

The Chesapeake Bay Program



Protecting and Restoring the Chesapeake Bay Watershed

National Conference on Ecosystem Restoration

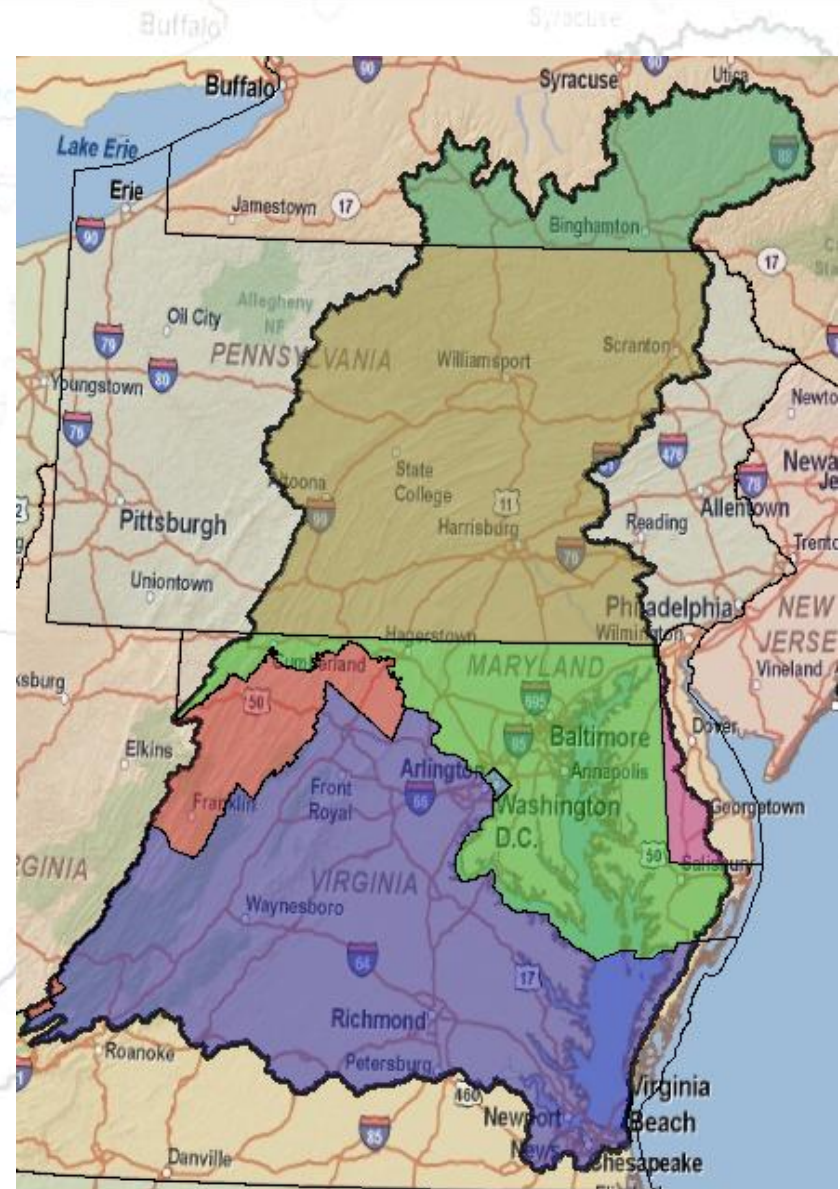
James Edward, Acting Director
EPA Chesapeake Bay Program Office
August 3, 2011



The Chesapeake Bay and Watershed

- Largest estuary in North America
- 3,600 of fish, wildlife, and plants
- Economic value: approx. \$1 trillion
 - Seafood
 - Estimated 77,000 farms
- Home to almost 17 million people
- Six states and District of Columbia
- About 1,800 local governments
- What happens on the land is felt in the bay and local waterbodies

DNR PHOTO BY
ANGEL BOLINGER

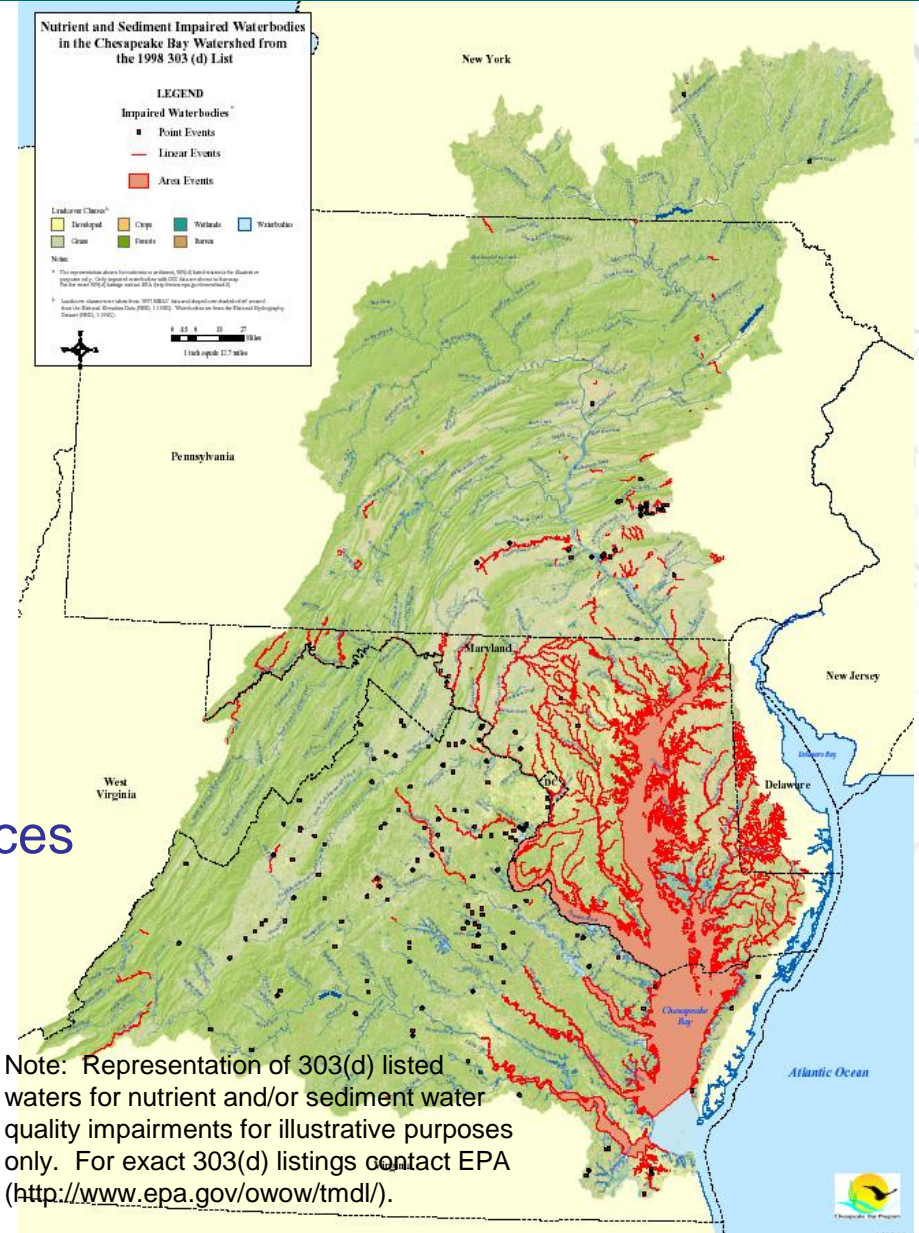


Degraded Ecosystem

- Declining fish and wildlife
- Poor water quality
- Loss of habitat

Caused by...

