Building the Capacity for Success in the Phase III WIPs

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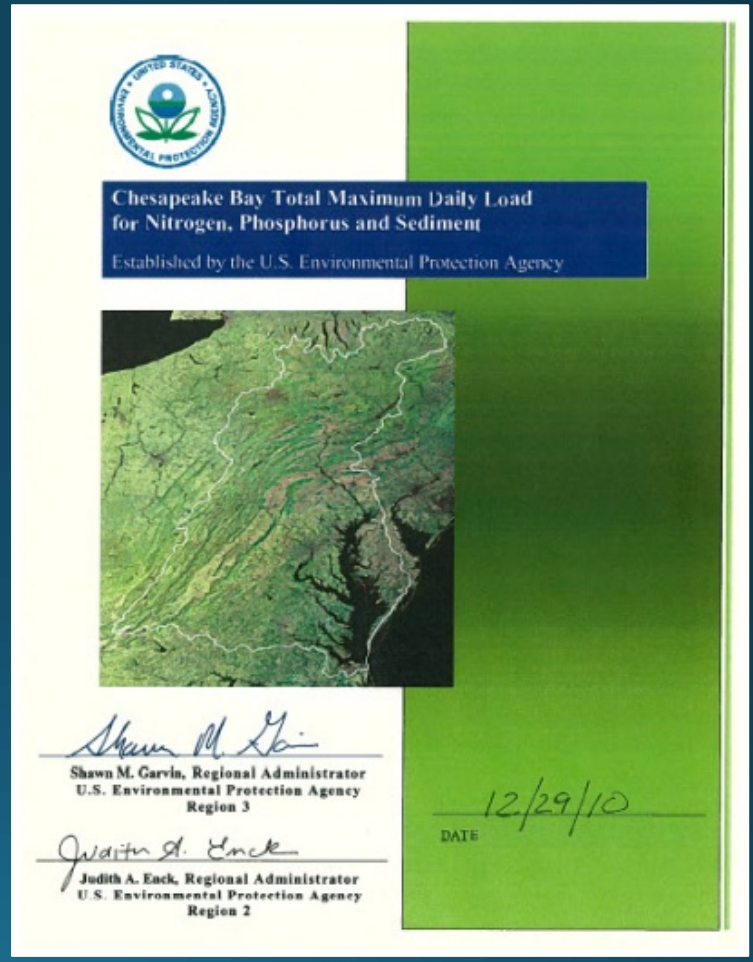
Chesapeake Bay Program
Science. Restoration. Partnership.

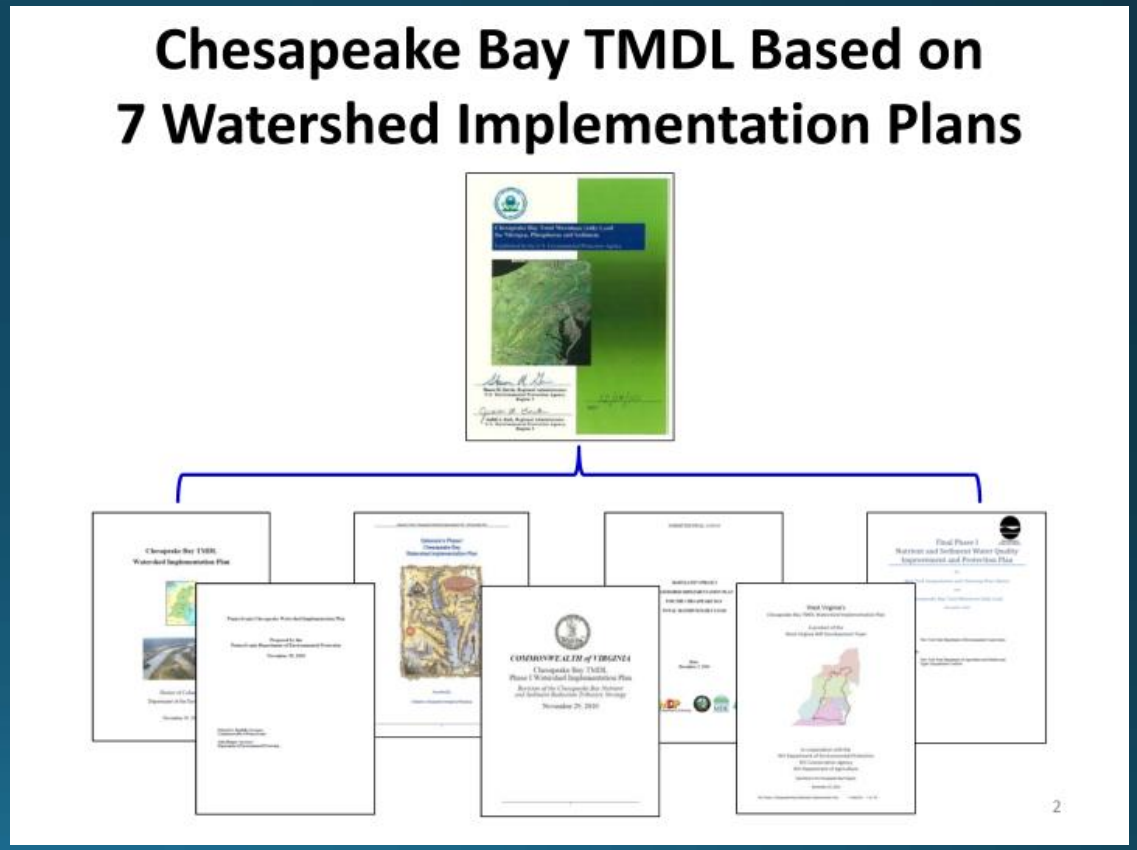
Chesapeake Bay TMDL: A New Accountability Framework

- TMDL: Set limits for sources of nitrogen, phosphorus and sediment to meet Bay water quality standards.
- Watershed Implementation Plans (WIPs): States/DC describe what amount, how, where, and when.
- 2-Year Milestones: States and DC, working with local partners, implement actions to reduce loads
- 60% by 2017, 100% of practices in place by 2025
- Federal Actions: State contingencies and/or EPA actions if targets aren't met or inadequate progress being made

