EPA EVALUATION OF NEW YORK's 2018-2019 and 2020-2021 MILESTONES

Executive Summary

The seven jurisdictions (Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia) in the Chesapeake Bay Program (CBP) partnership agreed to develop and implement a framework for holding each partner accountable for reducing nitrogen, phosphorus, and sediment loads to meet water quality standards in the Chesapeake Bay and its tidal tributaries. The CBP partnership established the goal to have all programs and practices in place by 2025 that were necessary to achieve applicable water quality standards in the tidal Bay. Part of the U.S. Environmental Protection Agency's (EPA's) role in the partnership's accountability framework is to evaluate and report each jurisdiction's progress toward meeting this goal every two years.

In that role, EPA has evaluated New York's progress toward attaining the goal of having programs and practices in place by 2025. This evaluation includes an assessment of progress toward attaining this goal at the state and state-basin level and progress toward meeting sector-specific programmatic commitments for the 2018-2019 milestone period. This evaluation also provides an assessment of other sector-specific programmatic and numeric commitments (e.g., Best Management Practices or BMP implementation targets) for the 2020-2021 milestone period and the status of the relevant water quality monitoring trends.

In reviewing New York's final progress for the 2018-2019 milestones, the 2019 numeric progress, and the final 2020-2021 milestones, EPA found areas in which the state achieved goals it had set. EPA also identified key areas to address during the 2020-2021 milestone period and beyond. According to the data provided by New York for the 2019 progress run,[1] New York did not achieve its statewide and state-basin 2019 targets for nitrogen and sediment. New York achieved its statewide 2019 targets for phosphorus.

Some notable strengths identified in this evaluation of the 2018-2019 milestones and the final 2020-2021 milestones include:

- Achieving its statewide 2019 targets for phosphorus.
- Developing specific BMP implementation targets for the 2020-2021 milestone period for some of the BMPs that account for 80% of the nitrogen load reduction in New York's Phase III WIP, as recommended in EPA's evaluation of New York's Phase III WIP.
- Delivering Agricultural Environmental Management (AEM) Outreach and Education programs for farmers and agricultural professionals in the watershed about agricultural environmental management.
- Implementing National Fish and Wildlife Foundation (NFWF) Chesapeake Bay Stewardship Fund Grant program to address nutrient and sediment loading from stream corridor and riparian areas in the Upper Susquehanna River Basin in New York State.

[1] Each year, jurisdictions in the CBP partnership report on the BMPs installed, tracked and verified and the pollutant load reductions from wastewater treatment plants. Using the Chesapeake Assessment Scenario Tool, this information (or "annual progress runs") provides an estimate of how much nitrogen, phosphorus and sediment has been be reduced.

- Providing additional information on strategies and funding mechanisms for achieving implementation levels for each BMP or group of BMPs listed in Table 20 of New York's Phase III WIP for MS4 and non-MS4 areas.

Some key areas that EPA recommends addressing during the final 2020-2021 milestone period and beyond include:

- Considering reducing its average nitrogen treatment level (8.0 milligrams per liter) for those plants receiving upgrades to compensate for smaller reductions in the agriculture and stormwater sectors.
- Improving BMP reporting as nutrient and sediment loads in the agricultural and stormwater sectors are projected to change over time.
- Report on progress to finalize the municipal separate storm sewer systems (MS4) General Permits.
- Considering whether certain communities, facilities, or sources in the Chesapeake Bay watershed might qualify for designation as MS4s and, if such designations are made, consider including those sources under the New York State Department of Environmental Conservation (NYSDEC) MS4 General Permit.

Load Reduction Review

When evaluating 2018-2019 milestone implementation, EPA compared nutrient and sediment loads simulated using the Phase 6.0 suite of CBP partnership's modeling tools and wastewater discharge data reported by New York to the statewide and state-basin Phase III WIP planning targets. According to the data provided by New York for the 2019 progress run[2], New York did achieve its statewide 2019 targets for phosphorus. However, despite New York's extensive work in the agriculture communities of the Chemung and Susquehanna watersheds, New York did not achieve its statewide 2019 targets for nitrogen and sediment.

New York developed specific BMP implementation targets for the 2020-2021 milestone period for some of the BMPs recommended in EPA's evaluation of New York's Phase III WIP. New York provided programmatic milestones to support some of the BMP implementation targets and EPA, in the sector-specific sections below, provides its evaluation of these programmatic milestones. A summary of the 2019 progress, the 2020-21 commitments and the 2025 goals for the BMPs are listed below. The summary progress from the CBP partnership's modeling tools for 2009 and 2019 incorporate BMP credit duration. The CBP partnership decided to remove reported BMPs from the model simulation at the end of their established lifespans unless verified by the state as inspected and continuing to function as designed.

