

EPA EVALUATION OF NEW YORK'S 2020-2021 and 2022-2023 MILESTONES

Executive Summary

The Chesapeake Bay Program (CBP) partnership established the goal to have all practices and controls in place by 2025 that were necessary to meet applicable water quality standards in the Chesapeake Bay (Bay) and its tidal tributaries (“2025 Goal”). The seven jurisdictions (Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia) in the 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 Bay and its tidal tributaries. The U.S. Environmental Protection Agency (EPA) is providing this evaluation of New York's 2020-2021 and 2022-2023 milestones to the CBP partnership and the public in accordance with its oversight role and responsibility under the CBP partnership's accountability framework.

In that role, EPA has evaluated New York's progress toward attaining its portion of the 2025 Goal. This evaluation includes an assessment of progress toward attaining nutrient and sediment goals at the state and state-basin level and progress toward meeting sector-specific programmatic commitments for the 2020-2021 milestone period. This evaluation also provides an assessment of sector-specific programmatic and numeric commitments (e.g., Best Management Practices (BMP) or BMP implementation targets) for the 2022-2023 milestone period and the status of the relevant water quality monitoring trends.

In reviewing New York's final programmatic progress for the 2020-2021 milestones, the 2021 numeric progress, and the final 2022-2023 milestone commitments, EPA identified sector-by-sector strengths as well as areas for enhancement. According to the data provided by New York for the 2021 progress run, New York did not achieve its statewide 2021 targets for nitrogen, phosphorus, and sediment. EPA stands ready to assist New York with implementing its 2022-2023 two-year milestone commitments.

Some notable strengths identified in this evaluation of New York's 2020-2021 milestones and the final 2022-2023 milestones include:

- Obtained additional funding for agriculture implementation through the National Fish & Wildlife Foundation (NFWF) Small Watershed Implementation Nutrient Management Proposal and the NFWF Small Watershed Grants (SWG) funding to focus on stream corridor restoration efforts.
- Developed a new database to track and verify construction stormwater BMPs. The database was completed and used for 2021 BMP progress submissions.
- Initiated permit modifications for significant facilities to include water quality-based effluent limitations consistent with the assumptions and requirements of the wasteload allocations in the Chesapeake Bay Total Maximum Daily Load (Bay TMDL). The number of permit modifications will be reported on an annual basis.
- Completed reconstruction of the Binghamton-Johnston City wastewater treatment plant. A final permit for the facility was issued in July 2020.

Some key areas that EPA expects New York to address in the 2022-2023 milestone period include:

- Revise agriculture BMP implementation data to better represent what implementation is current and what implementation is being reported as legacy.
- Continue to analyze wastewater trends to determine if changes in wastewater flow are due to measurable growth or due to wet weather and impacts of stormwater inflow and groundwater infiltration.
- Continue to monitor the U.S. Geological Survey (USGS) gauging station at Towanda, PA to determine if nutrient loads are increasing significantly.

Detailed Evaluation of Overall Load Reductions and Source Sectors

Load Reduction Review

When evaluating New York's 2020-2021 milestone implementation, EPA simulated nutrient and sediment loads using the Chesapeake Assessment Scenario Tool 2019 (CAST-19)¹ and wastewater discharge data reported by New York, and compared those simulated loads to New York's statewide and state-basin Phase III Watershed Implementation Plan (WIP) planning targets.

According to the data provided by New York for the 2021 progress run², New York did not achieve its 2021 nitrogen, phosphorus, or sediment targets for the Susquehanna basin.

Table 1. Loads and Targets for New York based on CAST-19 and reported wastewater data.

Pollutant	2009 Progress Loads (M lbs/year)	2021 Progress Loads (M lbs/year)	2025 Target (M lbs/year)
Nitrogen	14.42	12.61	11.80
Phosphorus	0.739	0.539	0.476
Sediment	699	664	533

New York developed specific BMP implementation targets for the 2020-2021 and 2022-2023 milestones for those practices identified in New York's Phase III WIP that account for the majority of the nitrogen reductions. Table 2 provides a summary of New York's 2021 progress compared to the 2009 baseline and the 2025 targets, as well as the 2022-2023 commitments, for these priority BMPs.

¹ CAST-19 is part of the Phase 6.0 suite of modeling tools for the Chesapeake Bay.

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 reduced.

Table 2. Progress toward Targets for New York’s priority BMPs (those that account for the majority of the nitrogen reductions).