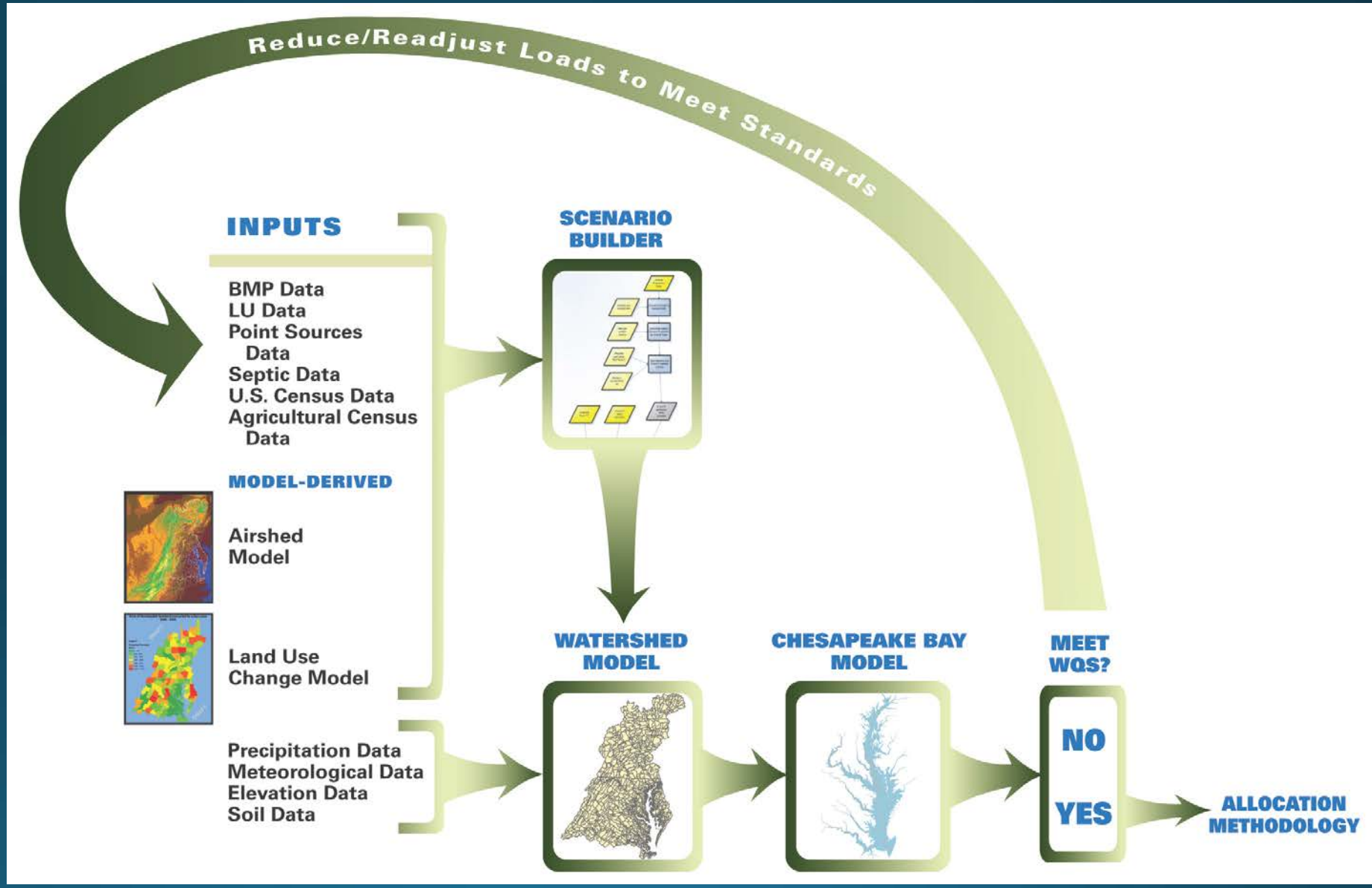


Watershed Implementation Plans (WIPs)

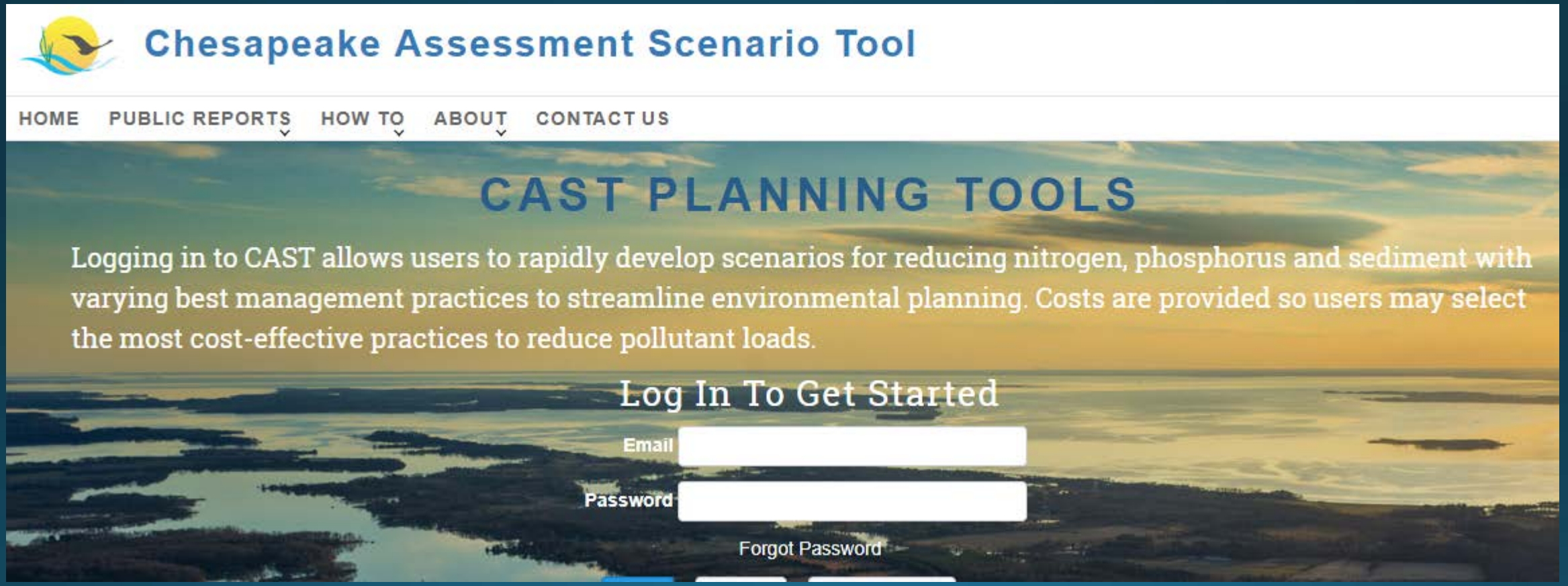
- Phase I WIP and Phase II WIPs were developed and submitted to EPA in 2010 and 2012, respectively. Phase III WIPs due in 2019
- These documents focused on the following elements:
  - Interim and final N, P, and SED Target Loads
  - Numeric & Programmatic Commitments
  - Current and Future Program Capacity
  - Account for Growth
  - Local & Federal Engagement
  - Gap Analysis
  - Tracking and Reporting Protocols
  - Contingencies
  - Detailed Schedule



