

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

Executive Summary

The U.S. Environmental Protection Agency (EPA) has completed the evaluation of Pennsylvania's Phase III Watershed Implementation Plan (WIP). EPA's review of Pennsylvania's Phase III WIP found areas in which the Commonwealth addressed the expectations set by the Chesapeake Bay Program (CBP) partnership and other areas where the plan needs additional documentation.

Pennsylvania, which was one of the original signatories of the Chesapeake Bay Agreement and long-standing active participant in the CBP partnership, has continued to commit to the goal of a clean Chesapeake Bay by initiating and agreeing to actions to achieve that goal. EPA recognizes that Pennsylvania's challenges in meeting its CBP partnership Chesapeake Bay Total Maximum Daily Load (Bay TMDL) goals are greater and different than the other jurisdictions. The Commonwealth had the greatest responsibility for nutrient reductions since the release of the Bay TMDL, and Pennsylvania's local governmental structure may require an additional level of coordination and collaboration when restoring water quality on a watershed basis. Pennsylvania's ground-up, stakeholder-driven process for developing its Phase III WIP was noteworthy. Hundreds of watershed stakeholders were engaged in the Phase III WIP development process to assess barriers to watershed implementation and explore creative strategies to overcome them.

EPA recognizes the leadership of the agriculture sector in providing recommendations for commitments to help meet the Bay restoration goals. These recent efforts and contributions from agriculture resulted in significant, positive momentum for the development of the Phase III WIP. Success in this sector in Pennsylvania, is key to the overall success of Pennsylvania's contribution to the CBP partnership's restoration effort.

EPA also recognizes the contribution and leadership of other sectors and stakeholders in providing recommendations for commitments to help meet the Bay restoration goals. Through the pilot County Action Plan efforts in Lancaster, York, Adams, and Franklin Counties, Pennsylvania provided a comprehensive road map for these counties in the watershed and developed an effective method for targeting areas for locating pollutant reduction practices that achieve the most effective and efficient use of grant dollars. These efforts also resulted in significant, positive momentum toward successful watershed restoration.

Pennsylvania's Phase III WIP meets its numeric planning targets for phosphorus and 75% of its numeric planning targets for nitrogen at the state and state-basin (Susquehanna, Potomac, Eastern Shore, and Western Shore) levels through the submission of best management practices (BMPs) and wastewater reductions. EPA recognizes that Pennsylvania has the largest loads to account for within the Chesapeake Bay, nevertheless the actions in the Phase III WIP will help improve the health of local streams and the Bay. However, Pennsylvania's current planned efforts do not achieve the nitrogen Phase III WIP planning target, nor does the plan explain how or when additional reductions from the remaining County Action Plans will be incorporated into the broader plan to achieve the nitrogen planning target. EPA recommends that to continue to honor its commitment to meet the partnership's Bay TMDL planning goals for nitrogen by the 2025 date, Pennsylvania may want to seize upon the stakeholder momentum, reconsidering the sector workgroup recommendations, and develop numeric 2020 – 2021 milestones that are based on implementing programs and practices to meet 100% of the planning target for nitrogen by 2025. EPA stands ready to assist in that development in any way possible, including continuing to work with the sector workgroups in developing milestones that fully address Pennsylvania's commitments to meet the Bay restoration goals.

In its Phase III WIP Pennsylvania identified implementation of nine specific agricultural BMPs that account for 76% of the WIP nitrogen load reduction moving forward. For confidence that the planned load reductions will occur, Pennsylvania's WIP could have included detailed explanations about how Pennsylvania 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. EPA recommends Pennsylvania include two-year numeric BMP implementation targets for these nine practices as part of its programmatic milestones.

Evaluation of Pennsylvania'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 Total Maximum Daily Load (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. Pennsylvania agreed to develop Phase II and Phase III WIPs to set out an adaptable approach for achieving the pollutant reductions and programmatic commitments that Pennsylvania 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 Pennsylvania's Phase III WIP to assess whether Pennsylvania commitments will meet the 2025 statewide and state-basin Phase III WIP planning targets and whether Pennsylvania included sufficient information in the WIP to provide confidence that Pennsylvania will achieve these targets by 2025.

