptank River are generally degrading (increasing) and that nutrient loads in the Patuxent River are generally improving (decreasing) based on data collected at Maryland's key River Input Monitoring Sites. Monitoring conducted by Maryland Department of Natural Resources at 125 stations shows that since 1999, 31 percent of stations are showing improving nitrogen trends, 0 percent are showing degrading trends, and 69 percent are showing no consistent change in conditions. 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 monitoring stations throughout the CBP partnership's tidal and watershed networks. 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 the jurisdictions' water quality standards in the Chesapeake Bay.

Agriculture – Maintain Ongoing Oversight

2016-2017 Milestone Achievements

- Certified six verifiers in Maryland's Agricultural Certainty Program and continues to participate in agricultural forums to promote the program.
- Continues to implement the Phosphorus Management Tool regulation and place operations into tier groups (over 1,600 operations in 2017) as required by the regulation.
- Registered 483 farms under Maryland's Concentrated Animal Feeding Operation (CAFO) program by the end of the 2016-2017 milestone period.
- Achieved its 2025 Best Management Practice (BMP) implementation targets for cover crops, conservation high-residue tillage, and manure transport.

2016-2017 Milestones Missed

- Did not achieve its 2017 target for nitrogen, in part, because of missed milestones in the agricultural sector and unexpected changes in agricultural production as reflected in the 2012 Agricultural Census. For example, Maryland did not achieve its implementation targets for horse pasture management, alternative crops, and prescribed grazing, some of which Maryland is relying upon to meet its 2025 targets.

2018-2019 Milestone Strengths

- Committed to facilitate participation and provides continued financial incentives in Fiscal Year (FY) 2018 and 2019 for its Manure Transport Program in support of the Maryland Phosphorous Initiative.
- Committed to implement the Maryland Phosphorus Initiative.
- Committed to permit 100 percent of CAFOs under the CAFO general permit by December 1, 2019.
- Committed to renew the CAFO general permit by December 1, 2019.

- Committed to solicit proposals for funding that will support demonstrations for alternative technologies that use and manage waste, including manure-to-energy technologies.

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

- EPA expects Maryland to address the nitrogen gap in this sector through increased agricultural BMP implementation. Recommended BMPs include compliance with nutrient application management optimizing rates, timing and placement of nutrients, and forest and grass buffers.

Urban/Suburban Stormwater – Maintain Enhanced Oversight

2016-2017 Milestone Achievements

- Completed a successful conversion to the Geographic Information System (GIS) BMP database by the Phase I Municipal Separate Storm Sewer System (MS4) communities. A requirement to use this database will be included in all future Phase I MS4 permits.
- Submitted the draft Phase I MS4 template to EPA at the end of 2017.
- Conducted Phase II MS4 outreach and met with all eligible 29 municipalities and six counties, and most of the state and federal permittees, to communicate the details of the draft Phase II permit and to address and resolve concerns.

2016-2017 Milestones Missed

- Tentative determinations for Phase II general permits were not issued by September 30, 2016; both general permits went to tentative determination on December 22, 2016.
- Final determinations for Phase II general permits were not issued by March 31, 2017; both general permits went to final determination on April 27, 2018.
- While Maryland negotiated a Consent Decree with Montgomery County during the 2016-2017 milestone period, a final Consent Decree was not signed until April 13, 2018. The final consent agreement includes complete restoration requirements by the end of 2020 and a supplemental environmental project (SEP) stipulation in the amount of $300,000 or, as a penalty if the SEP is not completed by the end of 2020.
- Did not formally approve the Phase I MS4 Restoration Plans (see Phase I MS4 permit Part IV. Section E.2.b.) submitted during or prior to the 2016-2017 milestone period. In the absence of approving these plans, it is unclear what enforcement actions or other appropriate actions Maryland took for these plans to become enforceable. Maryland has approved the surface area assessments (see Phase I MS4 permit Part IV. Section E.2.a.).
- Has not updated its 2014 Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated guidance document since its initial release to account for new CBP partnership-approved BMP efficiencies and tracking and reporting requirements.

2018-2019 Milestone Strengths

- Committed to provide a final Phase I MS4 permit template to EPA by the end of 2018 and final determinations for each individual MS4 permit within 6 months following each permit's expiration.

- Committed to develop an annual checklist and will perform reviews of Montgomery County's consent agreement compliance, take appropriate enforcement actions as necessary, and submit these reviews to EPA.
- Committed to annually updating MS4 permittees on all new CBP partnership-approved BMPs and will finalize its updated 2014 Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated guidance document by June 30, 2019.
- Committed to report Phase I MS4 BMP implementation for progress through Maryland's newly developed GIS BMP database.
- Committed to issue tentative determinations for both the Industrial General Permit and Construction General Permit by December 2019.