Suite of Partnership Models Used in Collaborative Decision Making



Phase 6 Watershed Model = CAST



2017 Midpoint Assessment of Progress

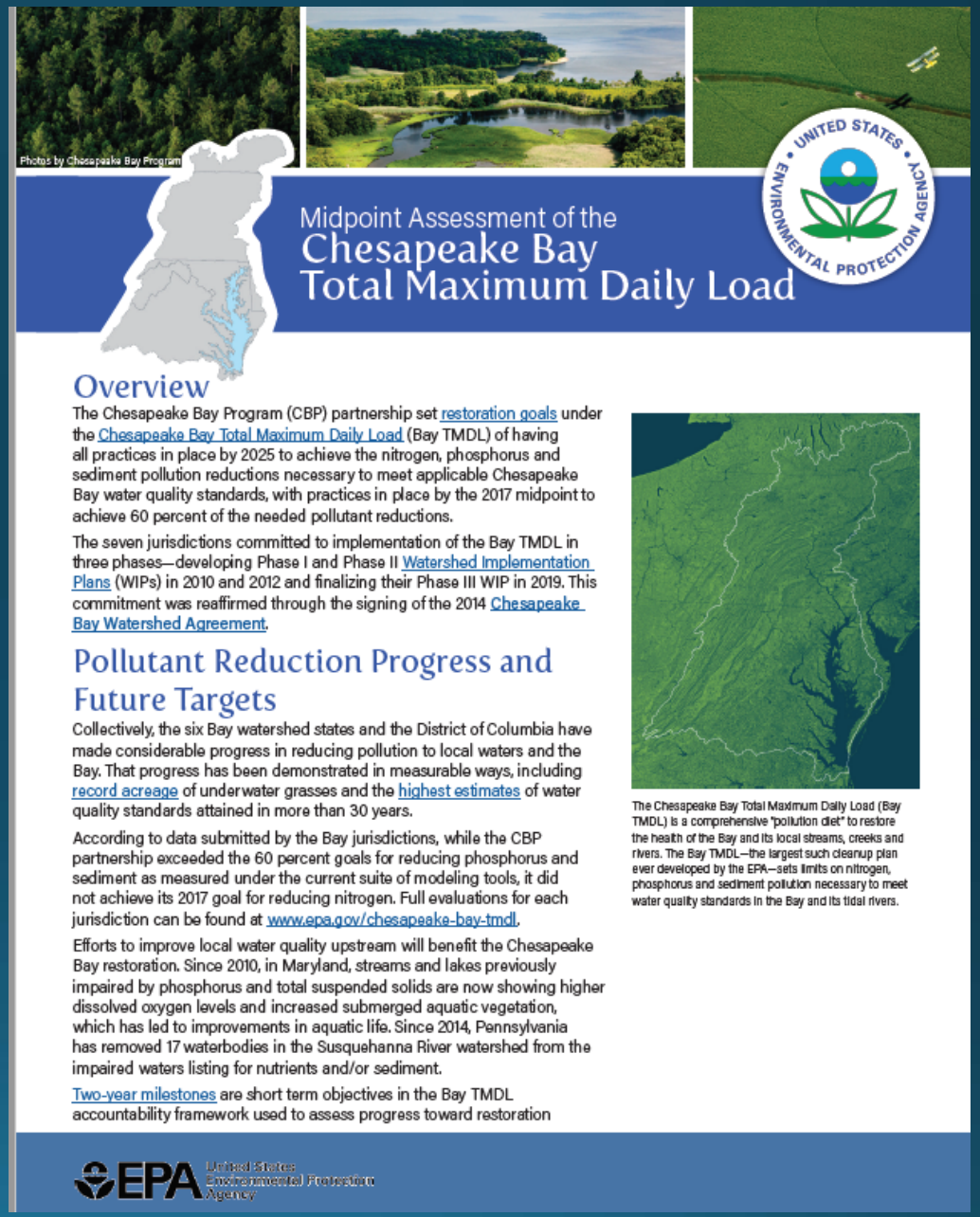
At the Midpoint: Assessing Progress, Building Better Tools and Moving Forward

- **EPA:** Review of progress towards meeting the 2017 60% interim target and the 2025 Chesapeake Bay TMDL goal

- **Partnership:** Gather, review, and incorporate new data and science into the Partnership's decision support tools (e.g., new Phase 6 model)

- **Jurisdictions:** Optimize implementation strategies based on new data and science in the Phase III Watershed Implementation Plans

EPA released its Midpoint Assessment of Progress on July 27, 2018


Photos by Chesapeake Bay Program

Midpoint Assessment of the
Chesapeake Bay
Total Maximum Daily Load

Overview

The Chesapeake Bay Program (CBP) partnership set restoration goals under the Chesapeake Bay Total Maximum Daily Load (Bay TMDL) of having all practices in place by 2025 to achieve the nitrogen, phosphorus and sediment pollution reductions necessary to meet applicable Chesapeake Bay water quality standards, with practices in place by the 2017 midpoint to achieve 60 percent of the needed pollutant reductions.

The seven jurisdictions committed to implementation of the Bay TMDL in three phases—developing Phase I and Phase II Watershed Implementation Plans (WIPs) in 2010 and 2012 and finalizing their Phase III WIP in 2019. This commitment was reaffirmed through the signing of the 2014 Chesapeake Bay Watershed Agreement.

Pollutant Reduction Progress and Future Targets

Collectively, the six Bay watershed states and the District of Columbia have made considerable progress in reducing pollution to local waters and the Bay. That progress has been demonstrated in measurable ways, including record acreage of underwater grasses and the highest estimates of water quality standards attained in more than 30 years.

