Evaluation of New York's Phase III Watershed Implementation Plan (WIP)

Executive Summary

The U.S Environmental Protection Agency (EPA) is providing this evaluation of New York's Phase III Watershed Implementation Plan (WIP). EPA's review of New York's Phase III WIP found areas in which the state addressed the goals of the Chesapeake Bay Total Maximum Daily Load (Bay TMDL) and the expectations set by the Chesapeake Bay Program (CBP) partnership.

New York's Phase III WIP proposes reductions in agriculture based on extensive coordination between farmers, the Upper Susquehanna Coalition (USC, representing all County Soil and Water Conservation Districts in the watershed), New York State Department of Environmental Conservation, and the New York Department of Agriculture and Markets. New York also provides a thorough gap analysis of the stormwater sector and has provided a detailed list of strategies to achieve reduction targets which New York believes will be necessary to achieve the nitrogen and phosphorus 2025 stormwater planning targets. New York has also committed to upgrading wastewater treatment plants (WWTPs), which will significantly improve nitrogen load reductions in the wastewater sector.

New York's Phase III WIP meets its numeric planning target for phosphorus at the state and state-basin (Susquehanna) levels through the proposed implementation of Best Management Practices (BMPs) and wastewater reductions. However, despite New York's extensive work in the agriculture communities of the Chemung and Susquehanna watersheds, the nitrogen reduction resulting from full implementation of the programs and practices detailed in the Phase III WIP falls short of the planning target by a total of almost one million pounds per year. Therefore, EPA recommends that to continue to honor its commitment to meet the CBP partnership's Bay TMDL planning goals for nitrogen by the 2025 date, New York should develop annual numeric targets beginning in 2020-2021 that are based on implementing programs and practices that result in meeting 100% of the planning target for nitrogen by 2025. EPA stands ready to assist in that development in any way possible.

In its Phase III WIP, New York identified implementation of five specific BMPs that account for 80% of the WIP nitrogen load reduction moving forward. For confidence the planned load reductions will occur, New York's WIP could have included detailed explanations about how New York will strengthen these practices and programs, including the inspection and maintenance of the BMPs already implemented. These concerns could be addressed through development of specific and detailed numeric targets for BMP implementation in selected source sectors. New York should include 2-year numeric BMP implementation targets for these five practices as part of its programmatic milestones.

Evaluation of New York's Phase III Watershed Implementation Plan (WIP)

Background

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 Watershed Implementation Plans (WIPs) in three phases to provide a framework 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 practices in place by 2025 that were necessary to achieve applicable water quality standards in the tidal Bay. The Chesapeake Bay TMDL (Bay TMDL), which is an informational planning tool, established goals to be met using the CBP partnership's timeline of 2025. In 2010, EPA worked with the CBP partnership to establish the Bay TMDL based primarily on the Phase I Watershed Implementation Plan (WIP) commitments made by each of the Bay jurisdictions. The CBP partnership agreed to develop Phase II and Phase III WIPs to set out an adaptable approach for achieving the pollutant reductions and programmatic commitments that New York intended to implement in each Phase so that it would meet its commitment to the CBP partnership's 2025 goals.

The CBP partnership agreed that EPA should help provide accountability and assess whether (1) each jurisdiction's WIP sets out sufficient commitments to meet the 2025 goals and (2) whether there is an adequate level of confidence that the jurisdiction will achieve those specific commitments. While EPA does not approve or disapprove a WIP, EPA provides the assessment for the benefit of the CBP jurisdictions, and, as appropriate, may provide additional recommendations for strengthening the WIP or its components. EPA evaluated New York's Phase III WIP to assess whether New York commitments will meet the 2025 statewide and state-basin Phase III WIP planning targets and whether New York included sufficient information in the WIP to provide confidence that New York will achieve these targets by 2025.

Overview

In reviewing New York's Phase III WIP, EPA found areas in which the state addressed the expectations set by the CBP partnership. Using the CBP partnership's suite of modeling tools, simulations indicate that full implementation of New York's plan is expected to achieve 100% of the statewide and state-basin (Susquehanna) Phase III WIP planning targets for phosphorus and 66% of the statewide planning target for nitrogen.

