

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

Executive Summary

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

Maryland engaged a diverse group of local agricultural partners, including the conservation districts and non-governmental organizations in developing its Phase III WIP. The state also invested in a thorough verification program that accounts for Best Management Practices (BMPs) implemented historically to the present. Maryland's plan to achieve additional reductions in the wastewater sector to allow for basin-to-basin nutrient load exchanges also demonstrates efficiency. Maryland's also emphasized "locally-driven" strategies and co-benefits¹ that heavily overlap with those benefits in the 2014 Watershed Agreement.

Maryland's plan meets its numeric planning targets for nitrogen and phosphorus at the state and state-basin levels through the submission of BMPs and wastewater reductions. Maryland's plan provides confidence in its narrative submission (i.e., adequate funding and programs) that it will attain the necessary load reductions by 2025 through the suite of BMPs and wastewater reductions proposed. The associated level of confidence could be enhanced as further detailed in this evaluation.

In its evaluation of the Phase III WIP, EPA identified that Maryland will meet its planning targets and its commitment through high rates of BMP implementation. In its Phase III WIP, Maryland identified six specific BMPs that account for 77% of the WIP nitrogen load reduction moving forward. To provide further confidence the planned load reductions will occur, Maryland's Phase III WIP could have included detailed explanations about how Maryland will strengthen these practices and programs, including the inspection and maintenance of the BMPs already implemented. This could be addressed through development of specific and detailed numeric targets for BMP implementation in selected source sectors. EPA recommends that Maryland include 2-year numeric BMP implementation targets for these six practices as part of its programmatic milestones.

¹ 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.

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

Overview

In reviewing Maryland's Phase III WIP, EPA found many areas in which the state addressed the goals of the Bay TMDL and the additional expectations set by the CBP partnership. Using the CBP partnership's suite of modeling tools, simulations indicate that full implementation of Maryland's plan is expected to achieve 100% of the statewide and state-basin (Eastern Shore, Western Shore, Potomac, Patuxent, and Susquehanna) Phase III WIP planning targets for nitrogen and phosphorus. State-basin targets were met through basin-to-basin exchanges.²

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, Maryland committed to address the sediment targets approved by the CBP partnership and to provide an addendum to its Phase III WIP once the CBP partnership 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 notable strengths identified in the Phase III WIP include:

² 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 Maryland 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.

- Engagement of local agricultural partners, including the conservation districts and non-governmental organizations, to increase voluntary participation in implementing conservation practices.
- Investment in a thorough verification program that accounts for BMPs implemented historically up to the present.
- Creation of three programs to incentivize publicly owned treatment works (POTWs) to achieve concentrations lower than 4 milligram/liter (mg/L) of total nitrogen in wastewater effluent – Bay Restoration Fund (BRF) Operations and Maintenance Grants, the Clean Water Commerce Act, and the Water Quality Trading Program with a goal of achieving 3.25 mg/L by 2025.
- Emphasis on “locally-driven” strategies and co-benefits that heavily overlap with those benefits in the 2014 Watershed Agreement.
- Additional information on the role of federal agencies in Phase I and Phase II Municipal Separate Storm Sewer Systems (MS4) permit coordination, as well as further detail on federal agency programmatic and numeric commitments.
- Resolution in the Phase III WIP of the discrepancy between the planned reductions in the agricultural and wastewater sectors.

EPA’s review also noted potential enhancements that could increase confidence that Maryland’s Phase III WIP will attain the 2025 goals. These enhancements include:

- Maryland can provide further information (e.g., new strategies, legislative programs, incentive programs, compliance programs, funding mechanisms, etc.) on how it will achieve, by 2025, implementation rates of those BMPs that are much higher than current rates in the agricultural and stormwater sectors.
- Maryland can provide more detail on how it is targeting funding toward implementing priority agricultural conservation practices in priority nutrient loading areas, and whether there is adequate funding to fully implement the agricultural conservation practices called for in the Phase III WIP.
- Maryland could provide programmatic commitments (e.g., new strategies, programs, policies, and/or funding mechanisms) for those practices being reported for the first time (e.g., capture and reuse and dairy precision feeding) to better understand how implementation goals will be achieved by 2025.
- Although Maryland identified capacity and resource gaps for practice and program implementation in the agriculture and stormwater sectors, Maryland could provide a clear strategy for how to address these gaps and to deliver increased levels of technical assistance to meet its goals— particularly for the unregulated communities in these sectors.