According to data submitted by the Bay jurisdictions, while the CBP partnership exceeded the 60 percent goals for reducing phosphorus and sediment as measured under the current suite of modeling tools, it did not achieve its 2017 goal for reducing nitrogen. Full evaluations for each jurisdiction can be found at www.epa.gov/chesapeake-bay-tmdl.

Efforts to improve local water quality upstream will benefit the Chesapeake Bay restoration. Since 2010, in Maryland, streams and lakes previously impaired by phosphorus and total suspended solids are now showing higher dissolved oxygen levels and increased submerged aquatic vegetation, which has led to improvements in aquatic life. Since 2014, Pennsylvania has removed 17 waterbodies in the Susquehanna River watershed from the impaired waters listing for nutrients and/or sediment.

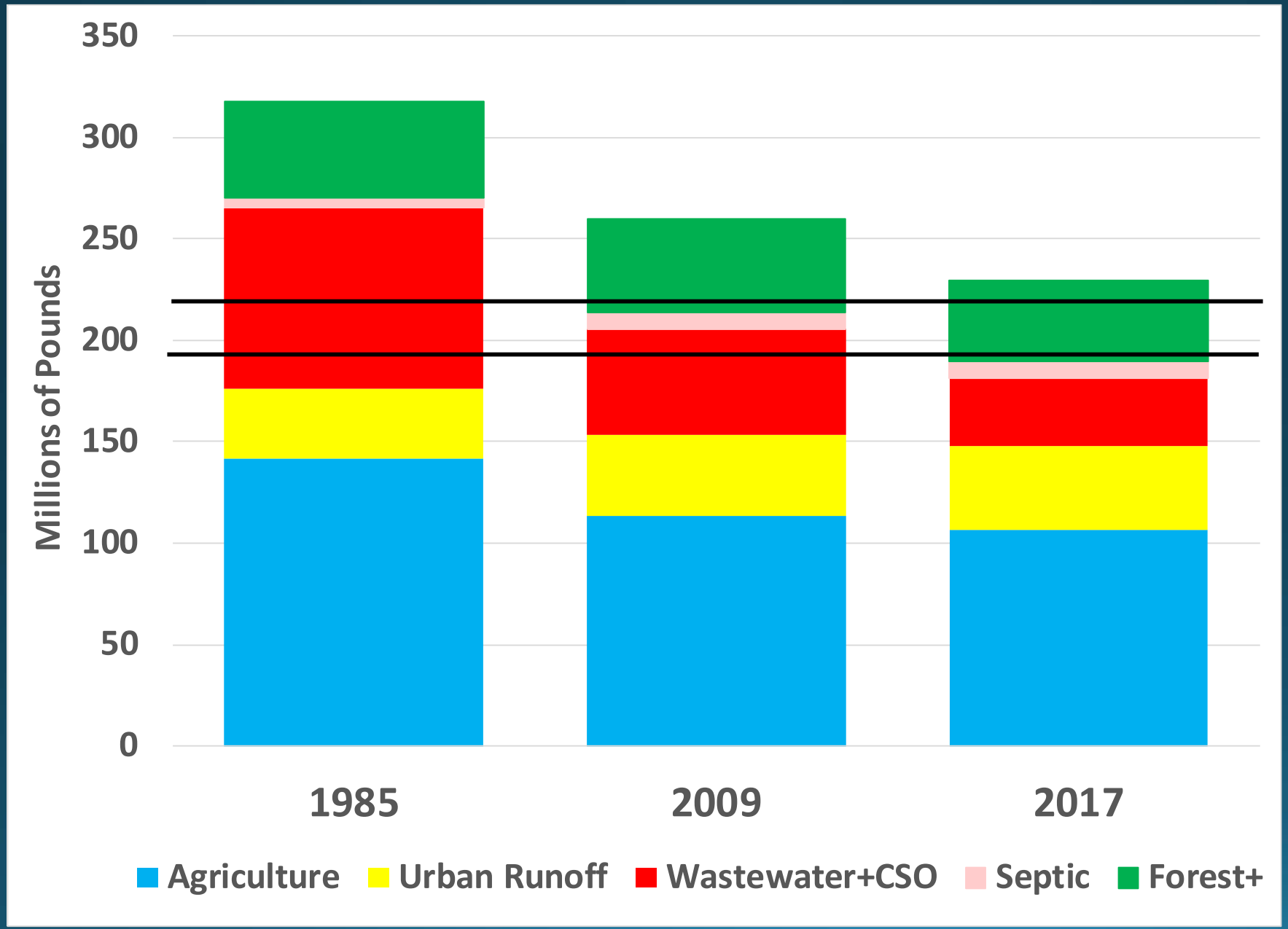
Two-year milestones are short term objectives in the Bay TMDL accountability framework used to assess progress toward restoration

The Chesapeake Bay Total Maximum Daily Load (Bay TMDL) is a comprehensive "pollution diet" to restore the health of the Bay and its local streams, creeks and rivers. The Bay TMDL—the largest such cleanup plan ever developed by the EPA—sets limits on nitrogen, phosphorus and sediment pollution necessary to meet water quality standards in the Bay and its tidal rivers.

EPA United States Environmental Protection Agency

https://www.epa.gov/chesapeake-bay-tmdl

CB Watershed Nitrogen Loads-Goals by Source



Percent of Goal Achieved by Jurisdiction & Watershed-wide

Nitrogen

Jurisdiction	Reduction Achieved 2009-2017 (M lbs/year)	Reduction Required by Bay TMDL (M lbs/year)	Percent Progress Towards 2025 Target (%)
PA	5.62	37.64	15%
MD	5.05	10.78	47%
VA	12.22	15.54	79%
WV	0.37	0.44	84%
DE	0.34	1.08	32%
DC	1.30	0.50	100%
NY	-0.17	1.87	0%
AllJurisdictions	24.73	67.86	36%

Phosphorus

Jurisdiction	Reduction Achieved 2009-2017 (M lbs/year)	Reduction Required by Bay TMDL (M lbs/year)	Percent Progress Towards 2025 Target (%)
PA	0.784	1.413	55%
MD	0.583	0.491	100%
VA	2.239	2.270	99%
WV	0.247	0.265	93%
DE	0.074	0.068	100%
DC	-0.002	-0.049	100%
NY	0.208	0.313	66%
AllJurisdictions	4.131	4.772	87%