Additionally, Phase III WIP planning targets for sediment were approved by the CBP partnership's Management Board on October 17, 2019 and recommended to the Principal Staff Committee (PSC) for final approval. In its Phase III WIP, New York committed to provide an addendum to its Phase III WIP once the PSC approves these sediment targets. The Phase III WIP sediment targets will not affect the BMPs called for in the WIP and are not intended to be the driver for implementation moving forward.

Some of the notable strengths identified in the Phase III WIP include:

- New York is pursuing dedicating a portion of the Environmental Protection Fund to the Chesapeake Bay to increase funding.

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- New York is considering tax credit programs for farmers to incentivize implementing agriculture conservation practices. New York State Department of Environmental Conservation (NYSDEC) expects to submit a legislative proposal to that effect.
- New York has provided a detailed list of potential strategies and funding mechanisms in section 7.10 to increase stormwater BMP implementation.
- Planned reductions in agriculture are based on extensive coordination between farmers, the Upper Susquehanna Coalition (USC, representing all County Soil and Water Conservation Districts in the watershed), 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.

EPA's review, however, also noted remaining areas in New York's Phase III WIP that New York should address moving forward to satisfy its commitments to the CBP partnership in meeting the 2025 goals. Generally, New York's Phase III WIP lacks detail on how it will acquire additional funding and better harness its existing funding to meet the nitrogen targets in the agriculture sector. In addition, New York lacks an enhanced outline of how it will increase stormwater BMP implementation through additional funding efforts and on the ground efforts, as all the funding sources proposed are already in use.

EPA Oversight and Assistance[1]

As it has done since the release of the Bay TMDL, EPA plans to continue to commit staff, contractual, and funding resources to support the implementation of New York's Phase III WIPs and future two-year milestones. This support includes evaluation of the most-effective practices and locations, annual WIP assistance funding to address priority implementation needs, evaluation of New York's 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 New York on WIP and two-year milestone implementation to reduce pollution from federal lands. EPA will continue its commitment to track annual progress of New York and all the other 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]

Although New York made a commitment to the CBP partnership that it will achieve its numeric planning targets for phosphorus and nitrogen at the state and state-basin (Susquehanna) levels through the submission of best management practices (BMPs) and wastewater reductions, New York's Phase III WIP acknowledges that the programs and practices to be implemented would result in achieving 66% of its numeric planning targets for nitrogen. The Phase III WIP suggests additional measures that may be pursued to close the nitrogen reduction gap through adaptive management – such as increasing voluntary

[1] This Evaluation is not a final agency action, and does not create any right, responsibility, or benefit, substantive or procedural, enforceable by law or equity. Pursuant to the Anti-Deficiency Act, 31 U.S.C. §§ 1341 and 1342, all commitments made by EPA in this Evaluation are subject to the availability of appropriated funds and budget priorities. Nothing in this Evaluation obligates EPA to obligate or transfer any funds.

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participation, increased local partner capacity, and research into innovative techniques – without a clear commitment for the implementation of those suggestions.

In our role to help New York improve its accountability to the CBP partnership in meeting its commitment to the 2025 goals, EPA recommends that the following be included in New York's 2020-2021 milestones to enhance the Phase III WIP as submitted and at the same time address New York's recognized nitrogen gap.

Recommended Enhancements to the Phase III WIP (See Detailed Review)	**Recommended Actions**
Information on several agriculture and stormwater BMPs that were identified as being widely under reported or never reported in the WIP.	Develop specific numeric BMP implementation goals within the 2020-2021 milestone period that directly address the following underreported practices: o Manure incorporation/manure injection o Off-stream watering without fencing o Tree planting o Dairy precision feed management o Land retirement/alternative crops o Stream restoration o Urban forestry o Street sweeping o Catch basin cleaning o Retrofitting
Close the nitrogen gap that remains after full implementation of New York's Phase III WIP that demonstrates only a 66 percent achievement of its 2025 nitrogen planning target.	Consider increasing the following BMPs (and strengthening associated planned programs) to help close its 1 million-pound nitrogen gap: o Cover and Commodity Cover Crops o Forest and Grass Buffers o Livestock Waste Management Systems o Soil and Water Conservation Plans o Pasture Management BMPs o Retirement of Highly Erodible Land o Non-Urban Stream Restoration o Manure Incorporation
Additional information to increase confidence that practices that account for most nitrogen load reductions will be implemented.	• Develop a specific milestone in the 2020-2021 period that addresses progress on acquiring additional funding for agriculture reductions. • Develop a specific milestone that addresses which BMPs it will implement that will yield the highest reductions using the most cost-effective approach.
Information to support significant increases in BMP implementation	Develop specific numeric and programmatic milestones that link specific programs or strategies with the BMP implementation increase for the 2020-2021 period for the BMPs expected to provide the most significant reductions