EPA Oversight and Assistance³

As it has done since the release of the Bay TMDL, EPA will continue to commit staff, contractual, and funding resources to support the implementation of Maryland’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 Maryland’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 Maryland on WIP and

³ 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.

two-year milestone implementation to reduce pollution from federal lands. EPA will continue its commitment to track annual progress of Maryland 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>]

In our role to help Maryland improve its accountability to the CBP partnership in meeting its commitment to the 2025 goals, EPA recommends the following be included in Maryland's 2020-2021 milestones:

Recommended Enhancements to the Phase III WIP (See Detailed Review)	Recommended Actions
Additional information to increase confidence that practices that account for the majority of nitrogen load reductions will be implemented.	<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"> • Cover Crop (Wheat Normal Distilled) • Tillage Management-Continuous High Residue • Animal Waste Management Systems • Soil Conservation and Water Quality Plans • Grass Buffers • Nutrient Management Core Nitrogen
Additional information to support significant increases in implementation for agricultural and stormwater practices without supporting documentation and funding needs (WIP calls for 10-fold increase in implementation in some cases, a 52% reduction in agriculture nitrogen load since 2009, and a reversal in the 30-year trend of increasing urban/suburban stormwater loads).	<ul style="list-style-type: none"> • Develop specific programmatic milestones within the 2020-2021 milestone period for its key agricultural and urban/suburban stormwater WIP initiatives. • Develop milestones that link specific programs or strategies with BMP implementation increases for the 2020-2021 period for BMPs expected to provide the most significant load reductions. • Provide information how its proposed or new strategies, legislative programs, incentive programs, compliance programs, additional resources and/or funding mechanisms support specific BMPs and any contingencies for funding should there be gaps.
Additional information on several agricultural BMPs identified as priorities for implementation.	Provide more detail on how it is targeting funding toward implementing these priority agricultural conservation practices in priority nutrient loading areas, and whether there is adequate funding.
Supporting documentation on accelerating reductions in the stormwater sector given that excess	Develop numeric goals and programmatic milestones – beginning with the 2020-2021 milestones – to demonstrate

capacity in the wastewater sector will not continue to close the urban gap post-2025.	how implementation in the stormwater sector will increase over time to meet its pollutant load reduction goals.
Supporting documentation on how regulatory tools will be used to ensure compliance with MS4 permits, particularly for those Phase II MS4s that are expected to meet the 20% restoration requirement for the first time.	Develop programmatic milestones to demonstrate how its compliance and enforcement programs – including the financial assurance plans – will ensure load reductions are achieved in the regulated stormwater sector.
Supporting documentation on how BMPs will be incentivized and implemented in the unregulated portion of the urban/suburban stormwater sector.	Include programmatic goals within the 2020-2021 milestone period to document how reductions from unregulated sources will be incentivized.
A strategy for how growth post-2025 will be offset – particularly in the stormwater sector.	Include specific milestones for the 2020-2021 period on its development of an adaptive growth policy.
Supporting information on who and how the list of county-level BMPs will be implemented between 2019-2025.	Maryland should include specific milestones for the 2020-2021 period to clearly articulate how these county-level BMPs will be implemented on an annual basis and by whom.