BMP³	2009 Progress	2021 Progress	2022-2023 Milestone Target	2025 WIP Target
Animal Waste Management Systems (Livestock) (animal units)	31,529	93,651	2022-102,372 2023- 117,544	89,012
Soil Conservation and Water Quality Plans (acres)	42,058	189,076	2022-250,000 2023- 262,794	301,176
Bioretention/raingarden (acres treated)	None reported ⁴	1	None identified	53,133
Infiltration Practices (acres treated)	None reported	8	None identified	53,133
Forest Harvesting Practices (acres)	None reported	732	None identified	37,956

The summary progress from the CBP partnership’s modeling tools for 2009 and 2021 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. New York 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.

Looking Forward for Future Reviews of Progress

The CBP partnership is just a few years away from the 2025 date that has been agreed upon for several of the goals and outcomes under the [2014 Chesapeake Bay Watershed Agreement](#), including the 2025 Goal. Given the number of changing conditions (e.g., human and animal population growth, 2025 and 2035 climate impacts, model updates) that have and will continue to impact progress and the level of effort towards meeting these goals, it is critical to begin planning for the future.

Source Sector Review

Agriculture

New York is predominantly relying on agriculture BMP implementation to meet its 2025 targets according to its Phase III WIP. New York continues to make incremental progress toward its

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 2021, 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.

goals; however, the current pace of implementation is not on track to meet its overall nutrient targets. EPA expects New York to accelerate BMP implementation in the agricultural sector.

2020-2021 Milestone Achievements

- Implemented two rounds of the New York Agriculture Nonpoint Source Abatement and Control Program (Ag NPS). A total of \$6.3 million was invested implementing 179 BMPs on 25 farms in the watershed, of which farmers invested \$1.57 million through New York's cost share program.
- Provided two years of Agriculture Environmental Management (AEM) base program funding to Soil and Water Conservation Districts to support technical assistance to producers. The total amount of technical assistance provided by the Soil and Water Conservation Districts was estimated to be \$2.26 million.
- Implemented round 5 of the Climate Resilience Farming Program in February 2021. Not including farmer cost share, over \$594,000 was awarded for projects on 9 farms in the Chesapeake Watershed.
- Implemented two rounds of the Dairy Acceleration Program (DAP) to cost-share farm business planning and Comprehensive Nutrient Management Plans (CNMPs) development for small dairy farms.
- Executed a contract amendment to increase funding for the Upper Susquehanna Coalition's (USC) cover crop implementation program. A total of 12,087.52 acres of cover crops were implemented in 2021 as a result of the Cover Crop Implementation Program. A total of 106 farms participated across 13 counties.
- Increased capacity for agriculture BMP verification. Random sampling for 2021 was completed and distributed to all counties, which included 157 farm sites, 10 stream sites, 1 urban buffer site, and 10 wetland sites that were required to be verified for 2021 Progress.
- Continued BMP data collection program for Concentrated Animal Feed Operations (CAFOs) by combining New York State Department of Environmental Conservation (NYSDEC) compliance inspections with Soil and Water Conservation District (SWCD) data collection and verification visits. USC member counties participated in 8 CAFO inspections in the watershed during 2020 and 34 CAFO inspections during 2021.
- Continued to deliver outreach programs for farmers and agricultural professionals in the watershed about agricultural environmental management.
- Implemented enhanced oversight of facilities in the Susquehanna and Chemung River Basins by inspecting 15 medium and 12 large CAFOs in 2021. NYSDEC issued a notice of violation, a consent order, and 2 responses to public complaints.
- Allocated \$500,000 of Chesapeake Bay Implementation Grant (CBIG) funding as a continuation of the state forest buffer incentive program that began as part of the U.S. Department of Agriculture (USDA) Chesapeake Bay Riparian Forest Buffer Initiative.

2020-2021 Milestones Not Achieved

- Did not award the 2020 Climate Resilience Farming Program funds due to budget constraints created by the COVID-19 pandemic.
- Did not fully complete the contract to develop a mobile app to increase capacity of reporting and verification of agriculture BMPs. Due to the COVID-19 pandemic the contract was delayed, and the development of the mobile app is still underway.

- Did not fully achieve the goal of implementing two rounds of the New York Water Quality Improvement program (WQIP) and the Nonpoint Source Planning Grant (NPG) program. Due to funding challenges created by the COVID-19 pandemic, the funding was not released in 2020.