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levels and wastewater reductions, in order from greatest to least.	(listed from greatest to least). These BMP account for 80% of the WIP nitrogen load reduction: o Bioretention/raingardens - A/B soils, no underdrain o Infiltration Practices w/o Sand, Veg. - A/B soils, no underdrain o Forest Harvesting Practices o Animal Waste Management Systems o Soil Conservation and Water Quality Plans o New York should include specific milestones on wastewater reductions expected to be achieved.
Strategies to increase financial incentives for producers in the agriculture sector where New York is relying on voluntary implementation.	Include a specific programmatic milestone for the 2020-2021 period on its progress towards implementing BMP tax credit programs.
Strategies to expand the technical assistance capacity through Agriculture Environmental Management (AEM) Base Program.	Include a specific programmatic milestone for the 2020-2021 period on progress toward increasing farm participation in the AEM Program.
Explore Construction Stormwater and MS4 general permit modifications as well as strategies to increase participation in the MS4 program.	Include a specific programmatic milestone for the 2020-2021 period on its progress towards enhancing permits and permit coverage to further reduce loading from regulated areas.

Over the 2020-2021 milestone period, EPA plans to provide the following specific assistance to New York to increase the level of confidence:

General

- Provide annual grant (e.g., Chesapeake Bay Implementation Grant, Chesapeake Bay Regulatory and Accountability Program, Local Government, etc.) and WIP assistance funding to New York to support implementation of their Phase III WIP.
- Track New York's progress with its initiatives and report to the CBP partnership.
- Assist New York in such actions as targeting practices in higher loading counties, EPA plans to continue to provide technical assistance, data and tools to aid New York in conducting assessments at local levels, including water quality monitoring data, model analyses, high-resolution land cover, improved stream networks, BMP opportunity layers and application of management-relevant research findings, upon request.

Agriculture

- Continue to work with New York to provide targeted financial assistance, if available, to support its agricultural initiatives.
- Advance opportunities to provide EPA grant funding directly to the New York's Department of Agriculture and Markets, particularly in those instances where it can improve the timely expenditure of Federal funds to support environmental protection goals (e.g., Chesapeake Bay Program grants).

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Stormwater

- Provide New York with the opportunity to discuss current and future needs (financial, programmatic, staffing) towards making progress on updating the Municipal Separate Storm Sewer (MS4) permit to include Chesapeake Bay reporting requirements specific to part 9 section d of the New York MS4 General Permit.

Wastewater

- Track the progress on New York's WWTP upgrades, specifically its progress toward reducing its average nitrogen treatment level for significant WWTP's.

Trading and Offsets

- Continue to provide oversight and input into New York's trading and offset program by reviewing draft regulations, and policies as well as participating on regulatory advisory committees.

Growth

- Provide to New York a sector growth breakout for each sector based on state submitted progress data each milestone period.

Detailed Evaluation of Overall Load Reduction and Source Sectors

The following sections provide specific highlights of key strengths of New York's Phase III WIP. These sections also highlight areas for enhancement to assist New York in implementing its Phase III WIP and subsequent two-year milestones to provide confidence that New York will have programs and practices in place by 2025 to achieve its Phase III WIP planning targets.