[2] Each year, jurisdictions in the CBP partnership report on the BMPs installed, tracked and verified and the pollutant load reductions from wastewater treatment plants. Using the Chesapeake Assessment Scenario Tool, this information (or "annual progress runs") provides an estimate of how much nitrogen, phosphorus and sediment has been be reduced.

BMP[3]	2009 Progress	2019 Progress	2020-2021 Milestone Target	2025 WIP Target
BioRetention (Acres Treated)	None provided. [4]	54	None provided.	53,133
Infiltration Practices (Acres Treated)	None provided.	73	None provided.	53,133
Forest Harvesting Practices (Acres)	None provided.	None provided.	None provided.	36,462
Livestock Waste Management Systems (Animal Units)	31,529	84,529	83,800	61,919
Soil Conservation and Water Quality Plans (Acres)	42,058	172,849	250,000	300,994
Reconstruction of Binghamton-Johnston City wastewater treatment plant (lbs/yr)	346,789	595,530	382,772 pounds reduced	429,266
Nutrient Management Core N & P (Acres)	16,435	68,974	96,000	151,245
Nutrient Management Rate, Timing, Placement N & P (Acres)	6,632 (N rate) 6,632 (N placement) 7,712 (N timing) 6,632 (P rate) 6,632 (P placement)	60,056 (N rate) 62,155 (N placement) 57,931 (N timing) 58,145 (P rate) 61,394 (P placement)	92,000	151,245

[3] BMP levels are units reported or planned by the jurisdiction. The levels are calculated using the Phase 6.0 suite of modeling tools and include everything established or installed, reported, and functioning through the particular year, e.g., through 2009, or through 2019, etc., not just new reported implementation unless otherwise noted.
[4] CBP partnership modeling tools evolve based on CBP partnership decisions. As a result, some BMPs have "none reported" listed since those particular BMP names were not available for reporting. These practices were often included in another BMP category before the refinement to be more specific in the naming convention.

BMP[3]	2009 Progress	2019 Progress	2020-2021 Milestone Target	2025 WIP Target
	7,712 (P timing)	57,113 (P timing)		
Cover Crops (Acres)	130	11,047	15,000	19,948
Forest Buffers on Fenced Pasture Corridor (Acres)	1,127	2,145	2,900	3,543
Grass Buffers on Fenced Pasture Corridor (Acres)	697	1,137	1,500	1,815
Forest Buffers (Acres)	348	1,098	1,650	2,124
Grass Buffers (Acres)	216	405	540	776
Dairy Precision Feeding (Animal Units)	730	11,848	13,000	9,914

New York did not provide specific implementation targets for the following under-reported or never reported BMPs that EPA recommended in its Phase III WIP evaluation: Manure incorporation/manure injection, Off-stream watering without fencing, Tree planting, Land retirement/alternative crops, Stream restoration, Urban forestry, Street sweeping, Catch basin cleaning and Retrofitting.[5]

Agriculture

2018-2019 Milestone Achievements

- Implemented two rounds (Rounds 24 and 25) of funding through the New York State (NYS) Agricultural Nonpoint Source Abatement and Control Program (AgNPS) for best management practice installation for a total of $6.3 million, 44 BMP systems and 179 BMPs.
- Provided two years of Agriculture Environmental Management (AEM) base program funding to Soil and Water Conservation Districts (Years 13 and 14) to support technical assistance to producers.
- Delivered AEM Outreach and Education programs for farmers and agricultural professionals in the watershed about agricultural environmental management, including Cornell Cooperative Extension, Soil & Water Conservation District, New York State Department of Agriculture & Markets (NYSDAM), and Natural Resources Conservation Service (NRCS) workshops. For 2018– 2019, NYSDAM developed and trained 26 District, NRCS, and private sector planners at a 4-Day Comprehensive Nutrient Management Plan (CNMP) training at the 2019 Water Quality

[5] New York did not provide specific implementation targets for these BMPs because they have a low nitrogen reduction efficiency or there is not a mechanism in place currently to report these BMPs. New York is currently developing a new database for tracking and reporting developed sector BMPs.

