

I. Introduction

Chesapeake Bay restoration has been a priority for the State of Maryland, its citizens, and Chesapeake Bay watershed jurisdictions since the foundation of the Chesapeake Bay Program (CBP) in 1983 and signing of the first watershed restoration agreement. By the mid-1990s, jurisdictions were still not meeting Chesapeake Bay's water quality standards, and it was designated as impaired under the federal Clean Water Act (CWA) framework. Leaders across the watershed signed an updated Bay agreement in 2000, including state governors, the Mayor of the District of Columbia, the EPA Administrator, and the Chair of the Chesapeake Bay Commission. This updated agreement committed to "correct the nutrient and sediment-related problems in the Chesapeake Bay and its tidal tributaries"⁶ sufficient to remove it from the federal list of impaired waters by 2010. Jurisdictions also agreed that if these voluntary commitments were not sufficient to restore the Bay by 2010, the CBP partnership would pursue the regulatory CWA approach and develop a Total Maximum Daily Load (TMDL). In the late 2000s, when it became clear that the voluntary water quality agreement had not fully restored the Bay, the CBP partnership transitioned to the regulatory CWA framework and began developing the Chesapeake Bay TMDL.

The TMDL quantifies how much pollution, specifically nitrogen, phosphorus, and sediments must be reduced to achieve Chesapeake Bay water quality standards. Water quality standards are the regulatory requirements (e.g., dissolved oxygen, water clarity - see COMAR 26.08.02.03-3⁷) that the Chesapeake Bay must meet to support healthy living resources like crabs, oysters, and striped bass. The TMDL is calculated using multiple computer models including watershed, estuarine, water quality, and sediment transport. These models are calibrated with real-world field monitoring data to simulate environmental conditions. Because the TMDL does not specify how or where to achieve pollution reductions, Bay jurisdictions develop watershed implementation plans (WIPs) to identify the type, number, and location of pollution reduction practices planned to restore water quality. Jurisdictions then translate these pollution reduction practices identified in their WIPs into scenarios and run them through the CBP modeling framework to demonstrate the achievement of water quality standards.

This current plan represents the third phase of the WIP. It is designed to achieve Maryland's 2025 TMDL pollution targets and incorporates lessons learned from Phases I and II. The Phase I WIP identified and accelerated strategies and deadlines for practices to achieve 70 percent of the pollution reductions by 2017. The Phase I WIP was finalized in December 2010 commensurate with the development of the 2010 TMDL and during a time when EPA was updating its scientific modeling framework. This first WIP demonstrated how pollution targets could be achieved at the major basin scale (i.e., Eastern Shore, Potomac, Susquehanna, Western Shore, and Patuxent basins) and was a starting point for finer scale planning during the Phase II process.

Maryland's Phase II WIP refined geographic resolution for implementation efforts and used the 2025 restoration deadline consistent with the TMDL. Initially, EPA intended for jurisdictions to develop the Phase II WIP at the county geographic scale; however, EPA decided in October 2011 to scale back its expectations for geographic specificity due to data and model limitations. Although jurisdictions again

⁶ chesapeakebay.net/documents/cbp_12081.pdf

⁷ www.dsd.state.md.us/comar/comarhtml/26/26.08.02.03-3.htm

used the major basin scale, most local partners provided the State information at a county scale as the basis of the basin scale plans. The State supported county analyses by assigning stormwater pollution reduction targets at a finer level than is available in EPA’s Bay watershed model. This underlying county scale planning provided further assurance of implementation beyond that of the Phase I WIP because the county governments and soil conservation districts that conduct many of the implementation actions operate at the county scale.

After the Phase II WIP, the CBP partnership agreed to conduct a 2017 Midpoint Assessment (MPA) to evaluate jurisdictions’ progress in achieving 60 percent of the necessary TMDL pollution reductions. Maryland exceeded the 60 percent MPA phosphorus and sediment goals in 2017 and was 36 percent of the way towards achieving the nitrogen targets. However, Maryland will exceed the 60 percent nitrogen goal when it completes upgrades at its 67 major WWTPs. As of January 2019, upgrades are complete at approximately 90 percent of these plants (59 of 67 complete), with five of the eight remaining plants anywhere from 88-98 percent complete, two still in planning or design, and work on one plant not yet started.

