

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

## Executive Summary

The U.S. Environmental Protection Agency (EPA) is providing this evaluation of New York's draft amended Phase III Watershed Implementation Plan (WIP or plan). New York's draft amended Phase III WIP includes 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. The 2020 draft amended Phase III WIP supersedes New York's 2019 Phase III WIP submission, and this evaluation encompasses a full review of New York's draft amended Phase III WIP. As a result, this evaluation includes strengths and enhancements maintained from EPA's evaluation of New York's 2019 Phase III WIP and feedback on the draft amended portions of New York's Phase III WIP.

New York's draft amended 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 (NYSDEC), and the New York Department of Agriculture and Markets. New York's plan outlines updated wastewater projections and updated projections of 2025 loads delivered to the Bay. New York also notes that upgrades to wastewater treatment plants (WWTPs) are in process, which will significantly improve nitrogen load reductions in the wastewater sector.

New York's draft amended Phase III WIP is projected to meet New York's numeric planning target for nitrogen and phosphorus at the state-basin (Susquehanna) level through the proposed implementation of Best Management Practices (BMPs), updated wastewater projections, translating to additional load reductions, and nitrogen to phosphorous exchanges. EPA identified sector-by-sector strengths in the revised commitments as well as areas that could be enhanced to provide greater confidence that the projected reductions will be achieved by 2025. The associated level of confidence could be improved as further detailed in this evaluation. EPA stands ready to assist in improving the level of confidence in any way possible.

In its draft amended Phase III WIP, New York identified implementation of six specific BMPs in addition to wastewater controls, that account for 83% 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. For example, New York, as part of its programmatic milestones, should include 2-year numeric BMP implementation targets for these six practices. New York should also include annual tracking of loadings from the wastewater sector.

## Evaluation of New York's Draft Amended 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 WIP commitments made by each of the Bay jurisdictions. The CBP partnership agreed that each Bay state would develop Phase II and Phase III WIPs to set out an adaptable approach for achieving the pollutant reductions and programmatic commitments that it 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 partnership, and, as appropriate, may provide additional recommendations for strengthening the WIP or its components. EPA evaluated New York's draft amended Phase III WIP to assess whether New York's commitments will meet the 2025 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 draft amended 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 state-basin (Susquehanna) Phase III WIP planning targets for nitrogen and phosphorus. State-basin targets were met, in part, through exchanges of phosphorus to nitrogen<sup>1</sup>.

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. New York provided final sediment targets in February 2020. 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 New York's draft amended Phase III WIP include:

- Providing new projections for the wastewater sector that, combined with an exchange of

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<sup>1</sup> Each jurisdiction has the option of adjusting its Phase III WIP state-basin planning targets through nutrient exchanges and/or exchanges with other basins within that jurisdiction. Consistent with commitments New York agreed to through the CBP partnership, any adjustments to the state-basin planning targets must still result in all 92 Chesapeake Bay segments achieving the respective jurisdictions' Chesapeake Bay water quality standards under the Phase 6 Chesapeake Bay airshed, watershed, and estuarine water quality/sediment transport model simulated conditions.

phosphorus to nitrogen, exceed the 2025 targets.

- Increasing funding by pursuing dedicating a portion of the Environmental Protection Fund to implementation efforts for the Chesapeake Bay.
- Considering tax credit programs for farmers to incentivize implementing agriculture conservation practices. NYSDEC expects to submit a legislative proposal to that effect.
- 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 draft amended Phase III WIP that New York should address moving forward to satisfy its commitments to the CBP partnership in meeting the 2025 goals.

- New York should include commitments to annually track growth in each sector to determine if additional implementation is necessary to achieve the 2025 goals.
- New York should include a commitment to increase reductions in the agriculture sector (e.g., BMP implementation) to bolster confidence that overall nitrogen reductions would be maintained should unexpected growth in the wastewater sector occur beyond 2025.
- New York should provide more detail on how stormwater BMP implementation will be increased through additional funding efforts and on the ground efforts, as all the funding sources proposed are already in use.
- New York should provide more clarity on how the excess capacity achieved in the wastewater sector will meet the 2025 nitrogen target.
- New York should provide detailed calculations in the wastewater section, specifically showing how 2025 delivered loads of nitrogen and phosphorus were calculated. EPA recommends providing delivery factors and concentrations for each facility.

## **EPA Oversight and Assistance**<sup>2</sup>

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

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<sup>2</sup> 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

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> ]

## **Detailed Evaluation of Overall Load Reduction and Source Sectors**

The following sections provide specific highlights of key strengths of New York’s draft amended Phase III WIP. These sections also highlight areas for enhancement to assist New York in implementing its draft amended Phase III WIP as well as outstanding enhancements EPA identified in New York’s December 2019 Phase III WIP, and subsequent two-year milestones to provide confidence that New York will maintain its Phase III WIP planning targets beyond 2025.