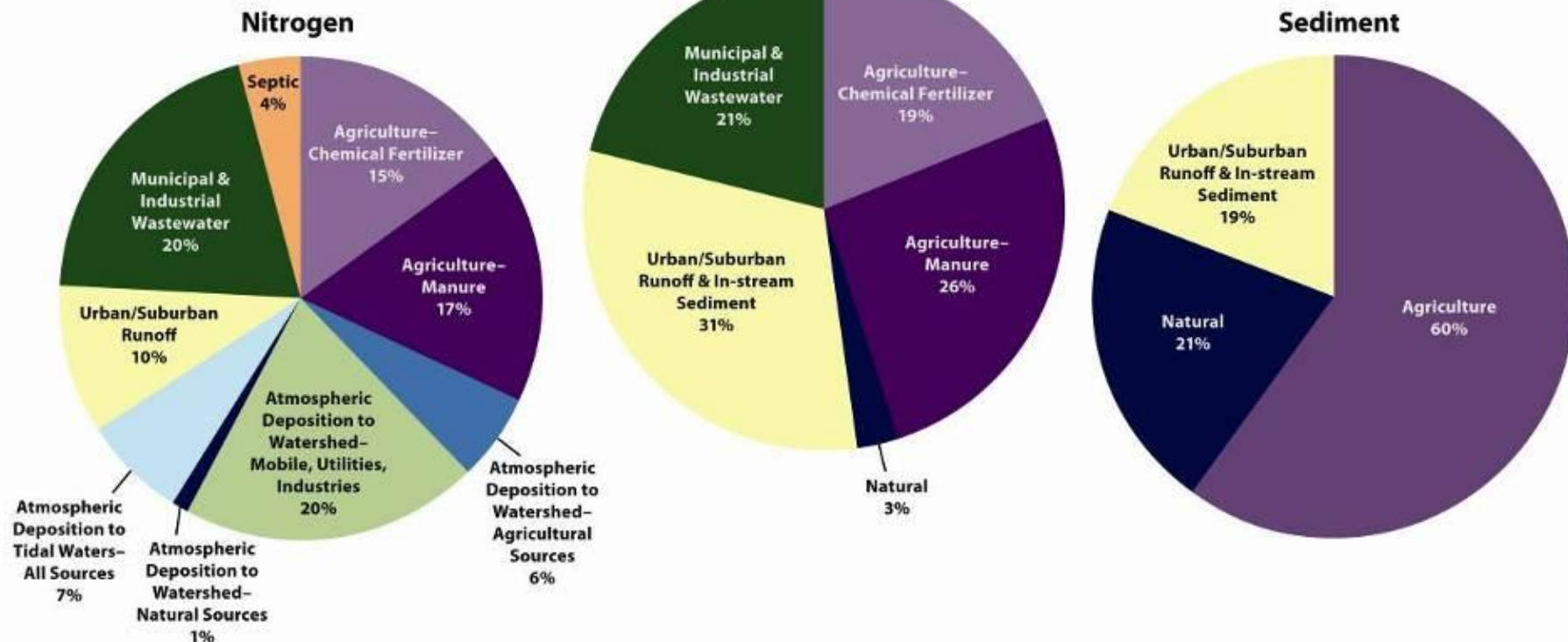
- Excessive Nitrogen, Phosphorus and Sediment
- Increased impervious surfaces
- Loss of natural areas
- Over harvesting of fisheries



Sources of Pollution - How People Use the Land

- **Agriculture** – animal manure, commercial fertilizer
- **Air pollution** – tailpipes, power plants
- **Urban/suburban runoff**– fertilizer, stream erosion
- **Wastewater** – sewage treatment plants

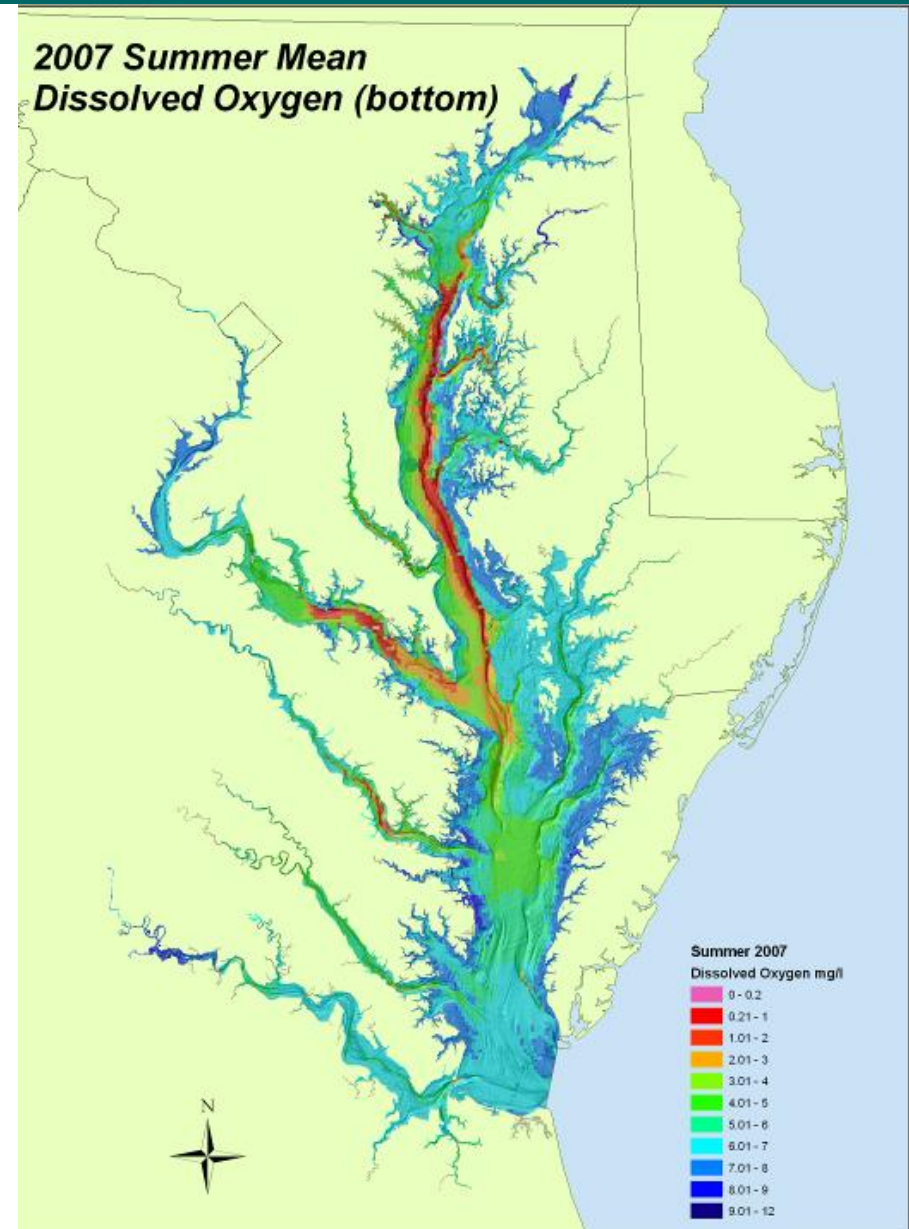
Phosphorous



Note: Does not include loads from tidal shoreline erosion or the ocean. Urban/suburban runoff loads due to atmospheric deposition are included under atmospheric deposition loads. Wastewater loads based on measured discharges; other loads are based on an average hydrology year using the Chesapeake Bay Program Airshed Model and Watershed Model Phase 4.3 (CBPO, 2009).

Pollution Effects on Watershed

Result:
Low to no
dissolved oxygen
in the Bay and tidal
ivers every
summer



History of the Partnership

CBP Vision Statement: To lead and empower others to protect and restore the Chesapeake Bay ecosystem for future generations.