Symposium; this training is a prerequisite for AEM Planner Certification. NYSDAM presented on the AEM program to 75 municipal planners at the Southern Tier Central Regional Planning and Development Board Conference. NYSDAM provided webinars on AEM Base Year 14 program and Tier 3A Stream Corridor Planning Component training. The Upper Susquehanna Coalition (USC) Stream Team presented training on Stream Corridor assessment as part of the AEM 3A evaluation program.

- Implemented the United States Department of Agriculture- Farm Service Agency (USDA-FSA) Chesapeake Bay Riparian Forest Buffer Initiative and NYS Conservation Reserve Enhancement Program (CREP) (the State Enhancement Program is supported by Chesapeake Bay Implementation Grant funding). During 2018, the USC continued administration of the USC CREP contract. 62 new acres of riparian buffer were planted and the USC paid the state practice incentive payment.
- Implemented National Fish and Wildlife Foundation (NFWF) Chesapeake Bay Stewardship Fund Grant program to address nutrient and sediment loading from stream corridor and riparian areas in the Upper Susquehanna River Basin in New York State. Under Rounds 1 and 2 of the program in 2018-2019, 28 projects were funded with a contract total of $1,217,727. Project implementation metrics include: 344.2 acres of buffer; 868.5 acres of rotation grazing system; 15.14 acres of restored wetland area; and 8,318 feet of rehabilitated stream corridor.
- Implemented cover crop program resulting in a total of 5,049 acres of planted cover crops.

2018-2019 Milestones Missed

- Did not report on its progress toward implementing a coordinated, integrated, and comprehensive nutrient management planning process and updating its nutrient management plans acreage.
- Did not achieve its goal of completing 3 Emergency Stream Intervention trainings.
- Did not achieve its goal of establishing perpetual conservation easements on 28 acres of riparian buffers in Broome and Tioga counties.

2020-2021 Milestone Strengths

- Commitment to increase funding to implement 2,000 acres of cover crops annually.
- Commitment to increase its implementation of nutrient management plans from 10% (77,000 acres) to 19% (151,000 acres).
- Planned reductions have been a result of extensive coordination between farmers, the USC, NYSDEC, and the New York Department of Agriculture and Markets. This outreach included numerous meetings and open houses held across the watershed and several farmer surveys and follow-up analysis.
- The long-established partnership of the State of New York with the local county soil and water conservation districts through the USC provides a framework for and the ability to encourage communications and outreach between the partnership and local agricultural producers and service providers.
- Created the CAFO Waste Storage and Transfer Program to assist CAFO farms with meeting the minimum storage capacity required by the CAFO permit.
- Provided a detailed list of potential funding strategies and funding initiatives to fill the nitrogen gap in the agriculture sector, that remains after full implementation of the Phase III WIP. Potential strategies include increasing voluntary implementation, increasing local

partner capacity, expanding BMP reporting and verification, accounting for state-specific data in the Chesapeake Bay Watershed Model, supporting development of innovative tools and research, and exploring new funding strategies such as access to additional state funds.
- Commitment to adopting core nutrient management on 22% of available acres with a goal to increase this number to 50% of available acres. In addition, a goal was proposed to implement supplemental rate, placement and timing on 40% of available acres.
- Commitment to pursuing additional funding to increase staff in the USC and its member districts.
- Provided more strategies and opportunities to effectively use its existing resources and access additional state funding.

Key Areas to Address in the 2020-2021 Milestone Period
- EPA recommends reporting the level of priority BMP installation through the programs below. Installation levels will be reported for specific practices over the two-year milestone period for the following: two rounds of the NYS Agricultural Nonpoint Source Control and Abatement (AgNPS) Program, two rounds of the Dairy Acceleration Plan (DAP), $500,000 of CBIG funding for the Comprehensive Riparian Buffer Program (including the state Conservation Reserve Enhancement Program (CREP) incentive program), implementation of the Soil Health outreach program, and implementation of the Buffer outreach program.
- EPA recommends reporting any increases in Environmental Protection Funds to support agricultural goals and what those increases will mean in terms of increased implementation of agricultural BMPs.

Stormwater

2018-2019 Milestone Achievements
- Conducted 9 inspections at municipal separate storm sewer systems (MS4s) and 62 inspections at construction stormwater sites in the watershed over the 2018-2019 milestone period. DEC issued 9 notice of violations for construction stormwater sites in 2018-2019.
- Working with Southern Tier 8 Regional Planning Development Board and Southern Tier Central Regional Planning Development Board through the Clean Water Act 604(b) contracts to assist DEC with reporting and verifying BMPs outside of MS4 areas.

2018-2019 Milestones Missed

Did not issue its MS4 general permit.

