



Chesapeake Bay Program

A Watershed Partnership



Watershed and Bay Restoration: Looking Forward

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Overview



- Health of the Bay/Water Quality
- “Bay TMDL+”
 - Watershed Implementation Plans (WIPs)
 - Consequences
- Chesapeake Bay Executive Order
- Stormwater Management: New Directions
- Questions, comments, discussion

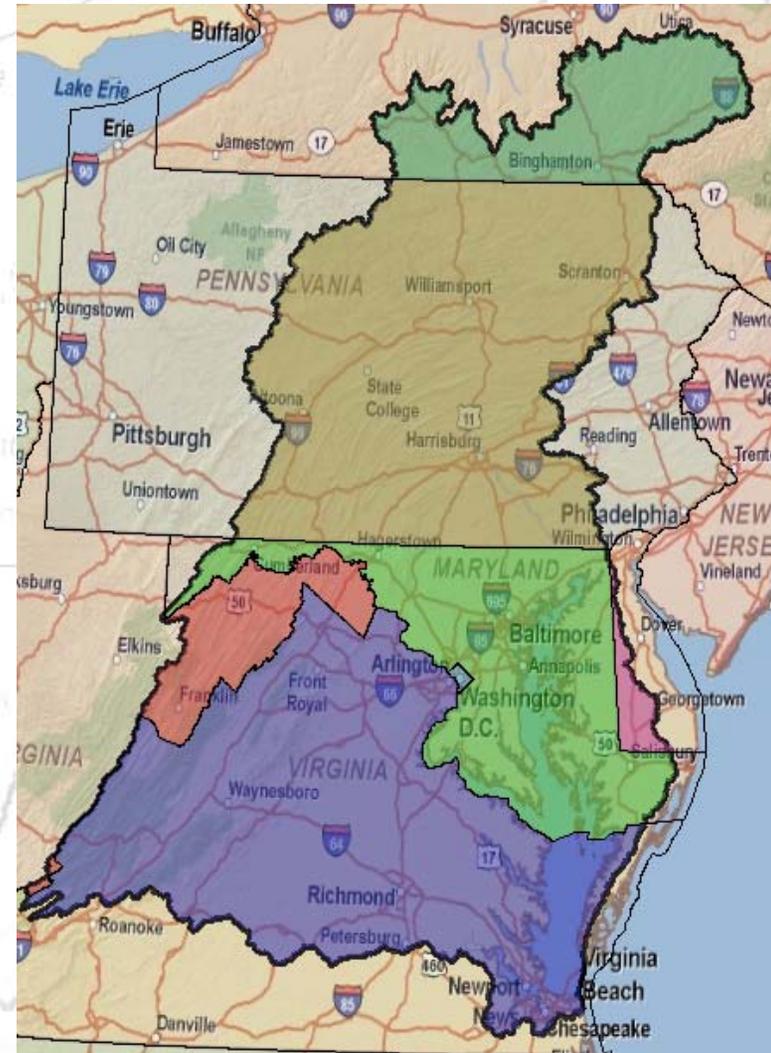




The Chesapeake Bay and Watershed



- Largest estuary in North America and the third largest in the world.
- Land-to-water ratio is 14:1; largest of any coastal water body in the world. Average depth of 21 feet.
- Supports more than 3,600 species of plants, fish and animals
- Home to almost 17 million people. About 170,000 new people move into the watershed each year.
- Tens of thousands of streams, creeks, and rivers are resources for communities throughout the watershed.
- 77,000 principally family farms.