- FY 2011 budget of \$54 million (EPA)

Original Partners:

MD, VA, PA, DC, the Chesapeake Bay Commission and the Federal Government

- 1983 - Chesapeake Bay Partnership Formed
- 1987 - Chesapeake Bay Agreement
- 2000 - *Chesapeake 2000* Agreement

Addition of the Headwater States

- MOU with DE, NY, WV (2000-2002)



Recent Bay Program “Drivers”

- **Chesapeake Bay Foundation Settlement Agreement with EPA – May 10, 2010**
- **Executive Order Strategy – May 12, 2010**
 - New goals and outcomes; topically aligns with C2K goals and commitments; includes targets into 2025.
- **Bay TMDL (Total Maximum Daily Load) – December 29, 2010**
 - CBP Jurisdictions participating, but changes nature of the relationship between the EPA and the jurisdictions

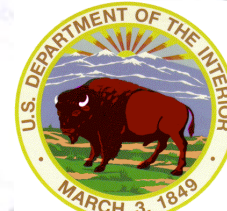


Executive Order 13508



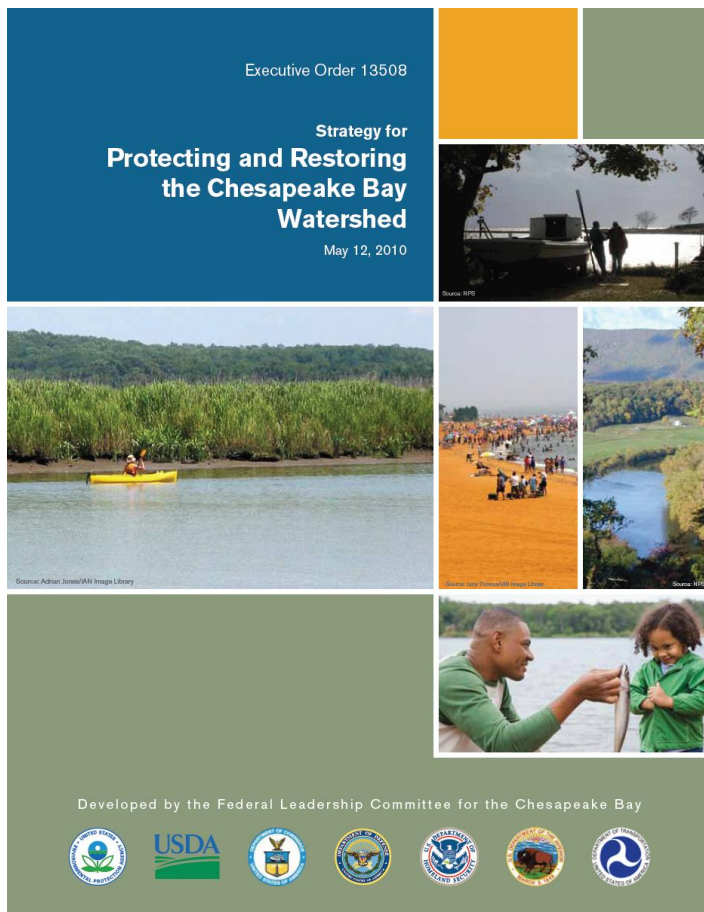
May 12, 2009 – President Obama issues EO 13508 for the Protection and Restoration of the Chesapeake Bay

- **Federal Leadership Committee**
- **EO Strategy**
- **Annual Action Plan and Progress Report**



EO 13508 Chesapeake Bay Strategy

May 12, 2010



EO Strategy Goals and Outcomes

RESTORE CLEAN WATER GOAL:

Reduce nitrogen, phosphorus, sediment and other pollutants to meet Bay water quality goals for dissolved oxygen, clarity and chlorophyll-a and toxic contaminants.

WATER QUALITY OUTCOME: Meet water quality standards for dissolved oxygen, clarity/underwater grasses and chlorophyll-a in the Bay and tidal tributaries by implementing 100 percent of pollution reduction actions for nitrogen, phosphorus and sediment no later than 2025, with 60 percent of segments attaining standards by 2025.

STREAM RESTORATION OUTCOME: Improve the health of streams so that 70 percent of sampled streams throughout the Chesapeake watershed rate three, four, or five (corresponding to fair, good or excellent) as measured by the Index of Biotic Integrity, by 2025.

AGRICULTURAL CONSERVATION OUTCOME: Work with producers to apply new conservation practices on 4 million acres of agricultural working lands in high-priority watersheds by 2025 to improve water quality in the Chesapeake Bay and its tributaries.

RECOVER HABITAT GOAL:

Restore a network of land and water habitats to support priority species and to afford other public benefits, including water quality, recreational uses and scenic value across the watershed.

WETLAND RESTORATION OUTCOME: Restore 30,000 acres of tidal and non-tidal wetlands and enhance the function of an additional 150,000 acres of degraded wetlands by 2025.

FOREST BUFFER OUTCOME: Restore riparian forest buffers to 63 percent, or 181,440 miles, of the total riparian miles (stream bank and shoreline miles) in the Bay watershed by 2025.

FISH PASSAGE OUTCOME: Restore historical fish migratory routes by opening 1,000 additional stream miles by 2025, with restoration success indicated by the presence of river herring, American shad and/or American eel.

SUSTAIN FISH & WILDLIFE GOAL:

Sustain healthy populations of fish and wildlife, which contribute to a resilient ecosystem and vibrant economy.

OYSTER OUTCOME: Restore native oyster habitat and populations in 20 tributaries out of 35 to 40 candidate tributaries by 2025.

BLUE CRAB OUTCOME: Maintain sustainable blue crab interim population target of 200 million adults (1+ years old) in 2011 and develop a new population rebuilding target for 2012-2025.

BROOK TROUT OUTCOME: Restore naturally reproducing brook trout populations in headwater streams by improving 58 sub-watersheds from 'reduced' classification (10-50 percent of habitat lost) to 'healthy' (less than 10 percent of habitat lost) by 2025.

BLACK DUCK OUTCOME: Restore a three-year average wintering black duck population in the Chesapeake Bay watershed of 100,000 birds by 2025.

CONSERVE LAND AND INCREASE PUBLIC ACCESS

Conserve landscapes to maintain water quality, habitat, sustainable working forests, farms and maritime communities; and cultural, community and indigenous values. It will also expand public access to the Bay and its tributaries through existing and new federal, state, and local parks, refuges, reserves, trails and partner sites.

LAND CONSERVATION OUTCOME: Protect an additional 2 million acres of lands throughout the watershed currently identified as high conservation priorities at the federal, state or local level by 2025, including 695,000 acres of forest land of highest value for maintaining water quality.

PUBLIC ACCESS OUTCOME: Increase public access to the Bay and its tributaries by adding 300 new public access sites by 2025.