Sediment

Jurisdiction	Reduction Achieved 2009-2017 (M lbs/year)	Reduction Required by Bay TMDL (M lbs/year)	Percent Progress Towards 2025 Target (%)
PA	267	699	38%
MD	210	45	100%
VA	268	492	54%
WV	115	73	100%
DE	18	-1	100%
DC	1	0	100%
NY	10	27	36%
AllJurisdictions	888	1,335	67%

2018 Oversight Status

Ongoing | Enhanced | Backstop

	Agriculture	Urban/Suburban	Wastewater	Trading/Offsets
Delaware	Enhanced Oversight	Ongoing Oversight	Ongoing Oversight	Ongoing Oversight
District of Columbia	Not Applicable	Ongoing Oversight	Ongoing Oversight	Ongoing Oversight
Maryland	Ongoing Oversight	Enhanced Oversight	Ongoing Oversight	Ongoing Oversight
New York	Ongoing Oversight	Ongoing Oversight	Enhanced Oversight	Ongoing Oversight
Pennsylvania	Backstop Action Levels	Backstop Action Levels	Ongoing Oversight	Enhanced Oversight
Virginia	Ongoing Oversight	Ongoing Oversight	Ongoing Oversight	Ongoing Oversight
West Virginia	Ongoing Oversight	Ongoing Oversight	Ongoing Oversight	Ongoing Oversight

Definitions

Ongoing Oversight: EPA will continue to monitor progress.

Enhanced Oversight: Having identified specific concerns with a jurisdiction's implementation of strategies to meet TMDL goals, EPA may take additional federal actions to ensure that jurisdiction stays on-track.

Backstop Actions Level: Having identified substantial concerns with a jurisdiction's actions to meet the TMDL goals, EPA has taken federal actions to help the jurisdiction get back on-track.

EPA's Midpoint Assessment of Progress – DC, MD and VA Highlights

- **District of Columbia**
  - Blue Plains wastewater treatment plant upgrades
  - Stormwater regulations, retention credit program and user fee discount program
- Maryland
  - Dedicated agricultural cost-share program for implementing priority practices
  - Investments in wastewater technology
- Virginia
  - Resource Management Plan
  - Highway construction mitigation program with land bank conservation practices

EPA's Midpoint Assessment of Progress – DC, MD and VA Key Areas to Address in Phase III

- **Cross-jurisdictional :**
  - Increasing implementation of stormwater sector BMPs for nitrogen
  - Implementing a BMP verification program
- **District of Columbia**
  - Increasing coverage of District-owned facilities under the 2015 multi-sector general permit
- **Maryland**
  - Approving of Phase I MS4 restoration plans or taking appropriate action
  - Implementing the trading program to address pollution reduction requirements
- **Virginia**
  - Addressing unregulated urban land

Phase III WIP Expectations for the Bay Watershed Jurisdictions

Overview

- **EPA released its final expectations for the Phase III WIPs on June 20, 2018 to account for the next seven years of implementation** of the 2010 Bay TMDL, as well as to factor in new science and information resulting from the Bay TMDL's midpoint assessment.

CBP Partnership Role

- These Phase III WIP expectations went through **thorough Partnership review prior to its interim release in January 2017 and final release in June 2018**.
- **Although this document is being released by EPA, many of these expectations are Partnership driven** and reflect Partnership priorities and PSC decisions.
- Through these expectations, the **Partnership reaffirmed its commitment to have practices and controls in place by 2025 to meet applicable water quality standards in the Chesapeake Bay.**

Phase III WIP Expectations – Top 5

- Programmatic and numeric implementation commitments for 2018-2025
- Strategies for engagement of local, regional and federal partners in implementation
- Account for changed conditions: climate change and growth
- Develop, implement local planning goals below the state-major basin scales
- Consideration of co-benefits

Programmatic & Numeric Expectations

- Build and/or increase the financial capacity, technical assistance, regulatory oversight, financial cost-share, and other incentives to implement agricultural and stormwater programs and practices to achieve Phase III planning targets
- Identify specific funding, financing, cost-share, technical assistance, legislative, regulatory and other actions needed to address gaps in programmatic capacity
- Comprehensive strategies for engaging federal, regional, and local partners in WIP implementation

Programmatic & Numeric Expectations

- Greater targeting of more effective BMPs in higher loading watersheds based on modeled and monitoring data
- Building and implementing programmatic infrastructure, BMP verification programs, policies, legislation, and regulations to fully account for and offset growth through 2025
- Full listing of all NPDES permits
- Submission of a BMP input deck to include the level and location of BMPs needed to meet the Phase III planning targets by 2025

➢EPA expects more detailed documentation of planned changes to existing programmatic capacity or development of new programmatic capacity for those source sectors under enhanced or backstop levels of oversight.

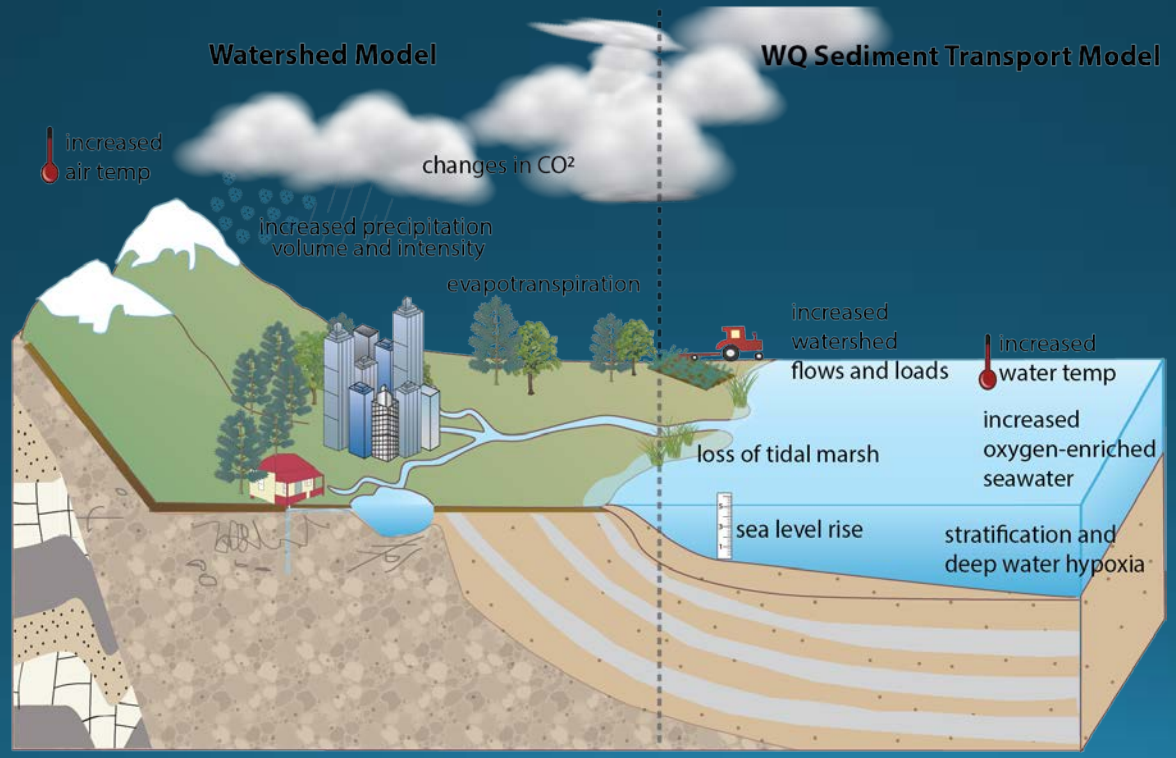
What's New for Phase III?