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

- Based on existing WIP commitments, Maryland plans to achieve 23 percent of the necessary nitrogen reductions from the Urban/Suburban Stormwater sector between 2009 and 2025, but nitrogen loads in this sector have continued to increase since 2009. Based on the progress made through 2017, EPA anticipates that Maryland will need to increase BMP implementation rates and build programmatic capacity in the Urban/Suburban Stormwater sector to meet its WIP and Bay TMDL targets by 2025.

- Now that Maryland approved the surface area assessments (see Phase I MS4 permit Part IV Section E.2.a.), EPA expects Maryland to approve the Phase I MS4 Restoration Plans for each Stormwater Wasteload Allocation (see Phase I MS4 permit Part IV. Section E.2.b.) submitted during or prior to the 2018-2019 milestone period for these plans to become enforceable. If a plan cannot be approved according to Maryland's MS4 Restoration Plan and TMDL Standard Operating Procedures, EPA expects Maryland to take enforcement actions or other appropriate actions as deemed acceptable by EPA. EPA recommends using the Montgomery County Consent Decree as an example for all other Phase I MS4 permittees.
- Maryland committed to review the Phase I MS4 Financial Assurance Plans according to the specific criteria in Maryland law, and provide these evaluations to EPA. EPA expects Maryland to address EPA's concerns with Maryland's 2017 assessment of these plans (a letter outlining these concerns was sent on April 24, 2017), beginning with the 2018 review process.
- Based on the progress made through 2017, EPA anticipates that Maryland will need to increase BMP implementation rates and build programmatic capacity in the Urban/Suburban Stormwater sector to meet its WIP and Bay TMDL targets by 2025.

Wastewater Treatment Plants and Onsite Systems – Maintain Ongoing Oversight

2016-2017 Milestone Achievements

- Upgraded 54 of the 67 major wastewater treatment plants as of December 2017.
- Upgraded six minor wastewater treatment plants as of December 2017.
- Completed 2,067 Best Available Technology (BAT) installations for septic systems within this milestone period.
- Developed criteria for the evaluation and selection of new BAT systems utilizing national peer-reviewed BMPs.

2016-2017 Milestones Missed

- None.

2018-2019 Milestone Strengths

- Committed to continue to work with the remaining wastewater treatment plant facilities with National Pollutant Discharge Elimination System permits that are required to adopt the Network Discharge Monitoring Report (NetDMR) system to complete their registration.
- Committed to complete upgrades for remaining major and minor wastewater treatment plant facilities to Enhanced Nutrient Removal (ENR) within this milestone period.
- Committed to continue to facilitate implementation of septic connections to ENR facilities in the Critical Area and other areas of Maryland.

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

- EPA expects a status update on completing the septic implementation strategy for those septic systems in the Critical Area, as well as conducting an analysis to determine a loss of pollutant reductions due to the change in regulations.

Offsets and Trading – Maintain Ongoing Oversight

2016-2017 Milestone Achievements

- Finalized its draft Trading and Offset Guidance Manual in April 2017 after addressing Water Quality Trading Advisory Committee (WQTAC) comments.
- Revisions to agriculture regulations that established requirements and standards for the generation and certification of nutrient and sediment credits on agricultural land were adopted on August 29, 2016.
- Continues to document current and future growth in the poultry industry and calculate estimates of nutrients associated with manure that must be offset.

2016-2017 Milestones Missed

- No progress has been made in developing a policy on accounting for growth although various formulations of an accounting for growth policy and regulations continue at the staff level.

2018-2019 Milestone Strengths

- Included language in its draft Phase II MS4 permits that would include the use of trading and enable progress to be made toward Bay TMDL targets.
- Prequalifies producers for participation in Maryland's trading program through its Agricultural Certainty Program.
- Continues to work with EPA to understand where growth is occurring and, where loads need to be offset, to offset these new loads within the appropriate timeframe, and to continue to track and account for new or increased loads (e.g., growth in the agriculture and septic sectors and increases in nitrogen in the Urban/Suburban Stormwater sector).

Key Areas to Address in the 2018-2019 Milestone Period and in 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 Maryland by sector and basin based on Maryland's data. EPA expects Maryland to account for and describe how it will offset any sector or basin growth in its Phase III WIPs (e.g., programs, regulations, etc.). Growth projections will be updated every two years and EPA expects Maryland to address any projected growth in its two-year milestones. EPA has observed data showing increases in loads (e.g., growth in the agriculture and septic sectors and increases in nitrogen in the urban/suburban stormwater sector).

Other

- In 2018, EPA expects that Maryland's BMP Verification Program will be fully implemented for all BMPs. 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 Maryland's commitment to this implementation effort. The BMP verification process should be updated through Maryland'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 Maryland will work with EPA and the appropriate federal agencies to establish 2025 federal facility targets that are coordinated with local planning goals and ensure that BMPs reported by specific federal agencies are included in Maryland's progress submittal, to allow accurate assessment of federal progress in meeting the federal facility targets. Maryland should continue to collaborate with federal agencies to address any issues related to the progress data and reconcile federal agency records with Maryland's databases or other 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 Bay 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 analyses.