Key Initiatives by Goal

Restore Clean Water

- Bay TMDL, Stormwater Rule, CAFO Rule, Stormwater/EISA Requirements for Federal Lands, Toxic Contaminants
- Agriculture –Target conservation practices in high priority watersheds, Identify the most effective conservation practices, Establish Showcase projects in small watersheds

Recover Habitat

- Priority Chesapeake Marshes and Wetlands, Farm Bill Conservation Programs, Stream Restoration and Fish Passage Initiatives, Forest Restoration Strategy

Sustain Fish & Wildlife

- Bay-wide Oyster Strategy, Restore Stream Habitat, Restore Black Duck Habitat, Sustaining Blue Crabs

Conserve Land and Increase Public Access

- GIS-based Land Conservation Prioritization System, Strategy to Reduce the Loss of Farms and Forests, Public Access Plan

Key Initiatives by Supporting Strategy

Strengthen Science

- Improve tools to target water-quality actions and land conservation, Establish a Monitoring Alliance, Increase CBP science capacity from EO federal science actions

Respond to Climate Change

- Adaptation studies and vulnerability assessments, Improve tools and techniques to support habitat restoration and adaptation

Expand Citizen Stewardship

- Environmental Literacy Strategy, Chesapeake Conservation Corps Expansion, Small Watershed and other matching grants

Develop Environmental Markets

- Offsets Guidance for States (EPA), Interdepartmental Environmental Markets Team (USDA), Federal Agency Authorities Evaluation

Implementation and Accountability

- Develop two year milestones, Develop tracking process and first annual progress report

EO FY2011 Action Plan

Fiscal Year 2011 Action Plan

Executive Order 13508

*Strategy for Protecting and Restoring the
Chesapeake Bay Watershed*



Federal Leadership Committee for the Chesapeake Bay

September 30, 2010



Released by
FLC on
September 30, 2010

Next Steps

Annual Progress Reports

- Required by EO, Progress reports will:
 - Review indicators of environmental conditions in the Chesapeake Bay
 - Assess implementation of the Action Plan during the preceding fiscal year
 - Recommend steps to improve progress
- **First annual progress report due early in 2012**
- Will help assess the success of the agencies' efforts in implementing the actions identified in the preceding action plan
- Provides agencies with a regular opportunity to adjust implementation efforts