Overview

In reviewing Pennsylvania's Phase III WIP, EPA found areas in which the Commonwealth addressed the goals of the Bay TMDL and the expectations set by the partnership. Using the CBP partnership's suite of modeling tools, simulations indicate that full implementation of Pennsylvania's plan is expected to achieve 100% of the statewide and state-basin (Susquehanna, Potomac, Eastern Shore, and Western Shore) Phase III WIP planning targets for phosphorus and 75% of the statewide planning target for nitrogen. Pennsylvania's plan achieves the nitrogen target in the Western Shore basin. However, modeling simulations indicate that the plan will not achieve nitrogen targets in the Susquehanna, Potomac, or Eastern Shore basins¹.

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 Principals Staff Committee (PSC) for final approval. In its Phase III WIP, Pennsylvania committed to provide an addendum to its Phase III WIP once the PSC approves these sediment targets. The sediment target addendum will not affect the BMPs called for in the WIP and are not intended to be the driver for implementation moving forward.

¹ 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 Pennsylvania 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 Phase 6 Chesapeake Bay airshed, watershed, and estuarine water quality/sediment transport model simulated conditions.

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

- Pennsylvania conducted outreach and community engagement efforts to develop the Phase III WIP. Hundreds of watershed stakeholders were involved in the Phase III WIP development process to assess barriers to watershed implementation and creative strategies to overcome them.
- Through the pilot Countywide Action Plan efforts in Lancaster, York, Adams, and Franklin Counties, Pennsylvania provided a comprehensive plan for the counties in the watershed and represented an effective use of targeting areas for pollutant reduction practices. Should the proposed state funding initiative materialize, the Countywide Action Plan rollout to the Tier 2, 3, and 4 counties would accelerate the pace of BMP implementation going forward.
- Pennsylvania committed to initiate implementation of the Pennsylvania Ag Conservation Stewardship program by January 2020 that will recognize producers who document, with proper verification, practices demonstrating compliance with state regulatory requirements as well as all recommended Phase III WIP practices applicable to their operations.
- Pennsylvania clearly defined the funding and resource gaps necessary to address the numeric planning targets.
- Pennsylvania's wastewater sector documents that the significant dischargers reached the 2025 nitrogen and phosphorus reduction goals in 2018, seven years ahead of schedule.

EPA's review, however, also noted remaining areas in the Phase III WIP that Pennsylvania could address moving forward to satisfy its commitments to the CBP partnership in meeting the 2025 goals. Generally, EPA recommends that Pennsylvania consider amending its Phase III WIP to include more robust implementation details and programmatic commitments on the initiatives identified for achieving commitments on nutrient reductions, including securing the necessary funding and staff, enacting needed legislation, refining programs, and developing necessary regulatory changes.

EPA Oversight and Assistance²

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 Pennsylvania's Phase III WIP 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 Pennsylvania'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 work with federal partners to provide leadership and coordinate with Pennsylvania on WIP and two-year milestone implementation to reduce pollution from federal lands. EPA plans to continue its commitment to track annual progress of Pennsylvania and all the other Bay jurisdictions, and make those results available to the CBP partnership. [See: <https://www.epa.gov/chesapeake-bay-tmdl/epa-oversight-watershed-implementation-plans-wips-and-milestones-chesapeake-bay>]

Although Pennsylvania 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, Potomac, Eastern Shore, and Western Shore) levels through the implementation of best management practices

² 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.

(BMPs) and wastewater reductions, Pennsylvania’s Phase III WIP acknowledges that the programs and practices to be implemented would result in achieving 75% 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 the completion of the remaining Countywide Action Plans over 18 months, improved documenting, tracking, and verification of existing practices and programs, and through accreditation of new practices that reduce nutrients and sediment. However, the Phase III WIP does not provide a clear commitment or timeline for the implementation of those suggestions.