Final Phase III Planning Targets

	Planning Target (millions of pounds per year)	
Jurisdiction	Nitrogen	Phosphorus
District of Columbia	2.42	0.130
Delaware	4.55	0.108
Maryland	45.78	3.680
New York	11.53	0.587
Pennsylvania	73.18	3.044
Virginia	55.73	6.192
West Virginia	8.22	0.432

Addressing Climate Change

Include a narrative strategy in the Phase III WIPs that describes the jurisdictions current action plans and strategies to address climate change, as well as the jurisdiction-specific nutrient and sediment pollution loadings due to 2025 climate change conditions, while incorporating local priorities and actions to address climate change impacts.



Factoring Climate Change Impacts into the Phase III WIPs

2018

- STAC Workshop to examine current results, assess lessons-learned and recommend next steps.
- CRWG will incorporate actions in its 2018-2020 workplan to develop a better understanding of BMP responses, including new or other emerging BMPs, to climate change conditions.
- Jurisdictions provide narrative in PhIII WIPs on climate strategies

2019

- Following the direction of the PSC the Modeling and Climate Resiliency Workgroups, working with other key Chesapeake Bay Program groups, will develop and implement a complete and fully operational model of climate change assessment by 2019.

2020

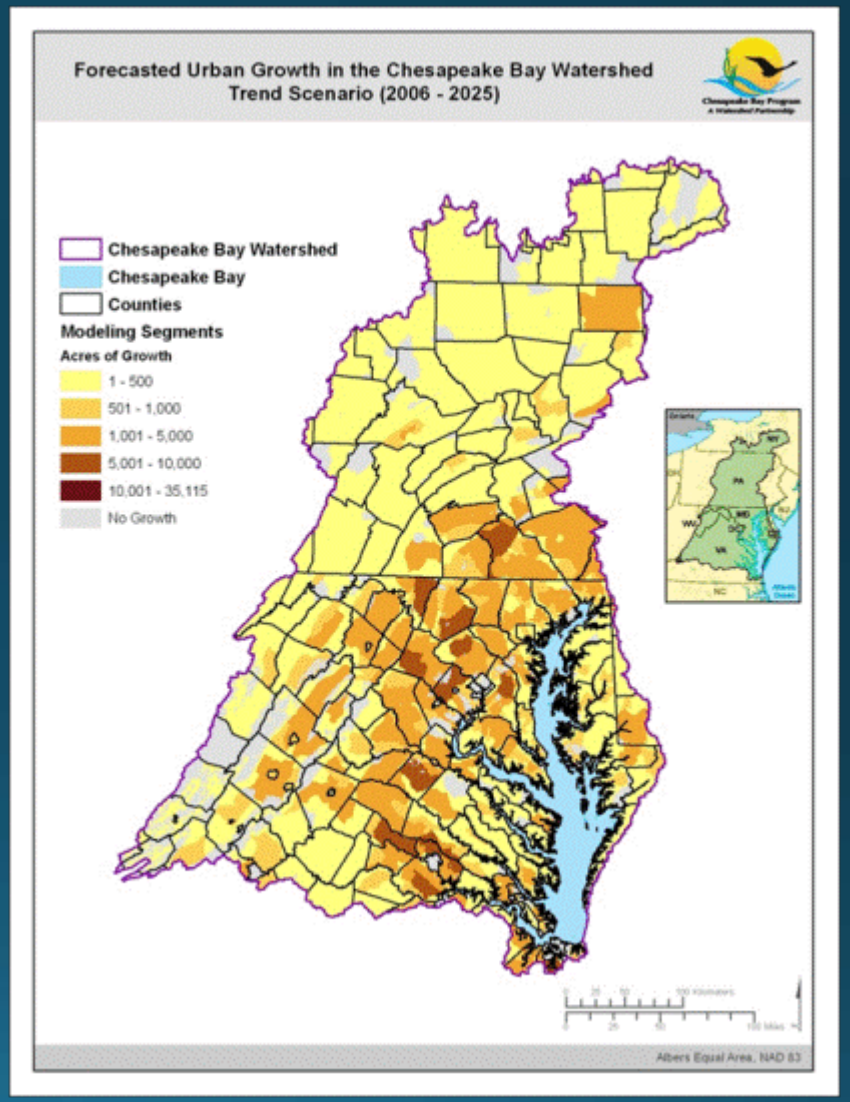
- In 2020 the CBP partners will complete a technical review and process for approval of the new refined model and its findings.

2021

- In 2021, the policy implications for including targets adjusted for the influence of climate change into the 2022-2023 milestones will be considered by the partnership.
- By the close of 2021 the refined findings on climate change will be implemented into the 2022-2023 milestones.

Accounting for Growth

- Use 2025 growth projections to account for growth in the Phase III WIPs and two-year milestones. Updates to projections will occur every two years
- CBPO and jurisdictions to work with local governments on updating growth projections and creating customized growth scenarios to reflect local conditions



Addressing Conowingo Dam Infill

- Agreed to a separate Conowingo target, with a separate WIP
- Agreed to the concept of pooling resources applied by a third party (with Partnership oversight) in areas determined to have most impact on the Bay as part of the WIP

February 16 DRAFT

FOR DISCUSSION PURPOSES, SUBJECT TO MODIFICATION

Framework for the Conowingo Watershed Implementation Plan

Objective: To obtain final PSC approval on this draft Framework for developing the Conowingo Watershed Implementation Plan.