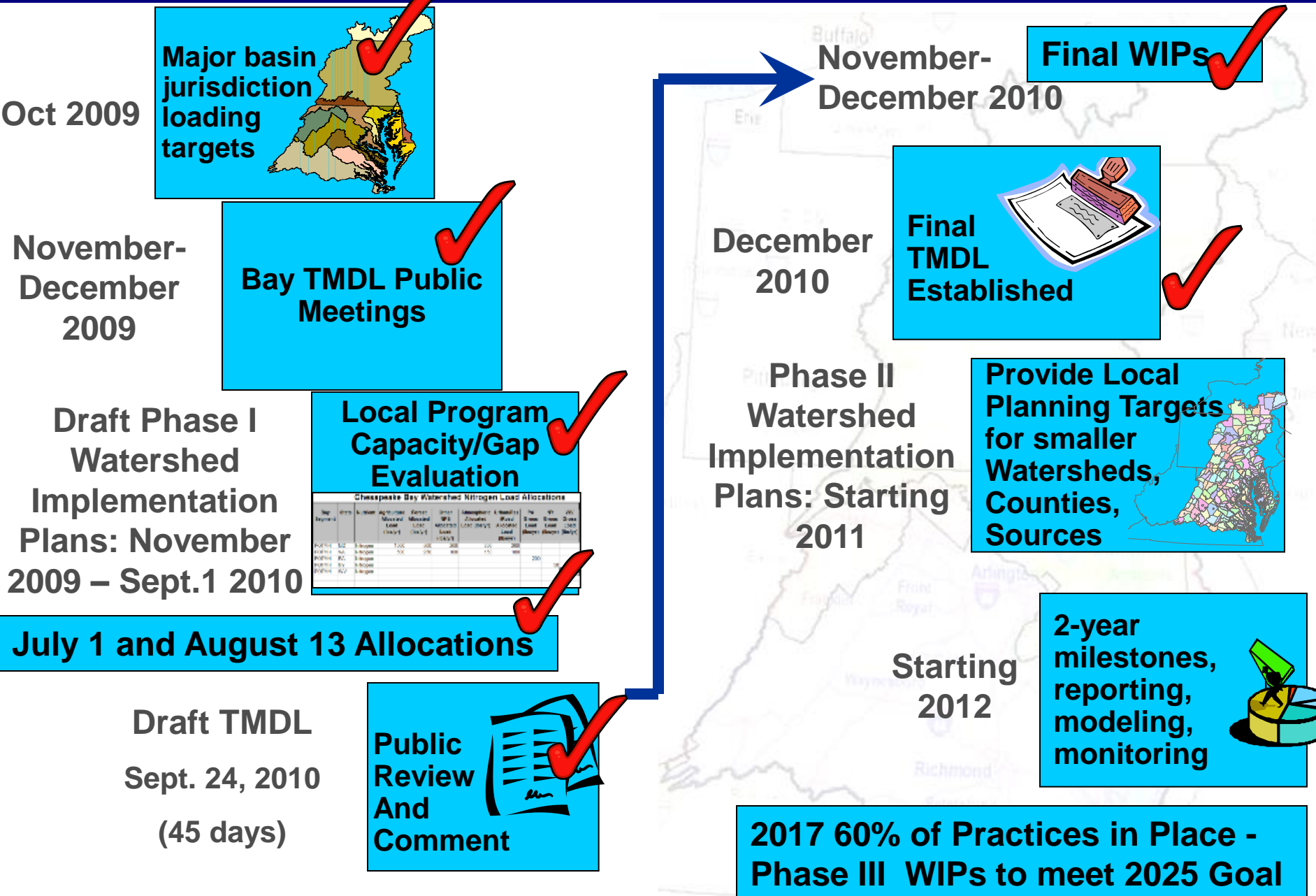


Final Chesapeake Bay TMDL

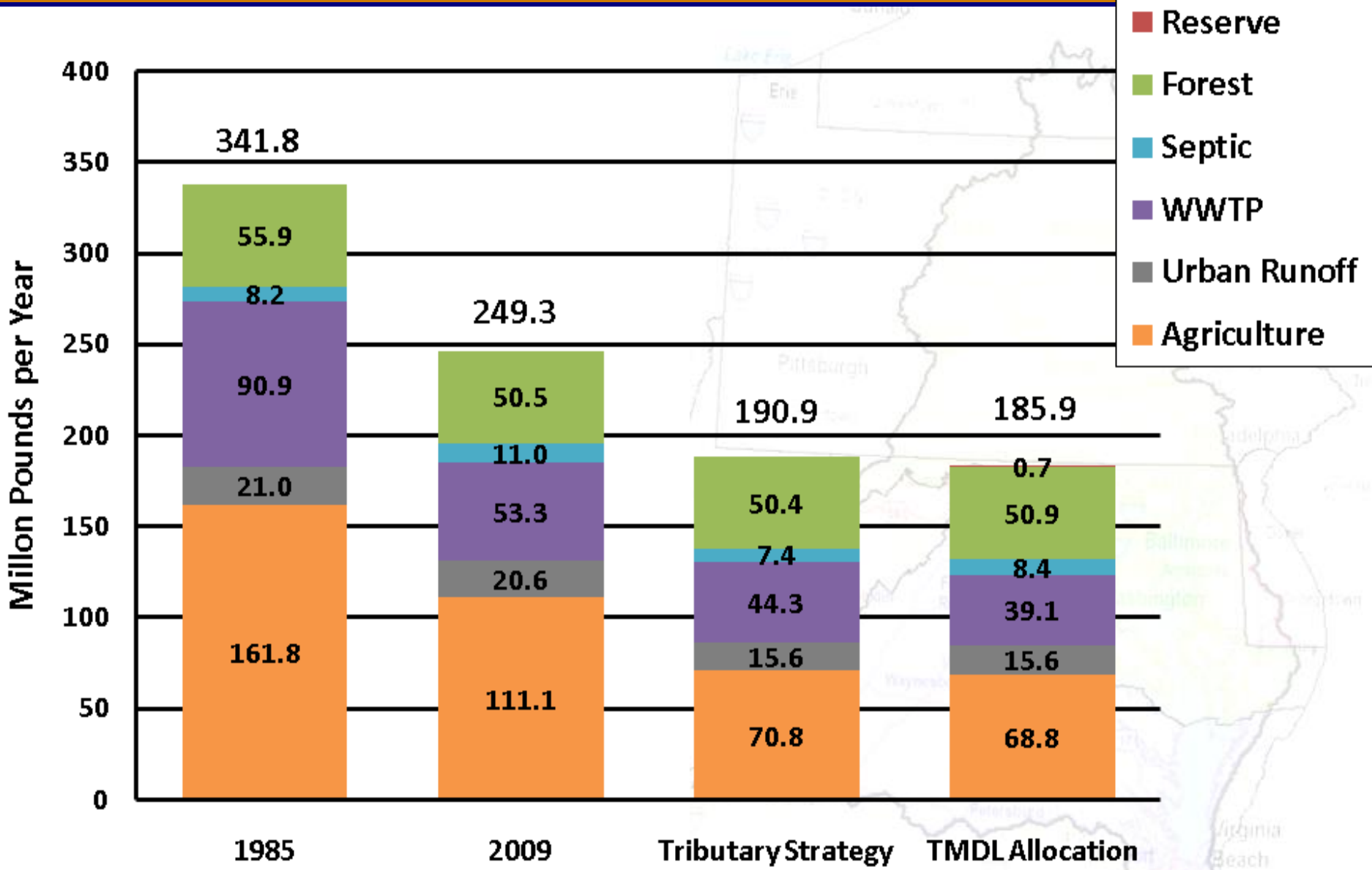


- EPA worked extensively with the six States and the District of Columbia.
 - Final TMDL is shaped by extensive input from public, stakeholder groups & the jurisdictions throughout a two-year process.
 - Largely based on Jurisdiction's WIPs
-
- Designed with rigorous accountability measures to ensure that all pollution control measures needed to restore Bay are in place by 2025, with 60 percent by 2017.
 - Restoration activities can enhance the economic value of the Bay and rivers, and be a driver for local economies.

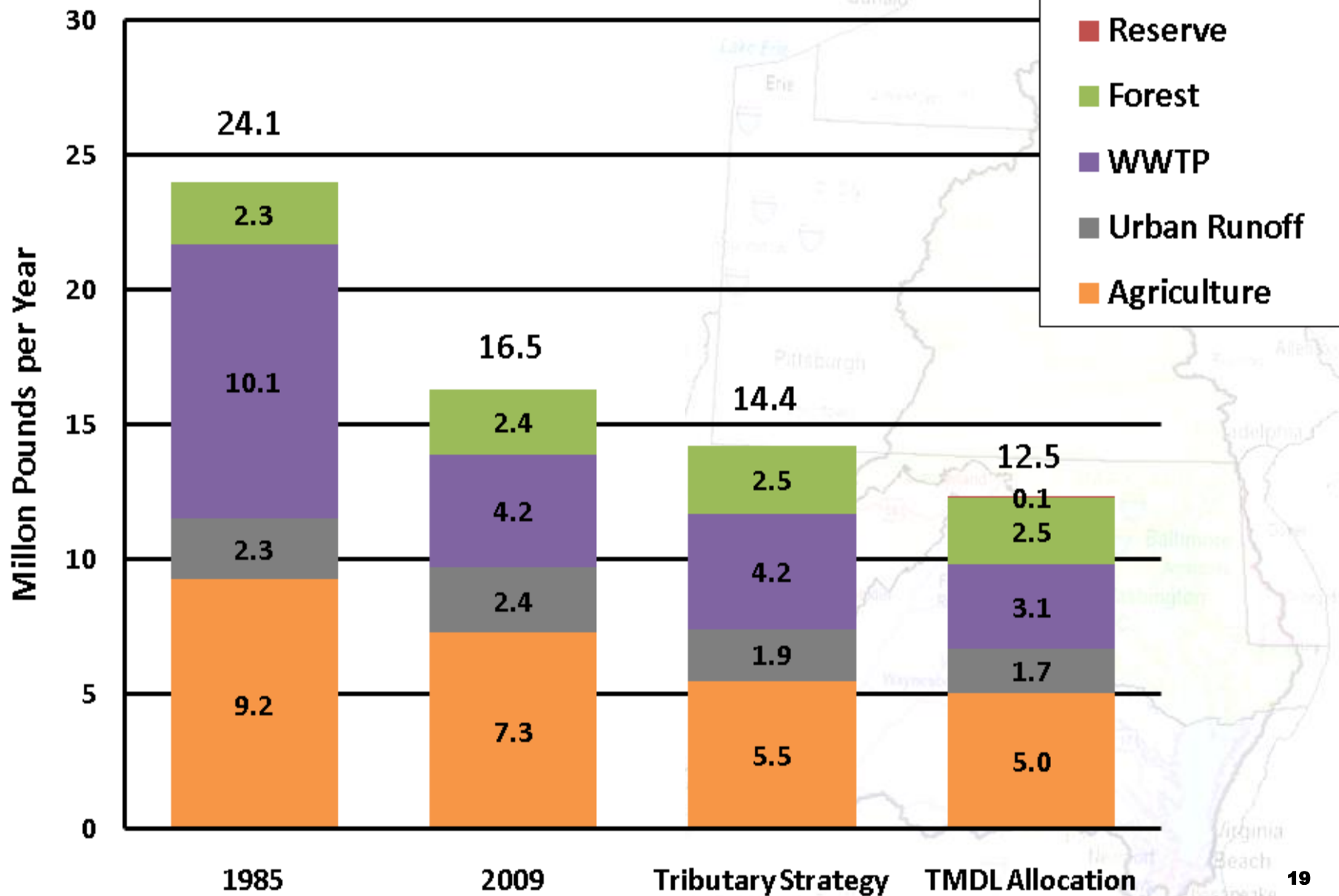
TMDL and WIP Development Schedule: 2009-2017