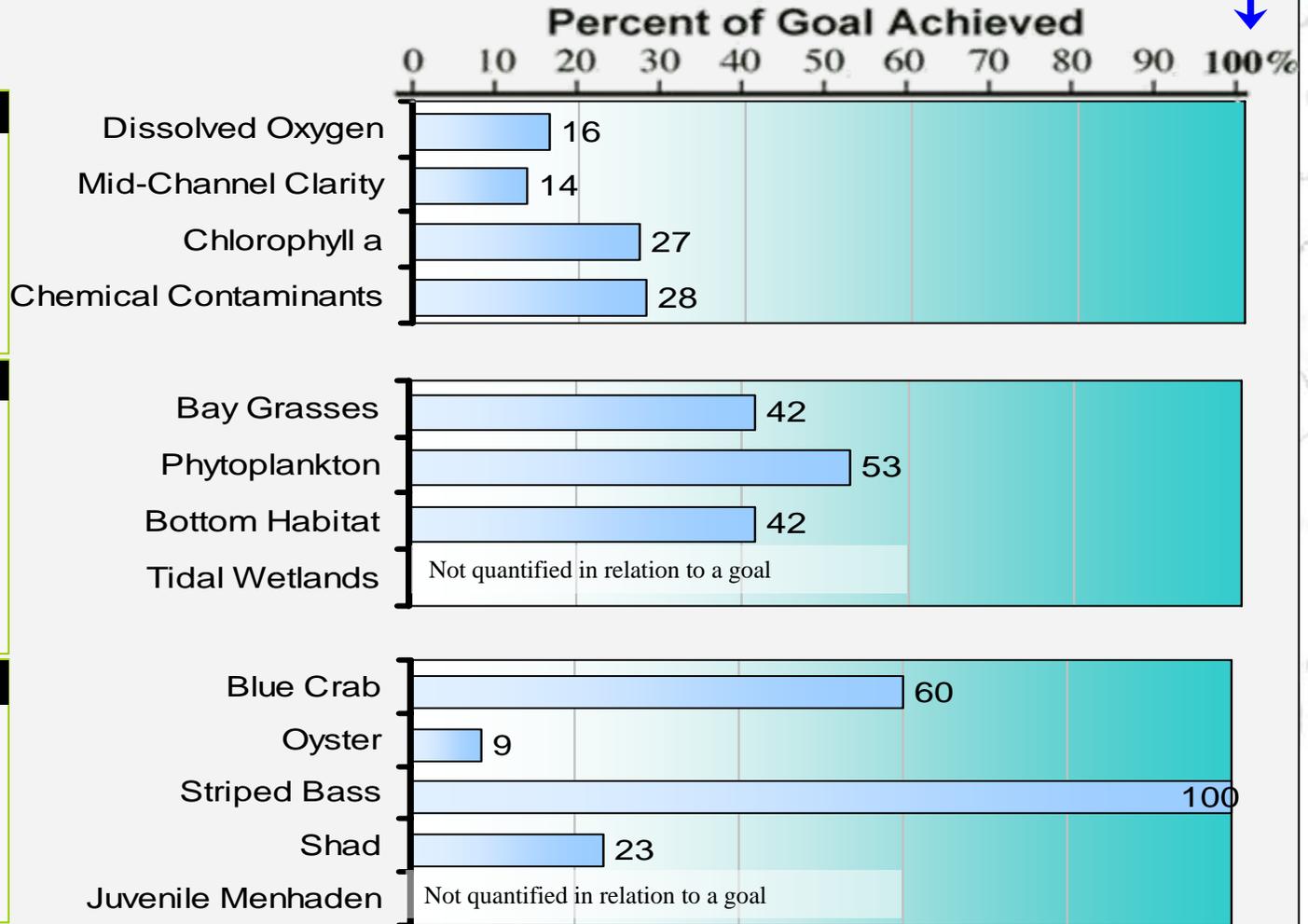
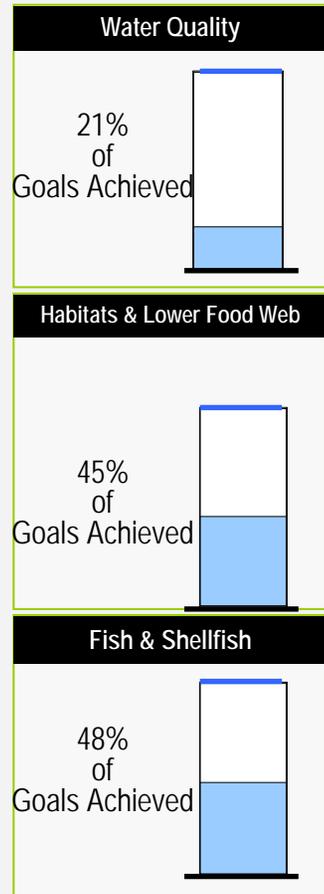
Health of the Chesapeake Bay