2022-2023 Milestone Strengths

- Commits to extend the current Cover Crop Implementation Program for a fifth year in 2022, targeting 3,500 acres of cover crops for a total of 14,500 acres during the past five years of implementation.
- Commits to allocate an additional \$110,000 to the original \$500,000 of CBIG funding as a continuation of the state incentive program for riparian forest buffers.
- Commits to support nutrient management planning through a \$500,000 NFWF grant to the USC, which will be used in both the agricultural sector and piloting work in the urban sector. The bulk of the grant will be focused on implementing nutrient management plans on agricultural lands.
- Commits to complete a strategic plan to support the Friends of the Chemung River through a \$50,000 grant awarded to the USC that allows them to expand their focus to the protection of the watershed.
- Commits to focus on implementing BMPs that address unmet needs in the watershed related to the Bay TMDL load allocations and assist with reoccurring flooding issues through funds awarded to the USC through the Regional Conservation and Partnership Program.

Key Areas to Address in the 2022-2023 Milestone Period

- Continue to implement the Climate Resilient Farming Program to mitigate the impacts of agriculture on climate change.
- Continue to make progress on developing the mobile app to increase capacity of reporting and verification of agriculture BMPs.
- Continue to implement the New York WQIP and the NPG program.
- Revise agriculture BMP implementation data to better represent what implementation is current and what implementation is being reported as legacy.

Urban/Suburban Stormwater

New York is expecting additional nutrient reductions from the stormwater sector by 2025 according to its Phase III WIP. EPA expects New York to accelerate BMP implementation in the urban/suburban stormwater sector.

2020-2021 Milestone Achievements

- Implemented two rounds of the Green Infrastructure Grant program (GIGP).
- Developed a new database to track and verify construction stormwater BMPs. The database was completed and used for 2021 BMP progress submissions.
- Expanded BMP reporting and verification through partnerships with Regional Planning Boards. A BMP tracking template was created that allows the Regional Planning boards to upload and report BMP progress data from non-regulated communities that were previously unreported.
- Expanded BMP reporting and verification through development of statistical survey procedures to be used in New York's BMP verification protocols.

- Continued to implement enhanced permit oversight of regulated facilities in the Susquehanna and Chemung River Basins. NYSDEC conducted 5 inspections at Municipal Separate Storm Sewer Systems (MS4) and 54 inspections at construction stormwater sites in the watershed. NYSDEC conducted 6 compliance assurance meetings and responded to 4 complaints for construction stormwater sites. NYSDEC issued 6 notices of violation for construction stormwater sites and one notice of violation for a MS4 in 2021.

2020-2021 Milestones Not Achieved

- Did not issue its Small MS4 general permit (General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (Draft GP-0-22-002)). The draft permit is still under internal NYSDEC review.

2022-2023 Milestone Strengths

- Committed to make the draft Small MS4 general permit and Fact Sheet available for public comment in January 2022. The public comment period closed on March 7, 2022.
- Continues to implement enhanced permit oversight of regulated facilities in the Susquehanna and Chemung River Basins.

Key Areas to Address in the 2022-2023 Milestone Period

- Finalize and issue the Small MS4 general permit.
- Consider revising the draft Small MS4 general permit to further reduce nutrients from regulated sources.
- Consider implementing more stringent implementation targets to meet the stormwater sector nutrient goals since relying on agriculture implementation beyond the Amended Phase III WIP commitments is not a reliable source of reductions at this time.

Wastewater Treatment Plants and Onsite Systems

2020-2021 Milestone Achievements

- Initiated permit modifications for significant facilities to include 2025 wasteload allocations and concentration limits. Since the release of the 2019 Phase III WIP, ten permit modifications for significant facilities were completed. The number of permit modifications will be reported on an annual basis.
- Issued a final permit for the completed reconstruction of the Binghamton-Johnston City wastewater treatment plant in July 2020.
- Continued to use the Integrated Compliance Information System (ICIS) data management system to submit individual state permit data, as appropriate.
- Continued to implement enhanced oversight of permitted facilities in the Susquehanna and Chemung River Basins. During the state fiscal year 2021, NYSDEC conducted 24 inspections of Bay significant facilities and 16 inspections of Bay non-significant facilities. Compliance assurance meetings were held with 12 facilities.
- Tracked upgrades for enhanced nutrient removal for significant and non-significant facilities through existing wastewater grant programs.

2020-2021 Milestones Not Achieved

- Did not fully achieve the goal of implementing two rounds of the New York WQIP and the Wastewater Infrastructure Engineering Planning Grant (EPG) program. Due to funding challenges created by the COVID-19 pandemic, the funding was not released in 2020.

2022-2023 Milestone Strengths

- Continues to initiate permit modifications for significant facilities to include 2025 wasteload allocations and concentration limits.