Nitrogen Loads by Source Sector and Scenario - Watershed Model Phase 5.3

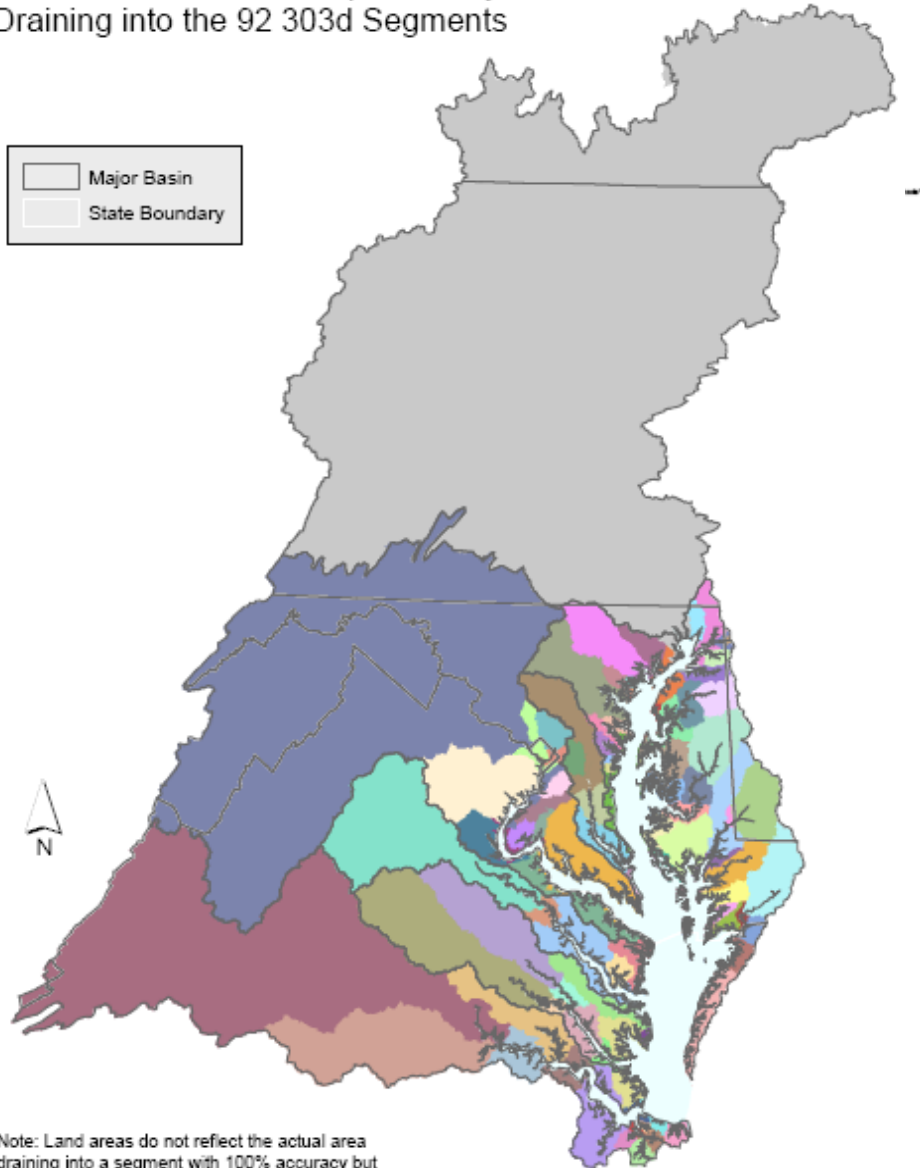


Phosphorus Loads by Source Sector and Scenario - Watershed Model Phase 5.3



Phase I WIP

Land Areas of the Chesapeake Bay Basin
Draining into the 92 303d Segments

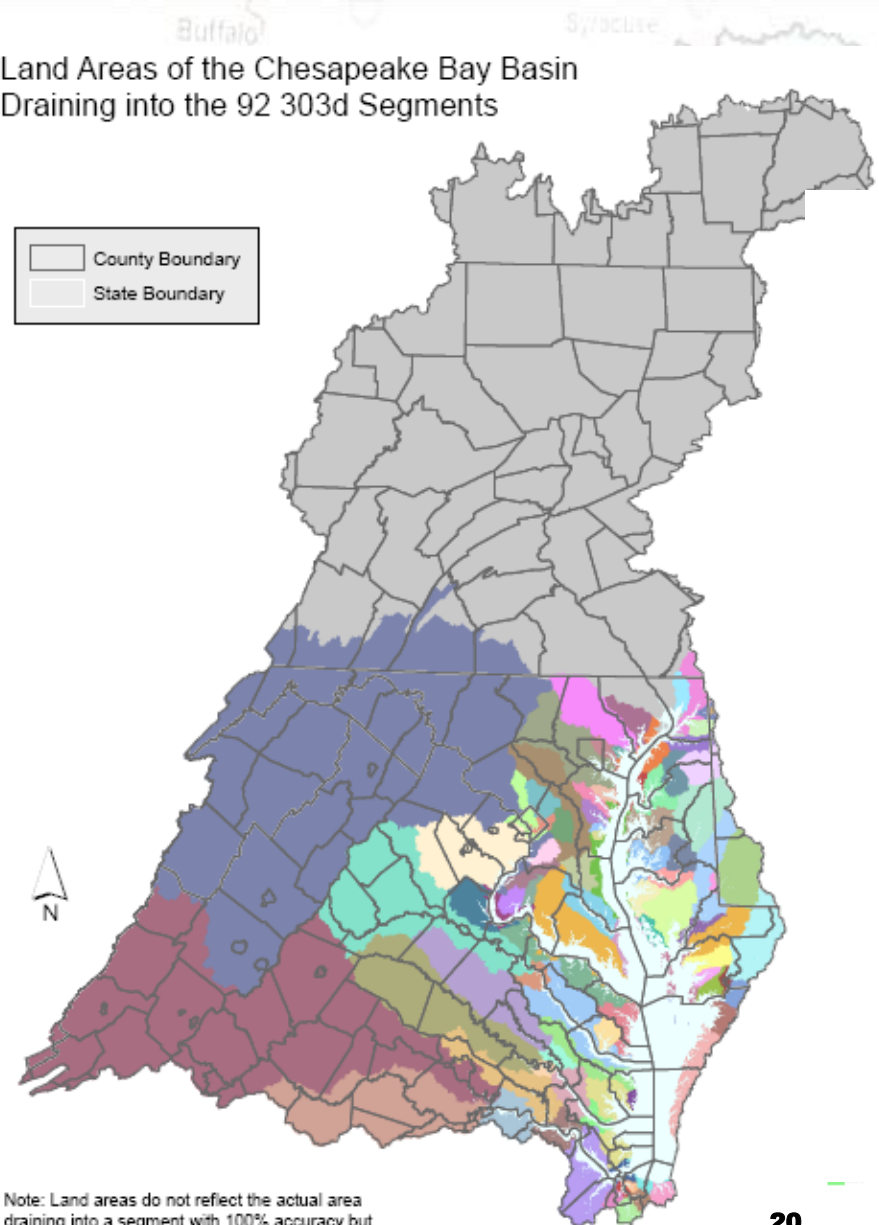


Note: Land areas do not reflect the actual area draining into a segment with 100% accuracy but are basically correct at the map scale.

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Phase II WIP

Land Areas of the Chesapeake Bay Basin
Draining into the 92 303d Segments



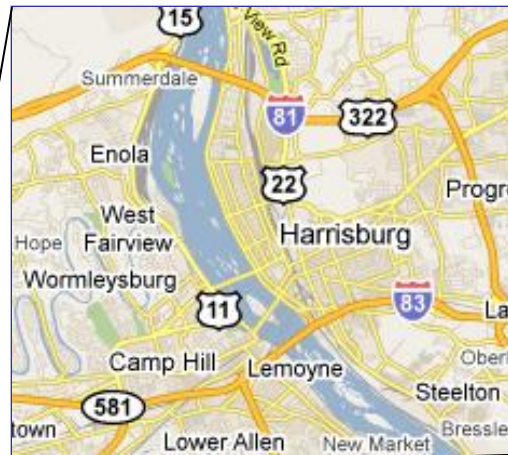
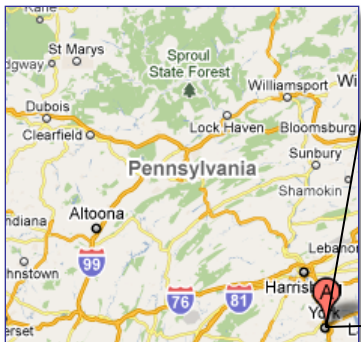
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EPA Role in WIP Development