Over the 2020-2021 milestone period, EPA plans to provide the following specific assistance to Maryland to increase the level of confidence in achieving the current Phase III WIP goals:

General

- Provide annual grant (e.g., Chesapeake Bay Implementation Grants, Chesapeake Bay Regulatory and Accountability Program grants, Local Government funding, etc.) and WIP assistance funding to Maryland to support implementation of its Phase III WIP.
- Assist Maryland in such actions as targeting practices in higher loading counties and in specific segment sheds. EPA plans to continue to provide technical assistance, data and tools to aid Maryland 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 Maryland's progress with its initiatives to support the state's iterative decision-making process.

Agriculture

- Continue to work with Maryland to provide targeted financial assistance, if available, to support its agricultural initiatives.

- Continue to work with Maryland’s Department of Agriculture (MDA) to develop approaches to measure and account for farmers’ conservation efforts and the resulting environmental benefits.
- Continue to identify opportunities to coordinate and leverage federal (EPA and United States Department of Agriculture), state, and private funding to increase agricultural conservation practice implementation in Maryland.
- Work to advance opportunities to provide grant funding directly to MDA, 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 MDA 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 MDA for delegated programs, upon request.

Stormwater

- Conduct National Pollutant Discharge Elimination System (NPDES) state inspector training for state agency staff, upon request.
- Provide technical assistance for the review and approval of MS4 restoration plans and financial assurance plans, upon request.
- Review selected annual reports and review BMPs implemented as part of the MS4 restoration plans as part of oversight inspections to determine progress towards meeting MS4 permit requirements.
- EPA can, if requested:
 - Provide MS4 forums as an opportunity for local permittees to collaborate and exchange ideas on improved permitting and compliance.
 - Conduct green infrastructure workshops.
 - Recommend projects to prioritize in unregulated areas to address reductions needed in that portion of the sector.
- Aid in reviewing draft policies and rulemakings related to nutrient trading and offsetting to address the reductions required in the MS4 permits once Maryland provides specifics on the incentives it intends to provide and how the credits will be used.

Wastewater

- Assist Maryland, as requested, with nutrient optimization and compliance assistance in this sector.

Trading and Offsets

- Continue to provide oversight and input into Maryland’s trading and offset program by reviewing draft regulations, policies, and NPDES permits as well as participate on technical advisory committees.

Growth

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

Detailed Evaluation of Overall Load Reduction and Source Sectors

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

Load Reduction Review

When evaluating Maryland's Phase III WIP numeric commitments, EPA modeled implementation scenarios submitted by the state through the CBP partnership's Phase 6 suite of modeling tools and compared those simulated nutrient⁴ loads to Maryland's 2025 statewide and state-basin Phase III WIP planning targets.

Simulations using that scenario indicate that full implementation of Maryland's plan is expected to achieve 100% of the statewide and state-basin (Eastern Shore, Western Shore, Potomac, Patuxent, and Susquehanna) Phase III WIP planning targets for nitrogen and phosphorus. State-basin targets were met through basin-to-basin exchanges.⁵

Maryland proposes to achieve its pollutant reductions by implementing BMPs in the agriculture (52%) and wastewater (42%) sectors. Maryland also proposes to shift reductions between sectors through enhancement and implementation of its existing program for nutrient trading and offsetting. Finally, Maryland's Phase III WIP addresses each of the additional changing and local conditions identified by the CBP partnership.

Agriculture

Key Strengths

Key strengths in the Phase III WIP include:

- Maryland demonstrated engagement of local agricultural partners, including the conservation districts and non-governmental organizations, to increase voluntary participation in conservation practices.
- Maryland has a dedicated state agriculture cost share program in place that is targeted towards priority BMPs.
- Recommendation of an in-depth financial analysis in the near term to confirm Maryland's fiscal capacity to achieve its agricultural goals.
- Maryland demonstrated strong coordination between MDA and the U.S. Department of Agriculture National Resources Conservation Service to fund priority agricultural conservation practices.
- Maryland has a strong, targeted compliance assurance program within MDA to ensure farmers are properly implementing plans; animals are excluded from streams and stream buffers are in place; compliance with winter spreading restrictions; and progress in implementing supplemental nutrient management practices.
- Maryland invested greatly in a thorough verification program that accounts for BMPs implemented historically up to the present.
- Maryland developed the Healthy Soils Initiative focused on accelerating educational outreach and promotion of a wide variety of agricultural and climate management co-benefits.