Load Reduction Review

When evaluating New York's Phase III WIP numeric commitments, EPA modeled implementation scenarios through the CBP partnership's Phase 6 suite of modeling tools and compared those simulated nutrient[2] loads to the New York's 2025 statewide and state-basin Phase III WIP planning targets. New York provided two implementation scenarios (Current Program Scenario and 2025 Program Scenario) in support of its draft Phase III WIP. The "Current program" scenario describes the numeric goals that New York is committed to achieving by 2025. This scenario extends the Phase II level of implementation into Phase III and assumes current levels of effort and funding. The 2025 Program Scenario is a theoretical scenario that New York could use to close the gap between its Current Program Scenario for agriculture and New York's Phase III WIP planning targets assuming significant additional funding and resources. The following discussion of final numeric Phase III WIP loads is based on the Current Program Scenario.

Simulations indicate that full implementation of New York's plan is expected to achieve 100% of the statewide and state-basin Phase III WIP planning target for phosphorus (with an excess of 73,000 pounds). New York's plan does not achieve its statewide Phase III WIP planning target for nitrogen. New York's plan will achieve 66% of needed statewide nitrogen reductions by 2025.

[2] Phase III WIP planning targets for sediment were developed by the CBP partnership after the Phase III WIP submittal and New York committed to address the sediment targets approved by the CBP partnership and to amend its Phase III WIP once the CBP partnership approves these sediment targets.

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New York has divided its respective Phase III WIP planning targets into source sector goals to demonstrate how pollutant load reductions will be achieved by 2025. In New York's Phase III WIP, nitrogen load reductions are planned from implementation of best management practices (BMPs) in the following sectors: stormwater (37%), wastewater (25%) and agriculture (24%). Phosphorus load reductions are planned from implementation of BMPs in the following sectors: wastewater (25%), stormwater (21%), and agriculture (9%).

Source Sectors

Agriculture

Key Strengths

Key strengths in New York's Phase III WIP include:

- New York has committed 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 Upper Susquehanna Coalition (USC), New York State Department of Environmental Conservation, 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.
- New York released an updated version of the Clean Water Act State Pollutant Discharge Elimination System (SPDES) Concentrated Animal Feeding Operation (CAFO) General Permit in February 2019. This permit includes mandatory training of farm staff, enhanced practices in sensitive groundwater areas, in-person oversight of manure transfer systems, and should help ensure that previously implemented agricultural practices and management systems are properly utilized and maintained through improved education and oversight.
- New York created the CAFO Waste Storage and Transfer Program to assist CAFO farms with meeting the minimum storage capacity required by the CAFO permit.
- New York provided a detailed list of potential funding strategies and funding initiatives to fill the gap in the agriculture sector. Potential strategies include increase voluntary implementation, increase local partner capacity, expand BMP reporting and verification, account for state-specific data in the Chesapeake Bay Watershed Model, support development of innovative tools and research, explore new funding strategies including access to additional state funds.
- New York has committed to adopting core nutrient management on 22% of available acres with a goal to increase this number to 50% of available acres. In addition, New York has proposed a goal of implementing supplemental rate, placement and timing on 40% of available acres.
- New York has committed to pursuing additional funding to increase staff in the USC and its member districts.
- New York has provided more strategies and opportunities to effectively use its existing resources and access additional state funding. More information is available in section 5.10.

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Enhancements
EPA recommends New York address the following in its 2020-2021 milestones to satisfy its CBP partnership commitments:

- In its 2020-2021 milestones, New York could report out on the progress made on acquiring additional funding. Despite New York's efforts to implement the 2025 Program Scenario, the 2025 nitrogen target was missed by 900,000 lbs./year. It is estimated that an additional $92,000,000 would be required to meet the 2025 nitrogen targets. New York provided a list of potential funding strategies to fill the agriculture gap, however EPA does not have confidence that the proposed funding sources will be sufficient.
- Include a more detailed explanation of how these BMP practices will be strengthened, including the inspection and maintenance of the BMPs already on the ground in its 2020-2021 milestones. There is a significant portion of planned nitrogen reductions, 80%, coming from BMP implementation.

Stormwater

Key Strengths
Key strengths in New York's Phase III WIP include:

- This is the first time that New York plans to achieve significant reductions in this sector.
- New York 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.
- New York is currently revising the MS4 general permit. Any changes will be included as an addendum to the Phase III WIP.
- New York has provided additional information on strategies and funding mechanisms for achieving implementation levels for each BMP or group of BMPs listed in Table 20 for MS4 and non-MS4 areas.