2020-2021 Milestone Strengths
- This the first time that New York plans to achieve significant reductions in this sector.
- Proposed a detailed list of potential strategies to improve its stormwater sector program delivery. Funding sources have been identified for each strategy and lead partners have been identified. Additional information is available in section 7.10 of NYSDEC Final Phase III WIP.
- Provided additional information on strategies and funding mechanisms for achieving implementation levels for each BMP or group of BMPs listed in Table 20 of New York's Phase III WIP for MS4 and non-MS4 areas.

Key Areas to Address in the 2020-2021 Milestone Period

- Continue to track and report on the progress towards achieving stormwater BMP implementation levels listed in table 20 of New York's Phase III WIP and focus specifically on those BMPs which are the most cost effective.
- Consider whether certain communities, facilities, or sources in the Chesapeake Bay watershed might qualify for designation as MS4s and, if such designations are made, consider including those sources under the NYSDEC MS4 General Permit.

Wastewater

2018-2019 Milestone Achievements

- Nitrogen bubble permit requirements were met with no compliance issues.
- Five wastewater treatment plant upgrades proceeded on schedule.

2018-2019 Milestones Missed

Reconstruction of the Binghamton-Johnston City wastewater treatment plant had to be extended.

2020-2021 Milestone Strengths

Permit modifications will be initiated for 32 facilities to include 2025 wasteload allocations and concentration limits.

Key Areas to Address in the 2020-2021 Milestone Period

Consider reducing its average nitrogen treatment level (8.0 milligrams per liter) for those plants receiving upgrades to compensate for smaller reductions in the agriculture and stormwater sectors.

Growth, Offsets and Trading

2018-2019 Milestone Achievements

No exceedance of bubble permit limit in either 2018 or 2019. The bubble permit allows for nutrient trading between the wastewater treatment plants (WWTPs) covered under this permit.

2018-2019 Milestones Missed

None

2020-2021 Milestone Strengths

- There are no nitrogen or phosphorus reserve allocations for new or expanded dischargers from WWTPs of any size. All such discharges are expected to offset 100% of new loadings and SPDES permits are expected to include enforceable provisions to implement offsets. Facilities may secure offsets by assimilation of existing septic systems, consolidation with other WWTPs having wasteload allocations (WLAs), expanding facilities to improve treatment, and/or the use of future trading programs.
- Plans to consider individual trading among SPDES dischargers with a WLA as a means of providing flexibility for the implementation of the TMDL.
- Implementation scenarios were developed based on 2025 forecasted growth conditions; per the CBP partnership decision, these growth conditions will be updated every two years.

Key Areas to Address in the 2020-2021 Milestone Period

None

Potential Federal Actions and Assistance

As noted in its Phase III WIP evaluations, EPA remains prepared to assist each of the seven watershed jurisdictions in implementing the 2020-2021 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.

In particular, given the potential financial and technical challenges that wastewater treatment operators might face, EPA is interested in working closely with you to provide compliance assistance for these facilities. EPA will also continue to work with you to take further advantage of pollution reduction opportunities especially in the agricultural and forestry sectors. In this regard, EPA is keenly interested in exploring the effective transfer of successful pollution control experiences and practices from other watershed areas of the State that could benefit the agricultural/forest industries as well the environment such as the New York City Water Supply Watershed.

2009-2018 Monitoring Trends Summary

The CBP partnership's Chesapeake Bay Program Nontidal Water Quality Monitoring Network, supported by 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 for nutrient and sediment loads and trends. The most recent USGS results (https://cbrim.er.usgs.gov/summary.html) over the period of 2009-2018 were made available in March 2020. While identifying drivers behind individual trends is often complex, the monitoring results are worthy of New York's consideration as it develops the programs and BMPs planned for the next two years. EPA's initial summary of how the monitoring results in New York watersheds can potentially inform planning are below.

- Trends at most of New York's monitored watersheds are improving for phosphorus. However, trends at the majority of monitored watersheds are degrading for nitrogen. Additional exploration of these trends can help elucidate what may be driving differences between nitrogen and phosphorus trends. This can in turn help inform adaptation of programs, policies, or practices.
- Most of New York's monitored watersheds are estimated to have agriculture as a dominant source of nitrogen or phosphorus, suggesting that agriculture should be a continued focus moving forward.
- Implementing efforts in high loading areas can potentially yield the greatest nutrient reduction benefits. Trends are improving at half of New York's highest loading monitored watersheds for phosphorus. More exploration on what is occurring in these improving watersheds can potentially reveal successful programs, policies, or practices.