Phase I

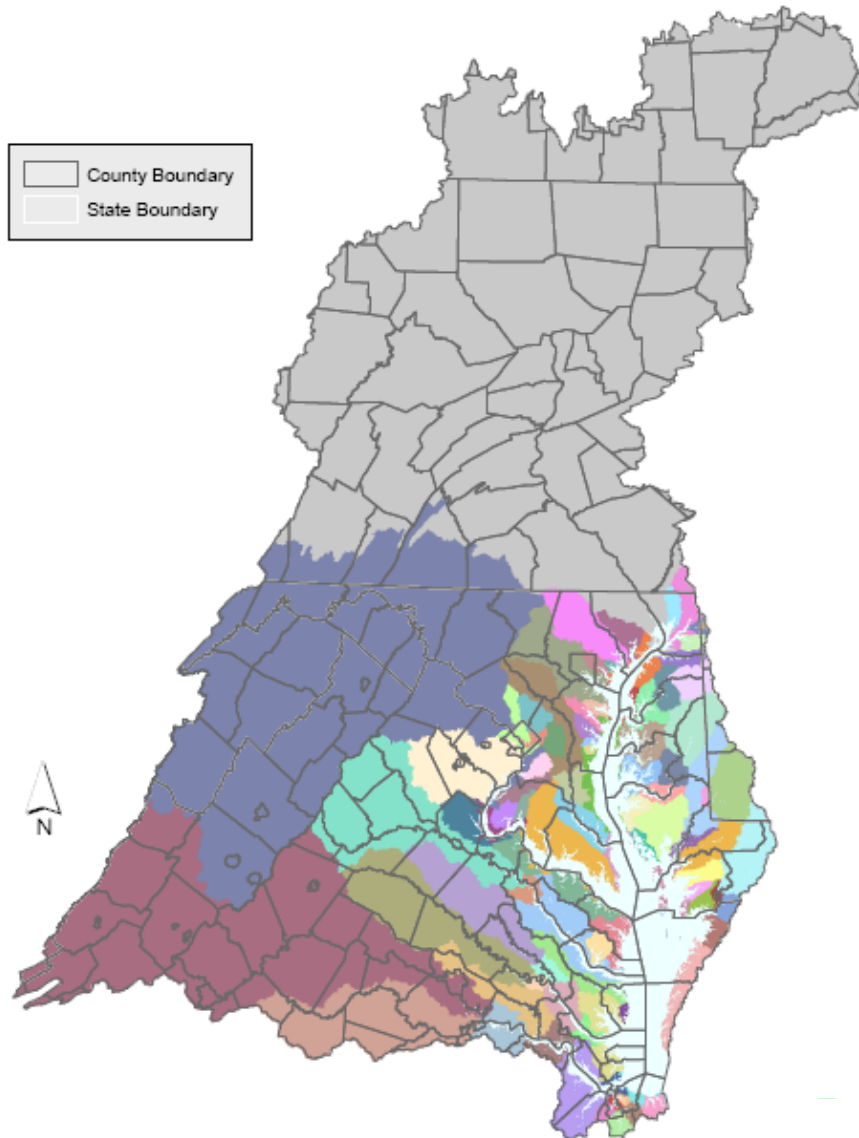
- Provide specific expectations to support Chesapeake Bay TMDL
- Lead outreach effort on TMDL
- Evaluate state strategies in Phase I WIPs
- Establish Chesapeake Bay TMDL



Phase II

- Oversight of Bay TMDL and Phase I WIP implementation
- Support jurisdictions, where requested, in local outreach effort
- Targeted reasonable assurance evaluation of state strategies
- Leave it to states to review specifics of local strategies
- Support jurisdictions in Phase II WIP development
- Modify TMDL allocations as necessary in late 2012

Purpose of Phase II WIPs



- Facilitate implementation
- Identify amount, location of practices to meet 2017 and 2025 goals
- Propose any modifications as necessary to TMDL allocations
- Provide additional opportunity for jurisdictions to demonstrate reasonable assurance
- Provide additional time (final March 31, 2012)

Phase II WIPs Provide 7 Jurisdictions with Opportunity to Refine Phase I WIPs

Expectations for Phase II

1. Complete 2 agreed-upon model changes and refine TMDL allocations accordingly
2. Allow for some refinements to Phase I management strategies. Ph II will reference and build upon Ph I
3. Provide another check-in for reasonable assurance for statewide strategies
 - Ensure no backsliding
 - Opportunity to remove “enhanced oversight” or “backstop actions” from Phase I

EPA Guides for Phase II

- Issue ***Phase II WIP Guide and Schedule for Jurisdictions***: March 30, 2011
 - Draft provided to jurisdictions for review: March 10
 - Draft provided to federal agencies for review: March 17
- Issue ***Phase II WIP Guide for Federal Lands and Facilities***: April 29, 2011
 - Developed in consultation with Federal Facilities Team
 - Draft provided to jurisdictions for review in March
- Issue ***Guide for Two-Year Milestones***: May 2011

Available at: www.epa.gov/chesapeakebaytmdl

Phase II WIP Guide for Jurisdictions



- Goal: Facilitate implementation by bridging the gap between “shoes in the cube” and “boots on the ground”
- Like shoes, one size does **NOT** fit all
- Short guide offers flexibility for how jurisdictions choose to fulfill the purposes of Phase II

Phase II WIP Guide for Federal Lands and Facilities

- Recap expectations from EO 13508 Strategy and TMDL
- Further clarifies expectations for federal agencies
- Offers approaches to document federal share of load reductions
- Discusses EPA's Role



Development & Impact of Phase II WIP Planning Targets

- EPA is asking the Bay jurisdictions to use the Phase II WIP planning targets, along with the December 2010 TMDL, when developing their Phase II WIPs. **The Phase II WIPs are expected to provide the strategies necessary to have practices in place by 2017 that would result in 60 percent of the necessary nitrogen, phosphorus, and sediment reductions needed by 2025.**
- EPA arrived at these planning targets by running the proposed reduction strategies in the Phase I WIPs, adjusted to meet the Bay TMDL issued in December 2010 through updated Watershed Model.
- **These planning targets** for nitrogen, phosphorous and sediment, while slightly higher, **represent the actions, assumptions and “level of effort” necessary to meet the final allocations in the 2010 TMDL.**

Development & Impact of Phase II WIP Planning Targets, cont'd

- This approach will build upon the work the jurisdictions have committed to implement in the Phase I WIPs and 2010 Bay TMDL.
- Jurisdictions and local stakeholders may propose adjustments to allocations through Phase II WIPs and input decks.
- EPA will use these planning targets when assessing 2-year milestone progress toward meeting the 2017 goal of having practices in place to reduce nitrogen, phosphorus, and sediment by at least 60% in the Chesapeake Bay and its tidal tributaries.