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

Recommended Enhancements to the Phase III WIP (See Detailed Review)	Recommended Actions
<p>Additional information to increase confidence that practices that account for the majority of load reductions will be implemented.</p>	<p>Develop specific numeric BMP implementation targets for the 2020-2021 milestone period for BMPs expected to account for at least 60% of the nitrogen reductions between now and 2025:</p> <ul style="list-style-type: none"> ○ Animal Waste Management Systems ○ Forest Buffers ○ Nutrient Management Core Nitrogen ○ Cover Crop with Fall Nutrients (Rye Normal Drilled) ○ Soil Conservation and Water Quality Plans ○ Tillage Management-Continuous High Residue ○ Grass Buffers ○ Forest Buffer - Streamside with Exclusion Fencing ○ Cover Crop (Rye Normal Drilled)
<p>Additional information (e.g., new strategies, legislative programs, incentive programs, compliance programs, and/or funding mechanisms) to support significant increases in implementation levels (WIP calls for a 10-fold increase in implementation in some cases, a 92% reduction in agriculture nitrogen load since 2009, and a reversal in the 30-year trend of increasing stormwater loads).</p>	<p>Develop numeric targets within the 2020-2021 milestone to support implementation of the following BMPs:</p> <ul style="list-style-type: none"> ○ Soil and Water Conservation Plans ○ Urban Stream Restoration ○ Prescribed Grazing ○ Urban Nutrient Management ○ Grey Infrastructure (IDDE) ○ Manure Incorporation ○ Forest and Grass Buffers-Fence Pasture Corridor ○ BioSwales <ul style="list-style-type: none"> ● Develop specific programmatic milestones within the 2020-2021 milestone period for its WIP initiatives (e.g., nutrient management, agriculture compliance, animal waste storage, buffers) ● Develop milestones that link specific programs or strategies with the BMP implementation increase for

	<p>the 2020-2021 period for BMPs expected to provide the most significant reductions.</p> <ul style="list-style-type: none"> • Include how proposed or new strategies, legislative programs, incentive programs, compliance programs, additional resources and/or funding mechanisms support the specific BMPs.
<p>Close the nitrogen gap that remains after full implementation of Pennsylvania’s Phase III WIP that demonstrates only a 75 percent achievement of Pennsylvania’s 2025 nitrogen planning target.</p>	<p>Consider increasing the following BMPs (and strengthening associated planned programs) to help close Pennsylvania’s 9.8 million-pound nitrogen gap:</p> <ul style="list-style-type: none"> ○ Nutrient Application Management Rate, Timing and Placement ○ Animal Waste Management Systems ○ Traditional Cover Crops ○ Pasture Fencing with Forest and Grass Buffers ○ Forest Buffers ○ Wetland Restoration ○ Tree Planting ○ Stormwater Treatment Performance Standards ○ Turf Grass Nutrient Management ○ Stream Restoration
<p>Identify a process for how its Phase III WIP will be revised to accommodate the additional 39 Countywide Action Plans as they are completed and to achieve 100% of the nitrogen reduction planning target by 2025.</p>	<p>Include a programmatic goal within the 2020-2021 milestone period to revise/amend the Phase III WIP to incorporate the additional 39 countywide action plans and to achieve 100% of the nitrogen reduction planning target by 2025.</p>
<p>Identify funding commitments necessary to implement the WIP (i.e. the bottled water tax) but does not indicate which, if any, of the funding options are actively being pursued.</p>	<p>Include programmatic goals within the 2020-2021 milestone period to document how the options are being addressed (including activities and timelines) to achieve 100% of the Phase III WIP planning goals by 2025.</p>
<p>Additional detail on how pollution reducing techniques will be incentivized in the unregulated portion of the stormwater sector and how the trading program will be used to address reductions in this sector.</p>	<p>Include programmatic goals within the 2020-2021 milestone period to document how reductions from unregulated sources will be incentivized, such as Section 319 non-point source funding in areas with approved watershed plans.</p>
<p>Additional information on how Pennsylvania will ensure that all required implementation under the MS4 permits and the Pollution Reduction Plans (PRPs) will be in place before 2025.</p>	<p>Develop milestones that track PRP approval and implementation status for BMPs expected to provide the most significant reductions for the 2020-2021 period.</p>

Additional proposed actions for the stormwater sector in the “Communications and Outreach” and “Funding and Resources” sections of the Phase III WIP and the <i>Progress and Tracking Template</i> .	Develop milestones to describe how Pennsylvania intends to provide outreach and resources to achieve the stormwater BMP implementation levels.
Additional detail regarding the proposed expansion of its Plant Optimization Program.	Include the timeline and plans for the proposed expansion of its Plant Optimization Program.
Additional detail with respect to using trading to achieve the Phase III WIP goals.	Include programmatic goals within the 2020-2021 milestone period to update the agricultural nutrient trading program.