Enhancements
EPA recommends New York address the following in its 2020-2021 milestones to satisfy its CBP partnership commitments:

- Continue to track and report on the progress they are making towards achieving stormwater BMP implementation levels listed in table 20 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

Key Strengths
Key strengths in New York's Phase III WIP include:

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- New York is extending its Phase II WIP level of effort for nutrient and sediment reductions into the Phase III WIP, providing a high level of confidence that New York's wastewater strategy is feasible.
- New York plans to remove the nitrogen bubble permit and nitrogen and phosphorus trading as described in its Phase II WIP from existing permits to improve New York's ability to achieve reductions at individual facilities.
- The most updated model delivery factors to calculate the current delivery load and projected 2025 delivery load to the wastewater sector were used.
- New York's commitment to planned WWTP facility upgrades should yield positive results and an overall reduction in nitrogen concentrations.

Enhancements

EPA recommends New York address the following in its 2020-2021 milestones to satisfy its CBP partnership commitments:

- 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.

Trading & Offsets

Key Strengths

Key strengths in New York's Phase III WIP include:

- New York does not have any reserve nitrogen or phosphorus 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), expanded facilities improve treatment, and/or use of future trading programs.
- New York plans to consider individual trading among SPDES with a WLA as a means of providing flexibility for the implementation of the TMDL.

Federal Facilities

Federal facilities contribute less than 1% of New York's total load to the Bay.

Changing and Local Conditions

Growth

Key Strengths

Key strengths New York's Phase III WIP include:

- New York developed its implementation scenarios based on 2025 forecasted growth conditions, per the CBP partnership decision, and indicated that these growth conditions will be updated every two years.
- The nutrient and sediment loads in the agricultural and stormwater sectors are projected to change over time. New York plans to address these increased loads with improved BMP reporting.

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Climate

Key strengths

Key strengths in New York's Phase III WIP include:

- New York documented its jurisdiction-specific 2025 numeric climate change loads in the Phase III WIP.
- New York commits to several actions to address climate, including reducing greenhouse gas emissions through its participation and development in ClimAid (the Integrated Assessment for Effective Climate Change Adaptation strategies in New York), Smart Climate Communities, Cleaner Greener Southern Tier Plan, and the Climate Resilient Farming Program. New York also fully participates in the Regional Greenhouse Gas Initiative.
- New York committed to adopting the new numeric climate change loads starting with the 2022-2023 milestones.

Local Engagement Strategies

Key Strengths

Key strengths in New York's Phase III WIP include:

- New York's local engagement during the draft Phase III WIP development was strong in the agriculture, wastewater, and stormwater sectors.

In its Phase III WIP, New York addressed the following potential enhancements that were suggested by EPA in its draft Phase III WIP evaluation:

- New York included detailed descriptions of local engagement strategies during Phase III WIP implementation in its Phase III WIP.

Local Planning Goals

Key Strengths

Key strengths in New York's Phase III WIP include:

- New York developed local planning goals that are measurable and below the major state-basin scale in the Chesapeake Bay watershed, following the CBP partnership decision.
- New York developed local planning goals at the sub-watershed scale and numeric BMP implementation goals for the agricultural sector. New York also developed local planning goals at the county scale and a percent reduction of existing loads will be tracked as the measurable outcome for the stormwater sector.
- New York explained that its local planning goals will be tracked using the Chesapeake Bay Assessment Scenario Tool (CAST) and reported as part of New York's two-year milestones and/or annual progress reporting.
- New York provided further clarification of its key local partners responsible for implementing the BMPs and load reductions in the agricultural and stormwater sectors. More information on these partners is available in Section 3.

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BMP Verification

Jurisdictions agreed to follow CBP partnership-approved BMP verification protocols when developing and implementing the Phase III WIPs. Because New York is proposing to increase BMP implementation rates of some BMPs by 10-fold or more in the next seven years, New York should ensure that implementation at this higher rate can be tracked, verified, and reported within that period in accordance with the agreed upon verification protocols, or by another method established by the CBP partnership.

Regarding plans to conduct an inventory of data for BMPs that have already been implemented, it is important that future reporting of this data include accurate implementation and inspection dates, following the CBP partnership's verification protocols, or by another method established by the CBP partnership..

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