Phase II WIP Planning Targets

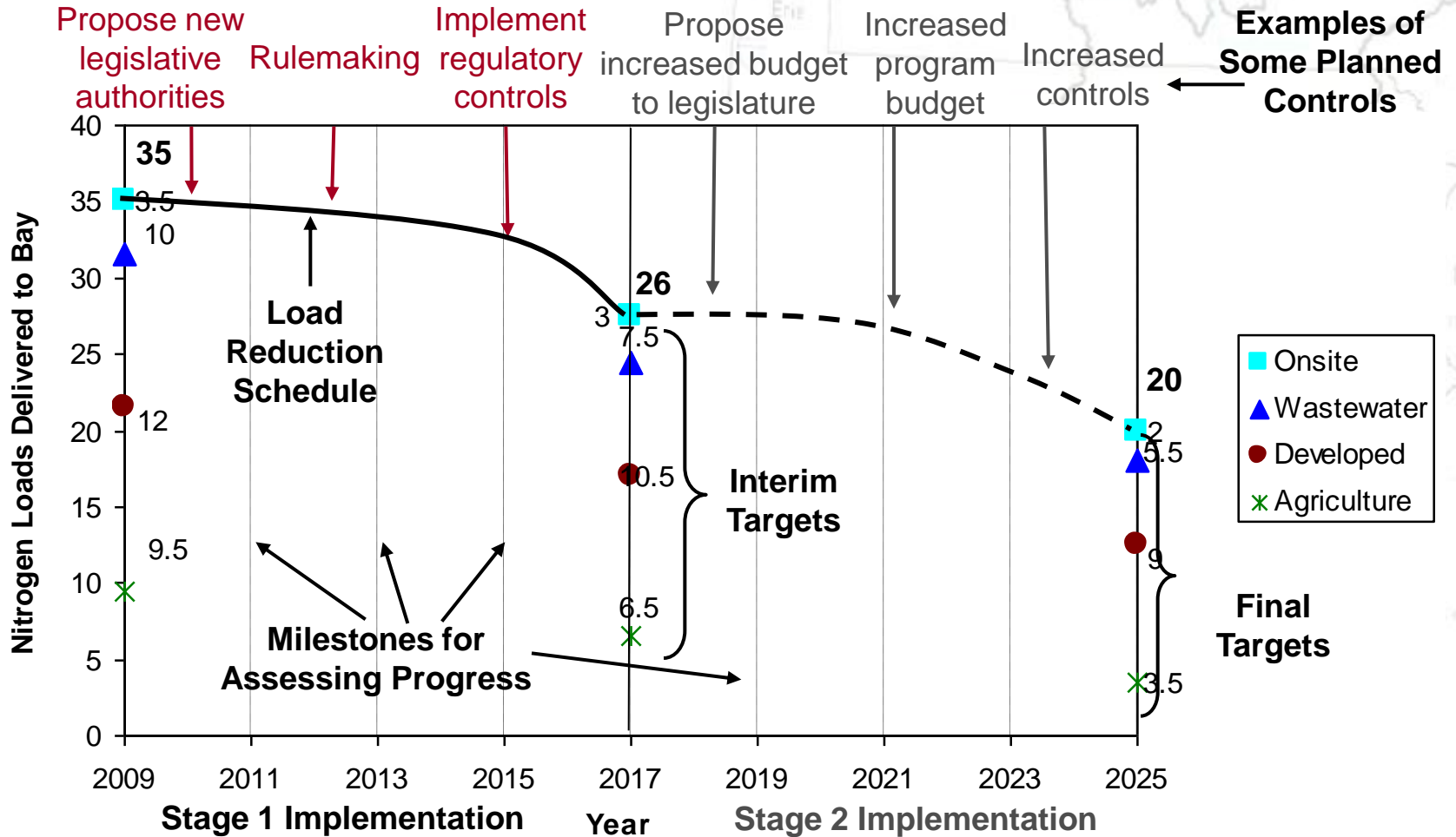
Issued August 1, 2012

Jurisdiction	Nitrogen million lbs/year	Phosphorus million lbs/year	Sediment million lbs/year
District of Columbia	2.37	0.12	17
Delaware	3.39	0.28	100
Maryland	41.17	2.81	1350
New York	8.35	0.64	304
Pennsylvania	78.83	3.60	1945
Virginia	52.46	6.46	3251
West Virginia	5.00	0.64	373
TOTAL	191.57	14.55	7341

An Adaptive Approach to Bay Restoration

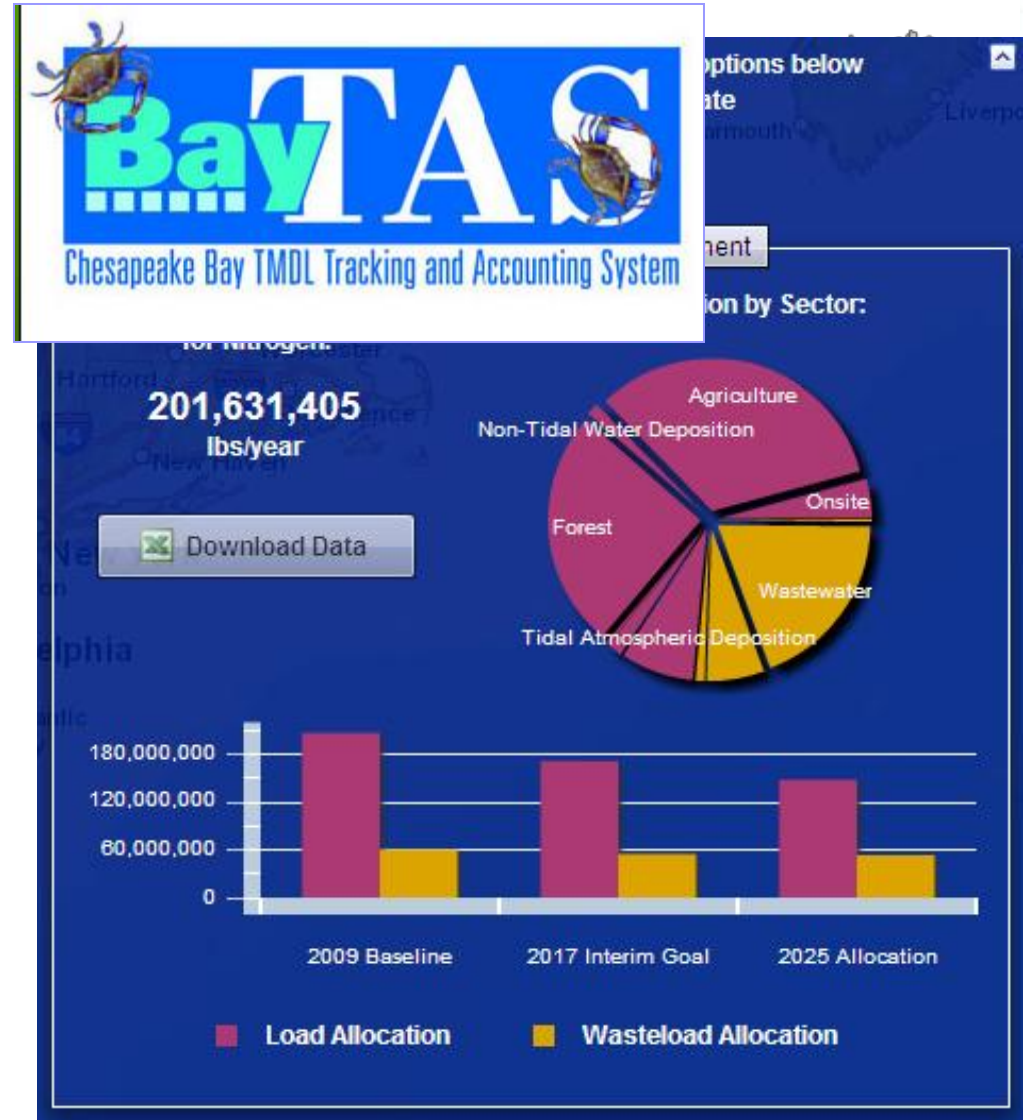
- EPA and the Bay jurisdictions are committed to a flexible, transparent, and adaptive approach in meeting the Bay TMDL as new information arises and restoration actions are implemented.
- In 2017, the Partnership has committed to a comprehensive evaluation of the progress towards meeting the TMDL and the suite of computer modeling tools.
- The result of this 2017 effort will be the development of Phase III WIPs that will include any modifications to implementation actions to ensure all practices needed to meet water quality standards are in place by 2025.

TMDL -15 Year Timeline



Phase II WIPs: Part of Chesapeake Bay Accountability Framework

- WIPs
 - Phase I: Define strategies, propose TMDL allocations
 - Phase II: Refine strategies
 - Phase III: Mid-course adjustments
- 2-Year Milestones
- Track and Assess Progress
- Federal Actions, as necessary



Expanding Partnerships & Implementation

- Now the hard work begins: implementing the pollution controls on the ground and in the water.
- EPA will be working with the jurisdictions to track progress.
- Jurisdictions will continue working with local farmers, governments, conservation districts, and businesses to develop Phase II WIPs that will facilitate local implementation.
- The jurisdictions and EPA will monitor the effectiveness of those actions in order to assess progress and water quality improvement.



- Important to remember this is not an overnight project...
We have 15 years to get the job done!
- Success depends on continued partnership, not just between federal and state government, but also with local governments, stakeholders and citizens.

QUESTIONS?



For more information, please visit:
www.epa.gov/chesapeakebaytmdl