Over the 2020-2021 milestone period, EPA plans to provide the following specific assistance to Pennsylvania to increase the level of confidence and assist with the Commonwealth’s commitment to meet 100% of the nitrogen planning target, subject to the availability of appropriated funds and budget priorities pursuant to the Anti-Deficiency Act, 31 U.S.C. §§ 1341 and 1342:

General

- 1.5 full time equivalents (FTEs or staff) annually to provide technical, managerial and grant administration assistance directly to Pennsylvania and its stakeholders for development of an amendment to the Phase III WIP and the 2020 – 2021 milestones.
- Perform its routine oversight of Pennsylvania’s National Pollutant Discharge Elimination System (NPDES) program through permit reviews, enforcement and compliance assurance.
- Provide annual grant (e.g., Chesapeake Bay Implementation Grant, Chesapeake Bay Regulatory and Accountability Program, Local Government, etc.) and WIP assistance funding to Pennsylvania to support implementation of their Phase III WIP. These grant funds include funding of eight External Coordinators to support the development, implementation, facilitation and administration of the Countywide Action Plans.
- Support Pennsylvania in such actions as targeting practices in counties with greater nitrogen loading. EPA will provide technical assistance, data and tools to aid Pennsylvania 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.
- Track Pennsylvania’s progress with its initiatives, to support the state’s iterative decision-making process.
- Assist Pennsylvania in identifying BMP opportunities and tracking and reporting implementation, especially toward County Action Plans. EPA plans to continue to work with Pennsylvania to refine tools such as Field Doc that integrate locally relevant high-resolution watershed data and provide a platform for streamlined local progress tracking and implementation reporting.
- Continue to work with Pennsylvania to address outstanding unliquidated obligations and ensure effective use of grant funding.
- EPA will support Pennsylvania in refinement of the modeling tools used to evaluate state achievement of the Bay TMDL allocations, where issues are identified.

Agriculture

- Continue to work with and support the Pennsylvania Riparian Forest Buffer Initiative. Funding will be provided directly to the Pennsylvania Department of Conservation and Natural Resources to support this initiative.
- Continue to identify opportunities to coordinate and leverage Federal (EPA and U.S. Department of Agriculture (USDA)), State and private funding to increase agricultural conservation practice implementation in Pennsylvania.
- Continue to support and foster market-based collaboration approaches.
- Support direct implementation of Phase III WIP priority practices and watersheds through grant funding available through the National Fish and Wildlife Foundation.
- Perform outreach and engagement with the agricultural community to foster partnerships and work collaboratively to find successes that improve farming practices and water quality.
- Work with Pennsylvania's Department of Agriculture to develop approaches to measure and account for farmers' conservation efforts and the resulting environmental benefits. Outcomes and methodologies from a joint EPA/USGS/Pennsylvania pilot project to more comprehensively account for farmers' practices while addressing USDA data sharing restrictions could help Pennsylvania better track the progress of its agricultural initiatives.
- Collaborate with PENNVEST and local partners to direct Clean Water State Revolving Fund dollars to agriculture priority practices.
- Conduct inspections to assist Pennsylvania in implementation of its nutrient management initiative, upon request.
- Advance opportunities to provide EPA grant funding directly to Pennsylvania's Department of Agriculture, 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).
- Work with appropriate Pennsylvania agencies to host joint trainings for the agricultural community to ensure effective implementation of Federal and State agricultural regulatory programs and to host EPA trainings for Pennsylvania agencies for delegated programs, upon request.
- Work with Pennsylvania to identify tools and activities to further program compliance and participation and improve communication and support to the agricultural community.