Restored Bay

Summary: 2008 Bay Health Assessment

Priority Areas



Source: Data and Methods: www.chesapeakebay.net/status_bayhealth.aspx



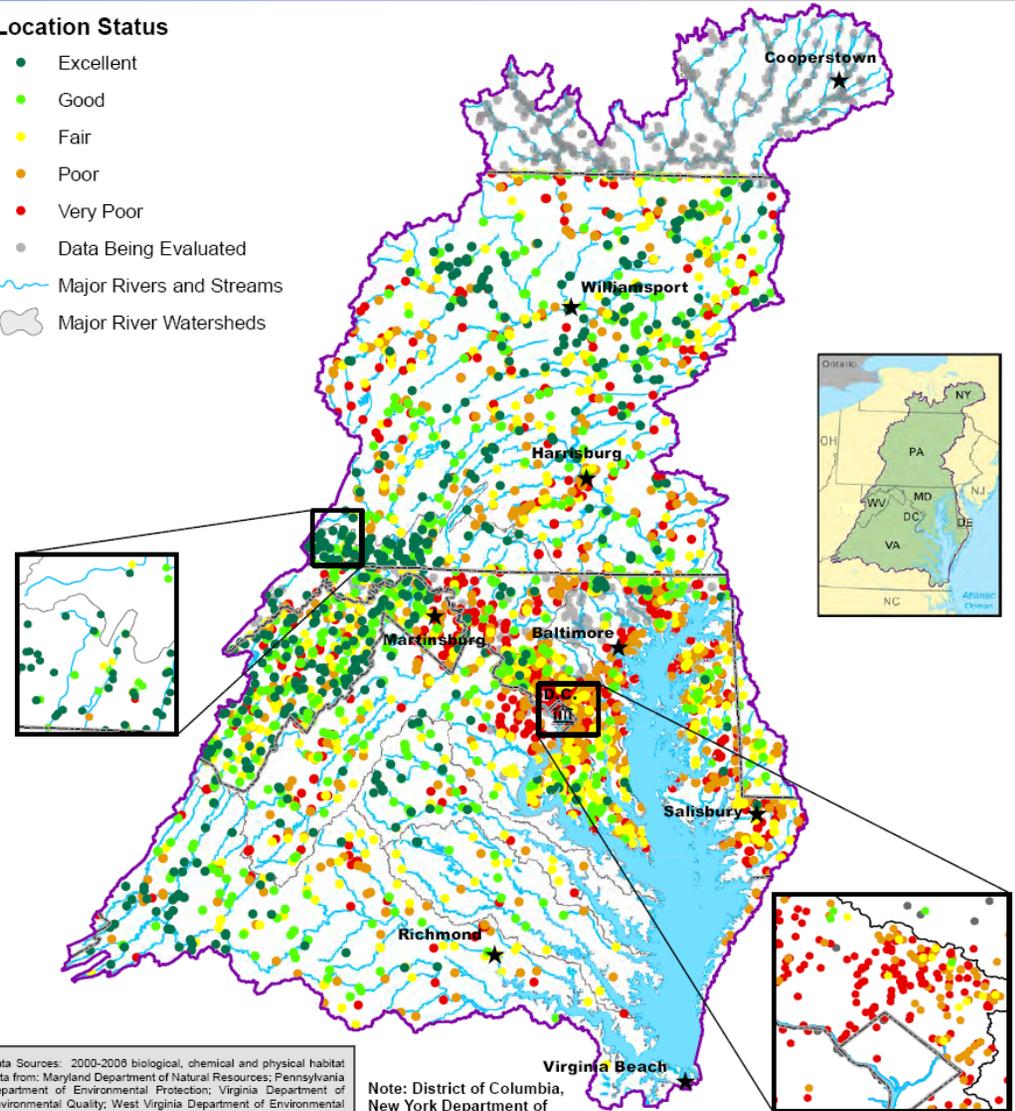
Health of the Chesapeake Bay



Health of Freshwater Streams in the Chesapeake Bay Watershed

Location Status

- Excellent
- Good
- Fair
- Poor
- Very Poor
- Data Being Evaluated
- Major Rivers and Streams
- Major River Watersheds