Key Areas to Address in the 2022-2023 Milestone Period

- Continue to analyze wastewater trends to determine if changes in wastewater flow are due to measurable growth or due to wet weather and impacts of stormwater inflow and groundwater infiltration (I&I) and report results using the two-year milestones.
- Continue to monitor USGS gauging station at Towanda, Pennsylvania to monitor phosphorous and nitrogen trends.
- Continue to implement the New York WQIP and the EPG programs.

Growth, Offsets, and Trading

2020-2021 Milestone Achievements

- Developed implementation scenarios based on 2025 forecasted growth conditions. Growth conditions will be updated every two years in accordance with the CBP partnership decision to update CAST every two years.

2020-2021 Milestones Not Achieved

- None.

2022-2023 Milestone Strengths

- Commits to conduct an analysis to determine if changes in flow are due to measurable growth or due to wet weather and impacts of I&I. If flow changes are due to growth, New York will implement actions to offset the load associated with growth. Flow increases due to wet weather as a result of excessive I&I will be addressed through I&I studies and remediation. This analysis will be completed for 2022-2023.
- Commits to prioritize follow up based on the 2021 Wastewater Growth Analysis for the following facilities: Sherburne STP – Address potential I&I issues, Greene wastewater treatment plant - Address potential I&I issues, Chobani Inc. – review for continued growth during 2022 – 2023.
- Commits to track nutrient trades among significant wastewater facilities and modify permits accordingly. So far, there have been no trades among these facilities.

Key Areas to Address in 2022-2023 Milestone Period

- Consider individual trading among permitted dischargers with a wasteload allocation (WLA) as a means of providing flexibility for the implementation of the Bay TMDL.
- Continue to work with EPA in offsetting any new or increased nutrient and sediment loads in New York's portion of the Chesapeake Bay watershed.

Climate

In 2020, the Principals' Staff Committee (PSC) issued a directive that by 2022 all jurisdictions would account for the additional nutrient loads due to 2025 climate change conditions in a Phase III WIP addendum, or in the two-year milestones, if they had not already done so in their Phase III WIP. New York addressed the 2025 climate change loads through its 2021 Amended Phase III WIP. Therefore, this evaluation reflects the work and effort that New York put toward addressing the 2025 climate loads understanding that expectations related to 2025 climate change conditions could change as a result of future PSC decisions and future model updates.

At its August 29, 2022 meeting, the PSC decided to address "unaccounted additional loads" after 2025. The CBP partnership will define "unaccounted additional loads" and will determine how to address them. This decision came after New York completed the work and effort noted in this section to address the 2025 climate loads.

2022-2023 Milestone Strengths

- Met the 2020 PSC directive to address the additional nutrient loads due to 2025 climate change conditions by including a CAST scenario in its 2021 Amended Phase III WIP that demonstrates an ability to account for the additional nutrient pollutant loads of 0.399 million lbs. of nitrogen and 0.044 million lbs. of phosphorus.
- Meets the phosphorus target and overachieves the nitrogen target by 168,230 lbs, after using a N:P exchange (1:0.424 for the Susquehanna Basin).
- Includes a narrative in its 2022-2023 two-year milestones to describe the current understanding of the 2035 climate change conditions.

Key Areas to Address in the 2022-2023 Milestone Period

- None.

Other (BMP verification, Segment-shed Goals for the Tidal Jurisdictions, Local Engagement, etc.)

2020-2021 Milestone Achievements

- In 2021, the USC was awarded \$500,000 to focus on stream corridor restoration efforts and watershed assessments.
- In 2021, the USC was awarded a grant for \$316,000 to purchase a property in the Mud Creek watershed and restore over 26 acres of wetland and riparian forest area.

2020-2021 Milestones Not Achieved

- None.

2022-2023 Milestone Strengths

- None.

Key Areas to Address in the 2022-2023 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 2022-2023 milestones. EPA will work with each jurisdiction to develop a 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 2022-2023 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.chesapeakeprogress.com/>]

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 (www.usgs.gov/CB-wq-loads-trends) over the long-term period 1985-2020 and short term 2009-2020 for most stations were made available in September 2020. New nutrient and suspended-sediment load and trend results became available for the nine River Input Monitoring (RIM) stations for the long-term period 1985-2020 and short term 2011-2020.

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's watersheds can potentially inform planning are below.

- Trends at the majority of New York's monitored watersheds are improving for phosphorus but degrading for nitrogen. Additional exploration of these trends can help clarify 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.