Stormwater

- Conduct NPDES inspector training for state agency staff, upon request.
- Provide technical assistance for the review of Pollution Reduction Plans (PRPs), upon request.
- Review selected annual reports and review BMPs implemented as part of PRPs as part of oversight inspections to determine progress towards meeting MS4 permit requirements.
- Assist Pennsylvania to determine appropriate conditions to include in the 2023-2028 Phase II MS4 general permit to achieve additional nitrogen reductions, as well as phosphorus and sediment.
- Coordinate with the Pennsylvania Department of Environmental Protection to develop options for MS4 communities to work with the agricultural community to implement BMPs outside of the regulated area to achieve urban pollutant reduction goals. To support Pennsylvania, EPA can:
 - Provide MS4 forums in Pennsylvania as an opportunity for local permittees to collaborate and exchange ideas on improved compliance with permit requirements.
 - Conduct green infrastructure workshops
 - Identify projects with the greatest efficiencies in unregulated areas to address reductions needed in that portion of the sector.

- Pennsylvania finalized frequently asked questions in October 2019 that provide flexibilities to MS4 permittees to meet pollutant reductions. Pennsylvania can provide specifics on the incentives it intends to support and how the credits will be used. EPA can review draft policies and rulemakings, and support plans reviews and National Pollutant Discharge Elimination System (NPDES) permits as needed.

Wastewater

EPA will continue to work with the Pennsylvania Department of Environmental Protection (PADEP) and wastewater treatment operators to assist communities and their water utilities with respect to energy efficiency, wastewater nutrient removal optimization, operator training, mapping, and water loss auditing.

Trading and Offsets

EPA can assist Pennsylvania in any revisions to trading and offset programs by reviewing draft regulations, and policies as well as participating on regulatory advisory committees.

Growth

EPA can provide to Pennsylvania 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 Pennsylvania's Phase III WIP. These sections also highlight areas for enhancement to assist Pennsylvania in implementing its Phase III WIP and subsequent two-year milestones to provide confidence that Pennsylvania will have programs and practices in place by 2025 to achieve its Phase III WIP planning targets.

Load Reduction Review

When evaluating Pennsylvania'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 nutrient³ loads to Pennsylvania's 2025 statewide and state-basin Phase III WIP planning targets. In its June 21, 2019 evaluation, EPA noted that Pennsylvania's implementation scenario, which used 2018 flows for wastewater treatment plants to represent 2025 conditions in its Phase III WIP, was not reflected in its draft Phase III WIP. This error was corrected in the Phase III WIP.

In the Phase III WIP document, Pennsylvania states that it "commits to have all practices and controls in place by 2025 necessary to achieve the Phase III WIP for phosphorus and nitrogen." However, simulations indicate that full implementation of Pennsylvania's WIP is expected to achieve 100% of the statewide and state-basin (Susquehanna, Potomac, Eastern Shore and Western Shore) Phase III WIP planning targets for phosphorus and 75% of nitrogen. State-basin targets were met for phosphorus and any excess was exchanged to address some nitrogen.⁴ The state-basin target for nitrogen was met in the

³ Phase III WIP planning targets for sediment were developed by the CBP partnership after the Phase III WIP submittal. Pennsylvania 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.

⁴ 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. Any adjustments to the state-basin planning targets must still result in all 92 Chesapeake Bay

Western Shore. However, modeling simulations indicates that the plan will not achieve nitrogen targets in the Susquehanna, Potomac, or Eastern Shore basins.

Pennsylvania proposes to achieve most of its pollutant reductions by implementing BMPs in the agricultural sector: 92% for nitrogen and 72% for phosphorus. Pennsylvania plans to maintain the progress it has made in pollutant reductions from the wastewater sector. Pennsylvania proposes the remainder of the pollutant reductions to come from existing programs for stormwater management and the natural sector which includes preservation of forests and wetlands and controls on stream bed and bank loads. Finally, Pennsylvania's Phase III WIP addresses each of the additional changing and local conditions identified by the CBP partnership.

Source Sectors

Agriculture

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania committed to initiate implementation of the Pennsylvania Ag Conservation Stewardship program by January 2020 which will recognize producers who document, with proper verification, practices demonstrating compliance with state regulatory requirements as well as all recommended Phase III WIP practices applicable to their operations.
- Pennsylvania performed extensive outreach to solicit recommendations from Pennsylvania's agricultural leaders from the farming community, land grant university, and key agricultural organizations.
- Pennsylvania communicated the recommendations of Pennsylvania's agricultural workgroup members to the larger agriculture community to solicit their input and refinements.
- Pennsylvania incorporated technical and financial resource recommendations from Pennsylvania in the Balance Conferences such as a "Center for Water Quality Excellence" for technical assistance and expansion of the Resource Enhancement and Protection (REAP) Program.
- Pennsylvania is investing in improving the tracking, verification, and reporting of BMP implementation.
- Pennsylvania identified the funding levels associated with BMP implementation and the financial and technical assistance resources and staff needed to support implementation.
- Pennsylvania commits to issue NPDES permits to 100% of all Concentrated Animal Feeding Operations (CAFOs).