### **Load Reduction Review**

When evaluating New York’s draft amended 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<sup>3</sup> loads to the New York’s 2025 state-basin Phase III WIP planning targets. New York provided a draft amended Phase III WIP scenario. Simulations indicate that full implementation of New York’s plan is expected to achieve 100% of the state-basin Phase III WIP planning target for nitrogen and phosphorus. The draft amended Phase III WIP includes phosphorus to nitrogen exchanges which result in New York exceeding the 2025 nitrogen target. New York divided its respective draft amended Phase III WIP planning targets into source sector goals to demonstrate how pollutant load reductions will be achieved by 2025. In New York’s draft amended Phase III WIP, nitrogen load reductions are planned primarily from implementation of BMPs in the following sectors: wastewater (34%), agriculture (34%), and stormwater (25%). Phosphorus load reductions are planned primarily from implementation of BMPs in the following sectors: wastewater (47%), agriculture (20%), and stormwater (15%).

### **Source Sectors**

#### **Agriculture**

##### **Key Strengths**

Key strengths in New York’s draft amended Phase III WIP include:

- New York commits to increase its implementation of nutrient management plans from 9% (69,000 acres) currently to 21% (151,000 acres).
- Planned reductions are expected to be a result of extensive coordination between farmers, the Upper Susquehanna Coalition (USC), NYSDEC, and the New York Department of Agriculture and Markets. To-date, 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

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<sup>3</sup> Phase III WIP planning targets for sediment were developed by the CBP partnership after the Phase III WIP submittal and were approved in October 2019. New York committed to address the sediment targets approved by the CBP partnership and to amend its Phase III WIP in February 2020 to include the approved sediment targets.

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 committed to increasing adoption of core nutrient management, as well as supplemental rate, placement and timing.
- New York committed to pursuing additional funding to increase staff in the USC and its member districts.
- New York provided more strategies and opportunities to effectively use its existing resources and access additional state funding. More information is available in section 5.10.

### **Enhancements**

EPA recommends that New York consider the following enhancements in the final amended Phase III WIP to satisfy its CBP partnership commitments:

- Report, in its two-year milestones, the progress made on acquiring additional funding to offset any further growth beyond 2025.
- Although the 2025 nitrogen gap was closed primarily using updated load projections in the wastewater sector, additional commitments to increase reductions in the agriculture sector would provide more confidence that overall nitrogen reductions would be maintained overtime, particularly if unexpected growth in the wastewater sector were to occur beyond 2025.
- Provide, in its two-year milestones, a more detailed explanation of how the agricultural BMPs will be strengthened, including a description of the inspection and maintenance of the BMPs already on the ground. BMP implementation in the agricultural sector accounts for 34% of the nitrogen reductions and 20% of the phosphorus reductions.

### **Stormwater**

#### **Key Strengths**

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

- New York commits to achieve significant reductions in this sector for the first time.
- New York proposes 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 Municipal Separate Storm Sewer System (MS4) general permit. Any changes will be included as an appendix to the final amended Phase III WIP.
- New York provides 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 that New York consider the following enhancements in the final amended Phase III WIP to satisfy its CBP partnership commitments:

- Include the current BMP implementation progress in Table 20 to clearly show progress made towards meeting the 2025 target.
- Describe sources of funding and programmatic implementation, for BMPs with planned

implementation rates 10 times greater than historic rates (from 2009 to 2019), to provide confidence that the BMP implementation targets are achievable by 2025.

EPA recommends that New York continue to consider the following enhancements identified by EPA through its evaluation of New York's December 2019 Phase III WIP to satisfy its CBP partnership commitments:

- Continue to track and report on the progress 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 draft amended Phase III WIP include:

- New York's estimated 2025 delivered loads were re-calculated for each Bay-significant facility using 3-year average flows (July 2016 to June 2019) instead of design flows. Use of average flows are more reflective of actual conditions in New York due to decreasing population in the Chesapeake Bay watershed portion.
- New York is in the process of completing several Inflow and Infiltration (I&I) studies, and facilities that are experiencing exceedances in flow will be prioritized for state funding to address aging infrastructure.
- 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.
- Planned WWTP facility upgrades should yield positive results and an overall reduction in nitrogen concentrations.

### **Enhancements**

EPA recommends that New York consider the following enhancements in the final amended Phase III WIP to satisfy its CBP partnership commitments:

- Clarify Section 6 and revise language that describes "discharged wasteload allocations" to distinguish the assigned wasteload allocations in the permit and the actual or expected discharge loads. Clarify if the discharged loads are based on current loads or expected/projected loads for 2025.
- Document in Section 6.3.1 where nitrogen and phosphorus loads are exchanged between facilities and if those exchanges are captured in the permits or through a trading program.
- Document in Section 6.3.1 where several wasteload allocations (WLAs) were adjusted based on incorrect assumptions and if those adjustments are documented in the permits.
- Document in Table 16 what concentration values and delivery factors were used for each individual facility to arrive at the delivered load. Also, specify if concentration values came from default values or from monitored wastewater facility data. If monitored data was used, provide the time frame for which the data collected.
- Consider collecting nutrient concentration data from non-significant wastewater facilities on a periodic or rotating basis.