Additionally, the MPA provided an opportunity to incorporate improved science and monitoring results into the Chesapeake Bay modeling framework and update 2025 pollution reduction targets. The Phase 6 modeling suite established updated State-basin targets to ensure the jurisdictions WIP’s attained water quality standards upon implementation. Table 2 provides nutrient targets for each of Maryland’s five major basins; Appendix F describes the process for calculating these targets.

Table 2: Maryland’s Phase III WIP nutrient pollution targets by major basin.

Major Basin	Phase III WIP Target* (Million lbs/yr)	
	Nitrogen	Phosphorus
Eastern Shore of Chesapeake Bay	15.6	1.29
Patuxent River Basin	3.1	0.30
Potomac River Basin	15.8	1.09
Susquehanna River Basin	1.6	0.05
Western Shore of Chesapeake Bay	9.6	0.95
Total	45.8	3.68

*Phase III WIP reductions subject to change upon EPA review.

For the Phase I and II WIPs, Maryland used the allocation approach from the Chesapeake Bay TMDL to assign finer-scale goals for the Bay segment and county levels. Maryland based this methodology on applying a constant percent reduction, State-wide, to the hypothetically reducible load from each watershed. For the Phase III WIP, and in recognition that there are varying levels of pollution reduction

progress across sectors, Maryland adopted a feasibility approach to achieve 2025 targets. Maryland recognizes that accelerated progress in both the wastewater and agricultural sectors will be primarily responsible for the State achieving its 2025 restoration targets. Because wastewater and agriculture are the two highest loading sectors, these planned accelerated reductions will be sufficient to achieve current 2025 targets.

Beyond 2025, the stormwater and septic sectors are required to contribute their fair share by making steady long-term reductions while factoring in affordability. For stormwater, reductions occur over multiple five-year MS4 permit cycles. Septic system reductions incorporate a menu of practices, including septic upgrades, pumpouts, sewer connections, financial incentives, and a focus on public health priorities. Slowing and reversing the loss of natural lands, restoring ecosystems, and increasing natural filters are also critical to restoring the Bay, adapting to future conditions, and mitigating climate change impacts. The natural lands, conservation plus, and protection chapters (Appendices B and D) contain strategies to protect and restore the State's natural filters. Maryland worked closely with local jurisdictions throughout the Phase III WIP process to develop this feasibility based approach and document local strategies in county summary documents (Appendix C).

This Phase III WIP documents the strategies and programs that Maryland and local jurisdictions will put in place to achieve these basin targets by 2025. Also, EPA established expectations⁸ for what information each jurisdiction should include in their WIP.

These EPA Expectations include:

1. Programmatic and Numeric Implementation Commitments between 2018 and 2025;
2. Comprehensive Local, Regional, and Federal Engagement Strategies and Commitments;
3. Adjustments to Phase III WIP State-Basin Targets and the Phase II WIP Source Sector Goals;
4. Development and Implementation of Local Planning Goals;
5. PSC Decisions on Accounting for Growth;
6. PSC Decisions on Conowingo Dam;
7. PSC Decisions on Climate Change.

While Maryland's Phase III WIP is designed to remain consistent with EPAs expectations and achieve the TMDL nutrient and sediment targets, the State also is strongly committed to the broader goals outlined in the current (2014) Chesapeake Bay Agreement⁹. These broader goals include sustainable fisheries, vital habitats, reduction of toxic contaminants, healthy watersheds, land conservation, stewardship, public access, environmental literacy, and climate resiliency. Maryland participates on multiple Chesapeake Bay goal implementation teams to implement and track related strategies. Because of their close connection to water quality, many of the Phase III WIP sections and strategies also contribute to achieving these broader Bay restoration goals.

⁸ epa.gov/sites/production/files/2018-06/documents/epa-phase-iii-wip-expectations-6-19-18.pdf and "Clarification of Accounting for Growth Expectations for the Phase III Watershed Implementation Plans (WIPs), February 5, 2019.

⁹ chesapeakebay.net/what/what_guides_us/watershed_agreement