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

- Pennsylvania identified lead organizations in the Phase III WIP and in the *Progress and Tracking Template*.
- Pennsylvania provided a conceptual graphic of Pennsylvania's nutrient reduction plan to achieve the nutrient reduction planning targets.
- Pennsylvania noted additional Agriculture Erosion and Sediment Control guidance will be finalized in 2019.

segments achieving the respective jurisdictions' Chesapeake Bay water quality standards under Phase 6 Chesapeake Bay airshed, watershed, and estuarine water quality/sediment transport model simulated conditions.

Enhancements

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

- Provide more details on the actions and initiatives, such as funding, staff, legislation, program refinements and regulatory changes to meet the strategies included in the Phase III WIP and to achieve the proposed agriculture implementation levels.
- Develop and include more detailed information on development, enhancement and implementation of the following initiatives: partnering with NGOs on voluntary conservation, market-based approaches, pay for performance approaches, public-private partnerships, and improving regulatory compliance.
- Pennsylvania identified a proposal to modify the Agriculture Erosion and Sediment Control Regulations; EPA recommends that Pennsylvania explain how or when this modification would occur.

Stormwater

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania included additional programs to improve tracking and reporting of erosion and sediment control practices to achieve the phosphorus reduction targets and to help meet the sediment reduction targets.
- Pennsylvania provided detailed staffing and funding numbers for multiple state agencies to show what additional resources are needed to meet its restoration goals. The Phase III WIP also discusses proposals to maintain a dedicated funding source for Chesapeake Bay restoration.
- Pennsylvania proposed fertilizer legislation that would reduce nitrogen and phosphorus runoff to the Chesapeake Bay.
- Pennsylvania solicited feedback from the public and other stakeholders in the Phase III WIP process, including through a dedicated stormwater workgroup in preparing the Phase III WIP.
- Pennsylvania commits to updating its Stormwater BMP Manual, which will include updated calculations for BMPs related to water quality, rate, and volume.
- Pennsylvania commits to prioritizing Act 167 compliance and enforcement and will undertake education and outreach related to the benefits of implementing the Act.
- Pennsylvania commits to improve reporting and verification procedures. The new Pennsylvania verification strategy fills a gap for the urban sector with new verification procedures, as well as the pending improvements to the BMP Warehouse and Practice-Keeper reporting systems, that will support Pennsylvania Municipal Separate Storm Sewer Systems (MS4s) communities.
- Pennsylvania emphasized practices that provide strong local co-benefits⁵. For example, Pennsylvania envisions about 12 miles of stream restoration per year, and thousands of acres of reforestation, buffers and urban tree canopy. These practices are also cost-effective and work best in the rural and suburban areas of the Chesapeake Bay watershed.

⁵ Co-benefits are those that not only result in water quality improvements but could address other 2014 Chesapeake Bay Watershed Agreement Outcomes (e.g., environmental problems, wetlands, or forest buffers), local water quality benefits, as well as economic and ecosystem services benefits generated from restoration activities.

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

- Pennsylvania committed to develop technical guidance, intended to supplement existing requirements, to inform industrial stormwater discharge permittees of appropriate BMP utilization, design standards and implementation to reduce pollution from industrial stormwater.
- Pennsylvania committed to implement the Pennsylvania Department of Transportation (PennDOT) and Pennsylvania Turnpike Commission MS4 permits in concert with the other MS4 permits by 2023.
- Pennsylvania commits that all PRPs will be approved by 2020 and all BMPs will be implemented by 2025.