Background: When the TMDL was established in 2010, it was estimated that Conowingo Dam would be trapping sediment and associated nutrients through 2025. New research has determined this is not the case, and that the reservoir behind Conowingo Dam has now reached dynamic equilibrium. As a result, more sediment, nitrogen, and phosphorus are now entering the Chesapeake Bay than were estimated when the TMDL was established. Even with full implementation of the seven Bay jurisdictions' WIPs, this additional pollutant loading from Conowingo reservoir reaching dynamic equilibrium will cause or contribute to water quality standards exceedances in the upper Bay. This additional pollutant load must be addressed if the Bay's water quality standards, as they are currently written and implemented, are to be met. The Chesapeake Bay Program (CBP) partnership estimates that, after fully implementing the Bay TMDL and Phase I/II WIPs, an additional reduction of 6 million pounds of nitrogen and 0.26 million pounds of phosphorus is needed in order to mitigate the water quality impacts of Conowingo Reservoir infill. Although further analysis may alter the total nitrogen and phosphorus loads needing to be reduced, these current estimates are also based on reductions occurring in the most effective sub-basins of the watershed – that is, the geographic areas with the greatest influence on Chesapeake Bay water quality. If implementation were directed watershed-wide, including less effective areas, the total pollution reduction needed would increase.

Partnership Approved Local Planning Goal Recommendations

- **Flexibility is key but goals must be measurable and established below the state-major river basin**
  - Each state and local jurisdiction can have a vastly different social, political, and economic landscapes.

- **State and local jurisdictions decide how to define "local" and how best to express local planning goals**:
  - Local can be county, city, township, and/or soil and water conservation district(s)
  - Goals can be numeric, percentage of BMPs implemented; and/or pounds of pollution reduced

Preliminary Approach for Developing Local Planning Goals

- **District of Columbia**: establishing numeric load reduction goals for each federal agency in the District
- **Maryland**: Local numeric goals at the county scale under development for the agricultural and developed sectors
- **Virginia**: established goals for the developed sector at the scale of Planning District Commissions and for the agricultural sector at the scale of Soil and Water Conservation Districts; focusing on levels of BMP implementation to hit numeric goal

Suggested Questions to Consider

- **How can local planning goals best reflect local priorities and needs?**
  - E.g., Infrastructure maintenance and financing; public health; and economic development
- **How can local planning goals advance implementation goals?**
  - E.g., Emphasis on targeting BMPs in "priority" watersheds ("priority" can be based on funding, most effective at reducing loads, or higher loading areas)
- **How can local planning goals capture co-benefits beyond just water quality improvements?**
  - E.g., riparian forest buffers, stream/pasture fencing, wetland creation or enhancements

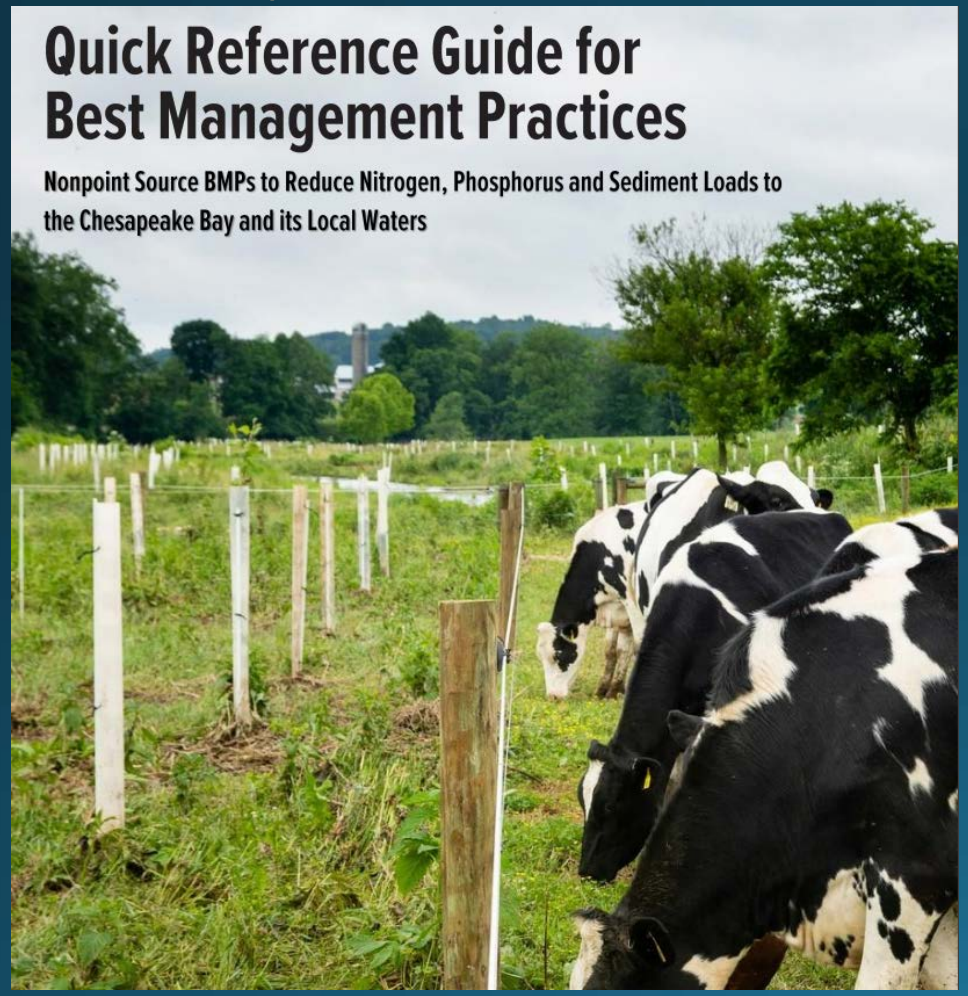
Consideration of Co-benefits

- Jurisdictions and planners are encouraged to consider additional benefits of BMPs beyond nutrient and sediment load reductions in development and implementation of the Phase III WIPs.

- Proposed standard language for incorporation into the Phase III WIPs that jurisdictions can use for describing efforts they have taken to incorporate these co-benefits into their Phase III WIP was developed.