⁴ Phase III WIP planning targets for sediment were developed by the CBP partnership after the Phase III WIP submittal and Maryland 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.

⁵ 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 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 Maryland address the following in its 2020-2021 programmatic milestones to satisfy its CBP partnership commitments:

- Accelerate nitrogen reductions in the agricultural sector to provide greater confidence to the CBP partnership that sustained funding, increased technical capacity, and BMP implementation will be realized. Examples include:
 - Development, enhancement, and implementation of the following initiatives: partnering with non-governmental organizations on voluntary conservation, market-based approaches, pay for performance approaches, public-private partnerships, and improving regulatory compliance.
 - New strategies, legislative programs, incentive programs, compliance programs, and/or funding mechanisms to support how Maryland will achieve, by 2025, implementation rates of those BMPs that are much higher than current rates, such as livestock waste management systems, grass buffers, nutrient application management core nitrogen and phosphorus, forest buffers, and conservation tillage.
 - New strategies, legislative programs, incentive programs, compliance programs, and/or funding mechanisms for those practices that Maryland is reporting for the first time (e.g., capture and reuse and dairy precision feeding) to better understand how implementation goals will be achieved by 2025.
- For the several agricultural BMPs identified as priorities for implementation, provide more detail on how it is targeting funding toward implementing these priority agricultural conservation practices in priority nutrient loading areas, and whether there is adequate funding to fully implement the agricultural conservation practices called for in the draft Phase III WIP. For example, Maryland estimates a need of \$54.2 million per year to achieve the agricultural commitments. It is unclear what portion of funding listed in Table 12 of the draft Phase III WIP would go to agriculture and if it would fully fund the need of \$54.2 million per year.
- Provide clarification on whether any agricultural implementation is tied to its Agriculture Certainty Program, since adoption and growth of that program has been challenging.

Stormwater

Key Strengths

Key strengths in the Phase III WIP include:

- Approximately 90% of Maryland's developed land is covered by NPDES permits, which provides some level of confidence that reductions can be achieved in this sector over time.
- Maryland recommends that a financial analysis be conducted to confirm sufficient resources are in place to achieve urban/suburban stormwater goals.
- Maryland established dedicated funding mechanisms to support the work of several Phase II MS4s, including Gaithersburg, Rockville, Salisbury, and Takoma Park.
- Maryland modified its MS4 permits to enable permittees to use nutrient trading to achieve pollutant reductions in the urban/suburban stormwater sector to drive innovation across sectors.
- Maryland created two new programs (Clean Water Commerce Act and Water Quality Trading Program) to potentially fund projects in non-regulated MS4 areas.
- Maryland established several programs to assist communities lacking in staffing and technical expertise. For example, grant funding is being used to support five Sea Grant Extension Watershed Specialists and a Regional Watershed Services Manager.