- Clarify the language in Table 15 to describe an “interim discharged WLA” and a “final 2025 discharged WLA,” and whether this table includes the permitted loads or the actual/anticipated loads.
- Describe the actions, such as annual tracking and milestone reporting, New York will take to ascertain that wastewater flows remain at or below current actual flows, as anticipated.
- Incorporate the information from the appendices into the body of the amended Phase III WIP to make the connection on how New York will meet the 2025 goals.
- Describe the timing of the proposal to remove the bubble permit, (described in section 6.3.6)
- Include in Section 6.10, the intent to use additional agriculture BMP implementation to address any unexpected growth in the wastewater sector or refer readers to Section 9: Accounting for Growth.

EPA recommends that New York continue to consider the following enhancements identified by EPA through its evaluation of New York’s December 2019 Phase III WIP to satisfy its CBP partnership commitments:

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

## **Trading & Offsets**

### **Key Strengths**

Key strengths in New York’s draft amended 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 with WLAs, improving treatment at expanded facilities, and/or use of future trading programs.

## **Federal Facilities**

Federal facilities contribute less than 1% of New York’s total nitrogen and phosphorus load to the Bay.

## **Changing and Local Conditions**

### **Growth**

#### **Key Strengths**

Key strengths New York’s draft amended 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.

### **Enhancements**

EPA recommends that New York consider the following enhancements in the final amended Phase III WIP to satisfy its CBP partnership commitments:

- In Section 9 “Accounting for Growth,” New York should commit to track growth and provide

detail on its intent to seek additional reductions from the agriculture sector to account for growth, if necessary. In particular, provide more detail on New York’s stated intention, in Section 5.10, to use the “2025 Program Scenario” to achieve additional reductions from the agricultural sector to address growth in the wastewater sector, or other increased loads in New York, as EPA notes that the draft amended Phase III WIP states, in Section 6.10, that the use of wastewater optimization to account for growth in the wastewater sector will be used, not agriculture.

## **Climate**

### **Key strengths**

Key strengths in New York’s draft amended Phase III WIP include:

- New York documented its jurisdiction-specific 2025 numeric climate change loads in the draft amended 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 draft amended Phase III WIP include:

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

In its draft amended Phase III WIP, New York included the following potential enhancements that were suggested by EPA in its evaluation of New York’s draft Phase III WIP:

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

## **Local Planning Goals**

### **Key Strengths**

Key strengths in New York’s draft amended Phase III WIP include:

- Following the CBP partnership decision, New York developed local planning goals that are measurable and below the major state-basin scale in the Chesapeake Bay watershed.
- 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.

### **Other**

EPA recommends that New York consider the following enhancements in the final amended Phase III WIP to satisfy its CBP partnership commitments:

- Revise the amended Phase III WIP and Appendix G and H to reflect that the amended 2025 nitrogen goal for New York is 11.80 million lbs., and the amended 2025 phosphorus target is 0.476 million lbs. It should also be clear that the amendments to the Planning Targets accommodate N:P exchanges.
- The amended Phase III WIP should include the latest US Geological Survey (USGS) information regarding monitoring trends which reflect that short-term water quality trends are degrading in 3 of the 5 monitoring stations in the Cohocton River, Chemung River, and at the Susquehanna River where it enters Pennsylvania. Water quality trends are improving at Conklin and no trend is observed in the monitoring station near Rockdale. The Towanda station, which captures all of the New York Susquehanna loads – and a relatively small portion of Pennsylvania – indicates degrading conditions over the past 10 years for nitrogen, phosphorus, and sediment. New York should include actions to determine the source of these trends and use the two-year milestones to adjust or increase reductions to account for areas of degrading water quality.
- The amended Phase III WIP should clearly explain in the Executive Summary and Section 1 that more accurate wastewater projections are expected to account for achieving the nitrogen targets based on the expectation that little to no growth will occur, and that assumed condition will keep New York at or below the 2025 target.
- The content of the appendices, in particular Appendix H, would benefit from being included directly in the document for continuity and to assure that numbers in the amended Phase III WIP align with the appendices.
- Clarify in the draft amended Phase III WIP the description of the two different historic scenarios: The “Current Program Goal” scenario and the “2025 Program Goal” scenario. These two scenarios were associated with New York’s 2019 WIP, and the current WIP scenario supplants those. It is unclear what the draft amended Phase III WIP goals are, under the current naming system. EPA recommends referring to the 2019 scenarios only when describing the history. The tables, figures and narrative in the draft amended Phase III WIP should clearly align with the 2020 WIP scenario. This comment applies to BMP goals as well as local BMP planning goals throughout the draft amended Phase III WIP.
- Include the current progress for BMP implementation levels to provide context for how much additional implementation is needed to achieve the 2025 goals. This comment impacts both the agriculture and the developed sectors.

### **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 several 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 New York's plans to conduct an inventory of data for BMPs that have already been implemented, it is important that New York's 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.