Enhancements

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

- Provide further detail (e.g., new strategies, legislative programs, incentive programs, compliance programs, and/or funding mechanisms) to support how it will achieve the BMP implementation rates of the nutrient reductions from the stormwater sector.
- Propose actions for the stormwater sector in the “Communications and Outreach” and “Funding and Resources” sections of the Phase III WIP and the *Progress and Tracking Template*; and Pennsylvania should describe how it intends to achieve the anticipated BMP implementation levels.
- Clarify how its trading program for the MS4 community will be incentivized and from where generated credits will be purchased.

Wastewater

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania included cap loads for all significant sewage and industrial waste dischargers in their respective NPDES permits.
- Pennsylvania is on track to meet the 2025 goals without further enhancements beyond biological nutrient removal (BNR).
- Pennsylvania made significant investment on the part of WWTP to upgrade their facilities to BNR (with some treating between BNR and enhanced nutrient removal (ENR)) to meet pollutant reduction goals.
- Pennsylvania considered some options for additional reductions in this sector such as WWTP optimization and tracking of onsite septic system inspection and pumping programs.

Enhancements

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

- Include details for their proposed expansion of its Plant Optimization Program.

Trading & Offsets

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania continued monitoring for WWTP growth through the Pennsylvania Chapter 94 required planning process.

Enhancements

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

- Consider updating its discussion of the Agricultural Nutrient Trading Program in the Phase III WIP including a discussion of the interim policy added to the PADEP Nutrient Trading website.

Federal Facilities

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania engaged in strong collaboration with the Department of Defense (DoD).
- Pennsylvania continues to participate in meetings of the CBP partnership's Federal Facilities Workgroup.

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

- Pennsylvania described the method used to calculate federal planning goals.
- Pennsylvania participated in resolution of any issues regarding the methodology of DoD's federal planning goals and to translate any changes in the calculation method to other federal agencies with Pennsylvania facilities (e.g., USGS, and General Services Administration).

Enhancements

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

- Describe the overall footprint of federal facilities (e.g., number of facilities and number of acres) in its portion of the Chesapeake Bay watershed.

Changing and Local Conditions

Growth

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania developed its implementation scenarios based on 2025 forecasted growth conditions, per the CBP partnership decision.
- Pennsylvania developed and refined its Land Policy BMP that is focused on land conservation activities which will reduce nitrogen to the Bay.
- Pennsylvania provided a framework to offset growth, which will be evaluated, tracked, and reported in two-year milestones, including conserving and protecting wetlands; implementing conservation practices and limiting development in riparian areas; modernizing local planning and zoning to conserve critical forests and habitats; and preserving farmland as part of a holistic approach to conserving working lands.

- Pennsylvania described sector-level growth trajectories which establish a baseline for Pennsylvania's strategies to reduce pollutants from growth.

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

- Pennsylvania provided additional estimates predicting how effective its septic inspection and pumping programs will be in addressing growth, since septic system loads comprise nearly 25% of expected growth in load from the developed sector and these programs are not currently being tracked.

Enhancements

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

- Describe how it will track new sediment and nutrient loads to ensure that the Phase III WIP planning targets are not exceeded.
- Pennsylvania is projecting a shift in the land use between 2017 and 2025 due to projected sector growth that is included in the CBP partnership's Chesapeake Assessment Scenario Tool. EPA recommends that Pennsylvania explain how it will maintain implementation levels necessary to address changes in loads from the stormwater sector.

Climate

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania documented its jurisdiction-specific 2025 numeric climate change loads based on factors such as increasing precipitation and rising sea level in the Phase III WIP document.
- Pennsylvania is working with Pennsylvania State University (PSU) to develop and update a study on the impact of climate change in Pennsylvania specifically focusing on water quality impacts.
- Pennsylvania outlined the actions and strategies it has undertaken to address climate change in recent years.

Local Engagement Strategies

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania conducted outreach and community engagement efforts to develop the Phase III WIP. Hundreds of watershed stakeholders were involved in the Phase III WIP development process to assess barriers to watershed implementation and devise creative strategies to overcome them.
- Pennsylvania identified necessary resources for an agency support team that will work in a phased approach to continue the development of the County Action Plans. As the County Action Plans are completed, these technical resources will transition into assisting counties with implementing the county plans to achieve the Phase III WIP goals.
- Pennsylvania clearly defined current local stakeholders as well as plans to identify future local stakeholders throughout the remaining counties.