Enhancements

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

- Provide further information (e.g., new strategies, legislative programs, incentive programs, compliance programs, funding mechanisms, etc.) on how it will achieve, by 2025, implementation rates of those BMPs that are much higher than current rates, such as stormwater treatment performance standard, extended dry ponds, infiltration practices, erosion and sediment control, and street sweeping.
- Provide additional information on how implementation in the stormwater sector will increase over time to meet its pollutant load reduction goals. This is consistent with Maryland's recognition that accelerated reductions in the wastewater and agriculture sectors, currently being used to account for the load reduction gap in this sector, will be difficult to sustain post-2025.
- Maryland asserts that regulatory tools are backed by effective compliance and enforcement programs that can implement legal backstops to ensure restoration progress. EPA recommends that Maryland provide additional information on how these regulatory tools will be used in the future to ensure compliance.
- Develop a timeline for when Maryland's *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated* guidance document will be completed, since this document is currently being updated.
- Provide more detail on how the Phase II MS4 permittees will achieve the 20% restoration requirement, given that this is the first permit cycle with this requirement included.
- Provide additional information (e.g., voluntary programs, funding, technical assistance, etc.) for those BMPs to be implemented on 400 acres of non-regulated urban lands to increase confidence that this goal will be achieved.
- Provide additional detail on a strategy for enhancing technical assistance delivery in both regulated and non-regulated stormwater. While each county conducted a feasibility analysis to outline implementation that they feel can be achieved by 2025, not much detail was provided as to how this analysis was conducted or how specific BMPs were selected.

Wastewater and Septic Systems

Key Strengths

Key strengths in the Phase III WIP include:

- Commitment to complete BRF Enhanced Nutrient Removal (ENR) upgrades to 67 significant municipal wastewater plants by 2025.
- Maryland continues funding for ENR upgrades for non-significant municipal plants through the BRF.
- Maryland created three programs to incentivize POTWs to achieve concentrations lower than 4 mg/L of nitrogen in wastewater effluent – BRF Operations and Maintenance Grants, the Clean Water Commerce Act, and the Water Quality Trading Program with a goal of achieving 3.25 mg/L by 2025.
- Commitment to implement a multi-pronged septic strategy, including continued implementation of septic upgrades through its BRF Septic Fund.
- Maryland passed legislation that makes funding available to county governments that adopt Septic Stewardship Plans.

- Maryland reconciled the discrepancy between planned reductions in the agricultural and wastewater sectors through the final implementation scenario and narrative description.

Trading & Offsets

Key Strengths

Key strengths in the Phase III WIP include:

- Maryland incentivized higher wastewater treatment levels (below 3.0 mg/L of total nitrogen) through water quality trading and the Clean Water Commerce Act through 2021.
- Maryland provides flexibility to MS4 permittees to meet a portion of their restoration requirements through water quality trading.

Enhancements

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

- Further explain whether there are sufficient state resources to administer the MS4 trading program.
- Provide further detail on whether there are tools (e.g., online market place with applications and registration processes) to support the MS4s if trading occurs.

Federal Facilities

Key Strengths

Key strengths in Phase III WIP include:

- Maryland demonstrated strong collaboration between Maryland Department of the Environment and Department of Defense (DoD).
- Maryland included the DoD narrative in Appendix E of its Phase III WIP document.
- Maryland has been an active participant on the CBP partnership's Federal Facilities Workgroup.
- Maryland provided additional detail on the role of federal agencies in Phase 1 and Phase II MS4 permit coordination.
- Maryland submitted additional information on federal agency programmatic and numeric commitments.

Changing and Local Conditions

Growth

Key Strengths

Key strengths in the Phase III WIP include:

- Maryland developed its implementation scenarios on 2025 forecasted growth conditions, per the CBP partnership decision, including local land use preservation and protection programs in a Conservation Plus scenario.
- Maryland provided a description of its Land Policy BMPs and applied them to reduce nitrogen loads by an additional 85,000 pounds in the Phase III WIP.
- Maryland extensively collaborated with Maryland Department of Planning and Department of Natural Resources in the development and selection of its Land Policy BMPs.
- Maryland identified the need to maintain reductions post-2025.

Enhancements

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

- Provide further detail on its planned implementation of an adaptive growth policy to revisit sector-loading trends and offsets to remain under the Phase III WIP planning targets.