Resources: BMP Guide & Co-benefit Fact Sheets

BMP Reference Guide:
https://www.chesapeakebay.net/documents/BMP-Guide_Full.pdf



Climate Resiliency

Principles for Phase III Watershed Implementation Plans

Protecting People and Infrastructure

The Chesapeake Bay watershed has experienced changes in climate over the last century.[1] On the whole, the watershed is experiencing stronger storms, an increase in heavy precipitation events, increasing air and water temperatures and a rise in sea level. These trends are altering the watershed, its ecosystems and the human communities of the Chesapeake Bay. Adapting to these impacts will require changes in programs and projects to successfully achieve restoration and protection goals.

Addressing these impacts in conjunction with ongoing restoration efforts will prepare communities for greater variability and can help achieve cost savings and reduce risks. Considering future impacts during the planning, siting, design and implementation of best management practices (BMPs) can help to reduce the vulnerability of a project to failure (structural or programmatically).

Assessing climate impacts at the initial stage of watershed implementation planning will increase effectiveness, decrease maintenance costs, and contribute to meeting the U.S. EPA's TMDL pollution reduction goals.

Best Management Practices with Resiliency in Mind

In addition to water quality benefits, several suites of BMPs can aid with natural hazard risk reduction (riverine and coastal flood, heat and drought). See the table* below for BMPs that have several co-benefits.

Success Stories

Living shoreline project at Ferry Point, MD (Source: MD DNR)

Forest buffer shading/cooling Brook Trout habitat (Source: CBP)

Best Management Practices	Climate Adaptation	Energy Efficiency	Flood Risk Mitigation
Urban Shoreline Management	4	0.5	1
Urban Forest Buffers	3.5	4	3.5
Forest Conservation	3.5	3	3.5
Urban Stream Restoration	2.5	2.5	3.5
Agriculture Forest Buffer	2.5	0.5	3.5
Urban Tree Planting	2	4.5	2
Bioretention, Raingardens, Bioswales	2	3	3.5
Wetland Restoration	2	1	3.5
Agriculture Shoreline Management	0	0	4

PA-specific Expectations

- Given the impact of PA on the Bay and the additional reductions needed by 2025 (35M lbs of nitrogen), EPA released PA-specific Phase III WIP expectations.

- PA's Phase III WIP should demonstrate:
  - Commitment to programmatic, policy, legislative, and regulatory changes
  - Commitment to the necessary level of staff, partnerships, and financial resources
  - Modification of current expected reductions for the urban sector
  - Demonstrated collaboration with local partners and other key stakeholders

Phase III WIP Expectations for Federal Lands and Federal Facilities

Phase IIII WIP Expectations for Federal Lands & Facilities

- EPA provided expectations regarding federal agency participation in the Phase III WIPs that will be developed by the Bay jurisdictions.

- Provides additional detail on expectations to ensure that the Bay jurisdictions have the information needed from federal agencies to prepare their WIPs and to demonstrate that needed pollutant reductions will occur.

Phase IIII WIP Expectations for Federal Lands & Facilities

- **Achieve federal facility targets** established in 2015, or however modified to align with Phase III WIP local area planning goals, by 2025.
- **Establish new targets for new or upgraded facilities** as part of the jurisdictions' local planning goals development.
- **Report annual BMP progress to the jurisdictions and EPA** using tools provided by the jurisdictions that are compatible with requirements for NEIEN.
- **Develop two-year** programmatic and two-year BMP implementation **milestones**.

Federal Facilities Information to Support Jurisdictions' Phase III WIPs

- Location and description of the federal land or facility;
- Description and estimation of current releases of nitrogen, phosphorus, and sediment from those federal lands or facilities and an estimate of anticipated growth through 2025;
- Planned pollutant reductions from point and nonpoint sources associated with federal lands and facilities to meet the their share of a local area planning goal;
- Planned actions, programs, policies, and resources necessary through 2025 to reduce pollutant loads associated with federal lands and facilities with specific target dates; and
- Procedure for tracking, verifying and annually reporting BMPs to jurisdictions and EPA.

EPA's Role & Support to Federal Agencies

- Help coordinate with federal agencies to provide input to the jurisdictions' Phase III WIPs.
- Continue to coordinate the effort for developing federal water quality milestones and oversee federal agencies' implementation progress.
- Assist with the resolution of any disagreement between a federal agency and jurisdiction at the request of the jurisdiction or the federal agency as required by EO 12088.
- Provide technical advice and assistance to federal agencies.

Phase III WIP Schedule

- **June 20, 2018:** EPA finalized and released Phase III WIP expectations
- **July 9, 2018:** PSC approves the final Phase III planning targets
- **Fall 2018**: Jurisdictions present their approaches for developing local planning goals to the PSC
- **April 12, 2019**: Draft Phase III WIPs posted on jurisdictions' websites for partner and public stakeholder review
- **June 7, 2019**: Partners and public stakeholders' feedback on draft Phase III WIPs due to jurisdictions
- **August 9, 2019**: Final Phase III WIPs posted on jurisdictions' websites

Closing

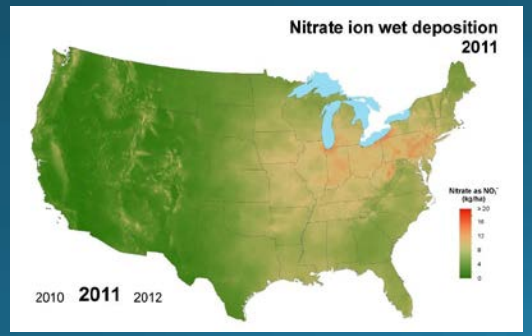
- **As a partnership, we need to recognize the good work and progress we've made in meeting our water quality commitment**s, while knowing that additional effort is needed to get us to the 2025 goals.

- **We have a shared understanding of how much farther we need to go**, what's needed – both through regulatory and voluntary means – to get us there, and what resources are key to making a demonstrable difference at the state and local levels.

- **EPA looks forward to our continued collaboration with each of the seven Bay watershed jurisdictions** as they develop and implement their Phase III WIPs, and

- **EPA will continue to support these efforts** through technical assistance, funding, facilitation services, and other resources.

WE ARE SEEING REAL BAY AND WATERSHED RESPONSES



Links to Additional Resources

- WQGIT web page: http://www.chesapeakebay.net/groups/group/water_quality_goal_implementation_team
- Chesapeake Assessment Scenario Tool: http://cast.chesapeakebay.net/
- Chesapeake Progress / Water Quality: http://www.chesapeakeprogress.com/clean-water#water-quality