- Pennsylvania developed and implemented an extensive communication and engagement plan throughout the development of the Phase III WIP.
- Pennsylvania engaged stakeholders through large public venues, social media, and individual outreach mechanisms.
- Pennsylvania commits to providing programmatic progress updates using the *Progress and Tracking Template* every six months via the Pennsylvania Chesapeake Bay WIP website.

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

- Pennsylvania explained how outreach will continue after the Phase III WIP is finalized.
- Pennsylvania provided additional facilitation, technical and staff resources to support the local engagement process across non-pilot counties.

Local Planning Goals

Key Strengths

Key strengths in the Phase III WIP include:

- Pennsylvania developed local planning goals that are measurable and below the major state-basin scale, following CBP partnership decisions, by developing numeric load reduction goals at the county level across the entire Chesapeake Bay watershed portion of Pennsylvania.
- Pennsylvania provided detailed information on how local planning goals were developed.
- Pennsylvania demonstrated a commitment to continue to engage with local partners moving into Phase III WIP implementation in counties that already have plans, as well as the remaining counties.
- Pennsylvania developed methods by which to track and report progress from counties and has demonstrated a commitment to work with the CBP partnership on refining these methods and tools.
- Pennsylvania maintained focus on local water quality improvement.
- Pennsylvania provided a mechanism to follow the status of the new program initiatives over the next several years which will be a useful tool in analyzing future submissions for milestones and progress.
- Through the pilot County Action Plan efforts in Lancaster, York, Adams, and Franklin Counties, Pennsylvania provided a comprehensive road map for the counties in the watershed and represented an effective use of targeting areas for pollutant reduction practices. Should the proposed state funding initiative materialize, the countywide action plan rollout to the Tier 2, 3, and 4 counties would accelerate the pace of BMP implementation going forward.
- Pennsylvania compiled applicable resources and materials for their local partners, such as the Community Clean Water Guide and action plan templates.

Enhancements

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

- Identify a process for how its Phase III WIP will be revised or amended to accommodate the additional 39 Countywide Action Plans as they are completed.
- The Phase III WIP states that any additional reductions needed will be achieved through the completion of the remaining Countywide Action Plans and statewide initiatives and activities that

have yet to be quantified. Since the four pilot Countywide Action Plans did not result in fully meeting their targets, EPA recommends that Pennsylvania identify a process for how the remaining counties will meet their targets, including a contingency plan in case the non-pilot counties cannot make up for that gap to achieve the Phase III WIP planning targets by 2025.

Other Comments

Key Strengths

Key strengths in the Phase III WIP includes:

- The Phase III WIP focuses on “local benefits” and the benefits discussed in the Countywide Action Plans heavily overlap with co-benefits and the 2014 Watershed Agreement. EPA encourages Pennsylvania to continue its focus on local solutions and implementation to achieve its Phase III WIP planning targets.

Enhancements

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

- Pennsylvania’s Phase III WIP identifies the funding necessary to implement the WIP and lists several options for generating the necessary funds through dedicated funding sources (i.e. the bottled water tax) but does not indicate if any of the options are actively being pursued. EPA recommends that Pennsylvania clarify what commitments are being made and how establishment of a dedicated funding source for water quality improvements will be achieved.
- Pennsylvania has made commendable commitments within the *Progress and Tracking Template*. The Phase III WIP would be strengthened by adding linkages and details contained in the supplemental documents to more effectively communicate the actions and plans. EPA recommends that Pennsylvania’s current gap analysis include more specificity, which is a strength of the supplemental documents. A clear cross-reference would greatly assist the reader to understand everything Pennsylvania partners have developed.

BMP Verification

- Jurisdictions agreed to follow CBP partnership-approved BMP verification protocols when developing and implementing the Phase III WIPs. Because Pennsylvania is proposing to increase BMP implementation rates of some BMPs by 10-fold or more in the next seven years, EPA recommends that the Commonwealth 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 another method established by the CBP partnership.
- The draft BMP verification plan included with the Phase III WIP materials suggests that many programs and BMPs “potentially” have resources for verification. EPA recommends that the resources for verification or opportunities to secure those resources be identified in the Phase III WIP and *Progress and Tracking Template*.