Climate

Key Strengths

Key strengths in the Phase III WIP include:

- Maryland documented its jurisdiction-specific 2025 numeric climate change loads in the Phase III WIP document, noting its commitments to address those loads starting with the 2022-2023 milestones.
- Maryland provided a comprehensive inventory and associated descriptions of the state and local action plans and strategies to address climate change.
- Maryland commits to designing and siting BMPs that are expected to persist and perform in a changing climate.
- Maryland established the Maryland Climate Leadership Academy to advance the capacity of state and local government agencies, infrastructure organizations, and businesses.
- Maryland commits to establish an emergency dam repair fund and revolving loan dam fund for maintaining critical stormwater infrastructure and dams in response to climate change.
- Maryland commits to explore potential changes to its erosion and sediment control and stormwater programs based upon the outcome of research into how changes in precipitation affect design storms.

Local Engagement Strategies

Key Strengths

Key strengths in the Phase III WIP include:

- Maryland clearly defined and engaged stakeholders for involvement in Phase III WIP implementation, including county and municipal-level staff, MS4 permittees, soil conservation district staff, local elected officials, and agricultural community leaders.
- Maryland specified lead agencies and organizations for continued local engagement across source sectors, including the importance of utilizing “trusted messengers” to support implementation efforts in the non-regulated stormwater sector.
- Maryland provided information on opportunities across source sectors to engage in Phase III WIP implementation, including targeted education and outreach events.
- Maryland documented capacity and technical assistance gaps and needs by local partners to advance Phase III WIP implementation.
- Maryland provided examples of successful working relationships and models (e.g., Maryland Sea Grant Extension’s watershed restoration specialists and the Maryland Association of Counties) to support Phase III WIP implementation.

Enhancements

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

- Provide additional information (e.g., programmatic commitments) on how BMP strategies under each of the county-level plans were developed and planned to be implemented. For example, some plans emphasize a single BMP (e.g., stream restoration), while others have multiple BMPs.
- Provide more information on proposed strategies to address cited local capacity needs and resource challenges (e.g., BMP maintenance, verification, funding, programs, and accounting) by local partners.

Local Planning Goals**Key Strengths**

Key strengths in the Phase III WIP include:

- Maryland developed local planning goals that are measurable and below the major state-basin scale (i.e., county scale and number of BMPs to be implemented and associated load reductions), following the CBP partnership decision.
- Maryland clearly documented points of engagement with local partners throughout the development of local planning goals.
- Maryland committed to tracking local implementation progress through two-year milestones and annual progress reporting to the CBP partnership.

Enhancements

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

- Further clarify its key local partners responsible for implementing the BMPs reflected in the county-level plans.
- Define the specific tool and process to be used to track and report achievement of local planning goals through the two-year milestones and annual progress submissions.

Segment-shed Goals for the Tidal Jurisdictions**Key Strengths**

Key strengths in the Phase III WIP include:

- Maryland addressed segment-shed goals and targeting in the “Targeting of Impaired Bay Segments” section of Appendix F of Maryland’s Phase III WIP document.
- Maryland identified only 17 out of 57 tidal segments with dissolved oxygen (DO) impairment exceedances above 1% for summer, open water DO criteria, which targets those segments that are estimated to have the highest non-attainment of water quality standards. Maryland targets greater nitrogen reductions in these segments compared to the average reductions across the other tidal segments.

Enhancements

EPA recommends that Maryland address the following in its 2020-2021 programmatic and numeric milestones to satisfy its CBP partnership commitments:

- Maryland could target implementation in the most impaired segments. For example, the Pocomoke Tidal Fresh is by far the most out of attainment of water quality standards, but only 15% nitrogen reductions are planned. This segment-shed influences not only the Pocomoke Tidal Fresh tidal segment, but also downstream tidal segments, such as the impaired Pocomoke Oligohaline.
- Maryland could explore more opportunities in other sectors beyond wastewater for potential nitrogen reductions in the targeted segment-sheds.

BMP Verification

Jurisdictions agreed to follow CBP partnership-approved BMP verification protocols when developing and implementing the Phase III WIPs. Because Maryland is proposing to increase BMP implementation rates of some BMPs by 10-fold or more in the next six years, the state 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.