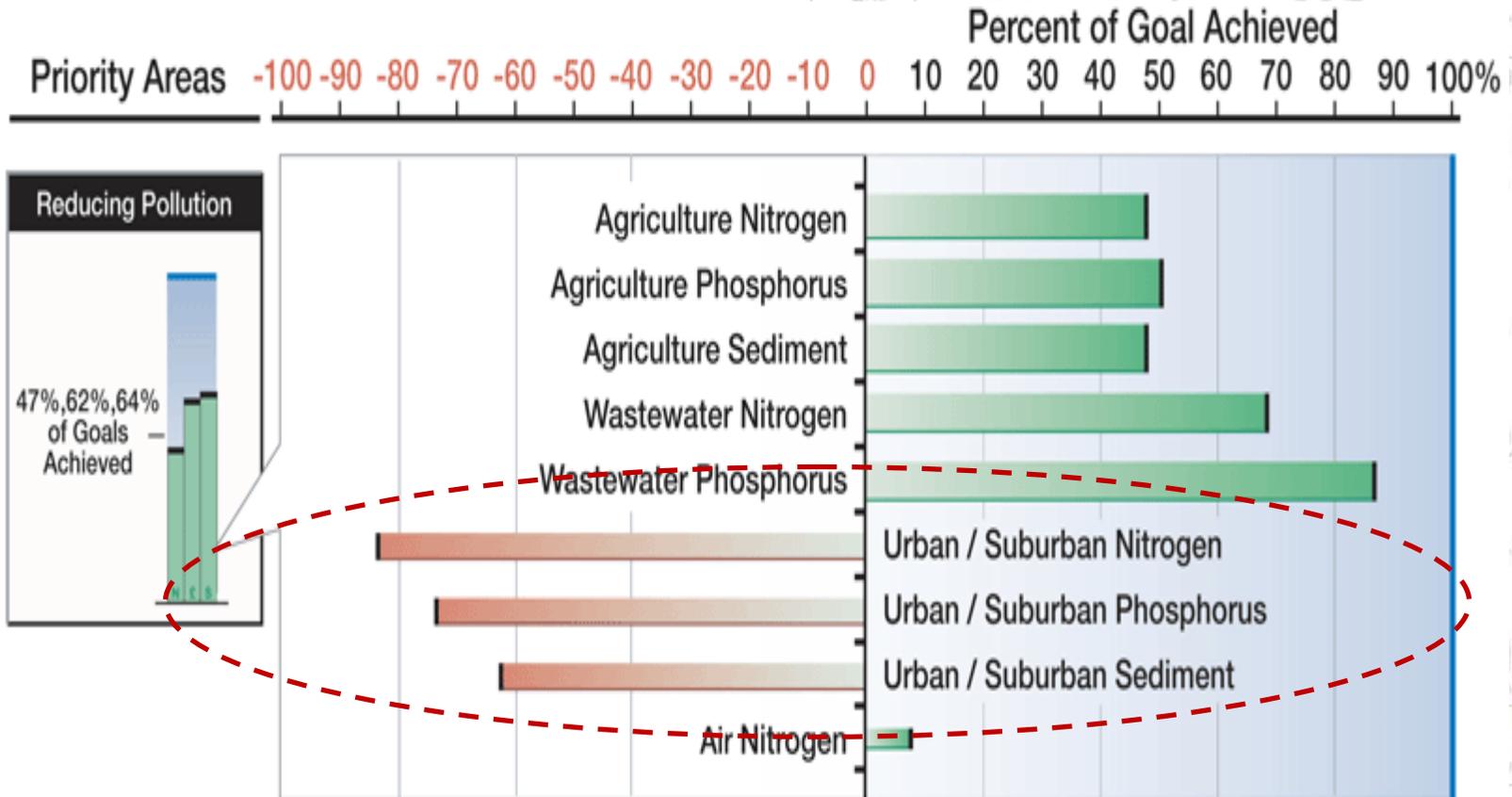


Data Sources: 2000-2008 biological, chemical and physical habitat data from: Maryland Department of Natural Resources; Pennsylvania Department of Environmental Protection; Virginia Department of Environmental Protection; Delaware Department of Natural Resources and Environmental Control; Prince Georges and Montgomery Counties MD; Fairfax County, VA; Susquehanna River Basin Commission; United States Forest Service
 For more information, visit www.chesapeakebay.net
 Disclaimer: www.chesapeakebay.net/termsfuse.htm

Note: District of Columbia, New York Department of Environmental Conservation and parts of the Maryland Department of Natural Resources data were not included in this analysis but will be in future assessments



Urban/Suburban stormwater is the only pollution source* sector in the Bay watershed that is still growing



Source: Chesapeake Bay 2007 Health and Restoration Assessment (March 2008)

Some jurisdictions may be under reporting existing stormwater management practices



Chesapeake Bay TMDL



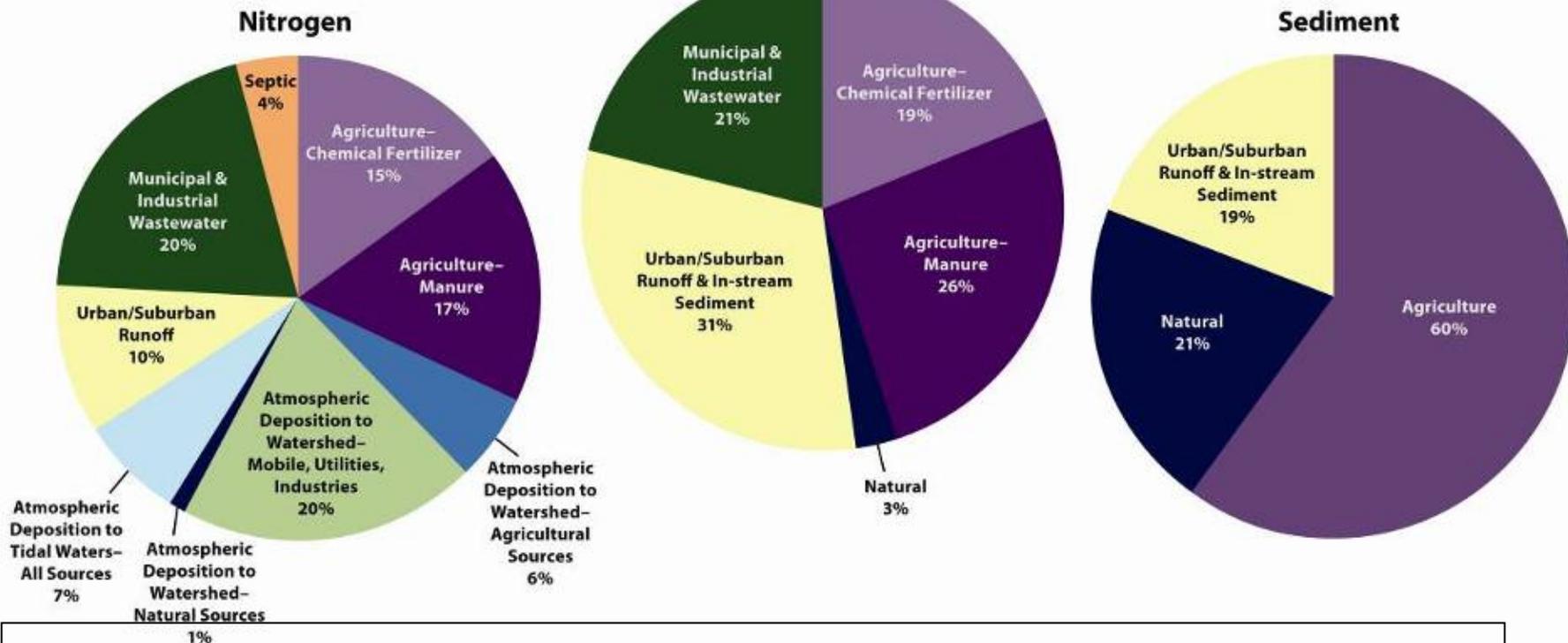


Main Sources of Pollution



- Agriculture – animal manure, commercial fertilizer
- **Urban/suburban runoff – a growing problem**
- Air pollution – tailpipes, power plants
- 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).

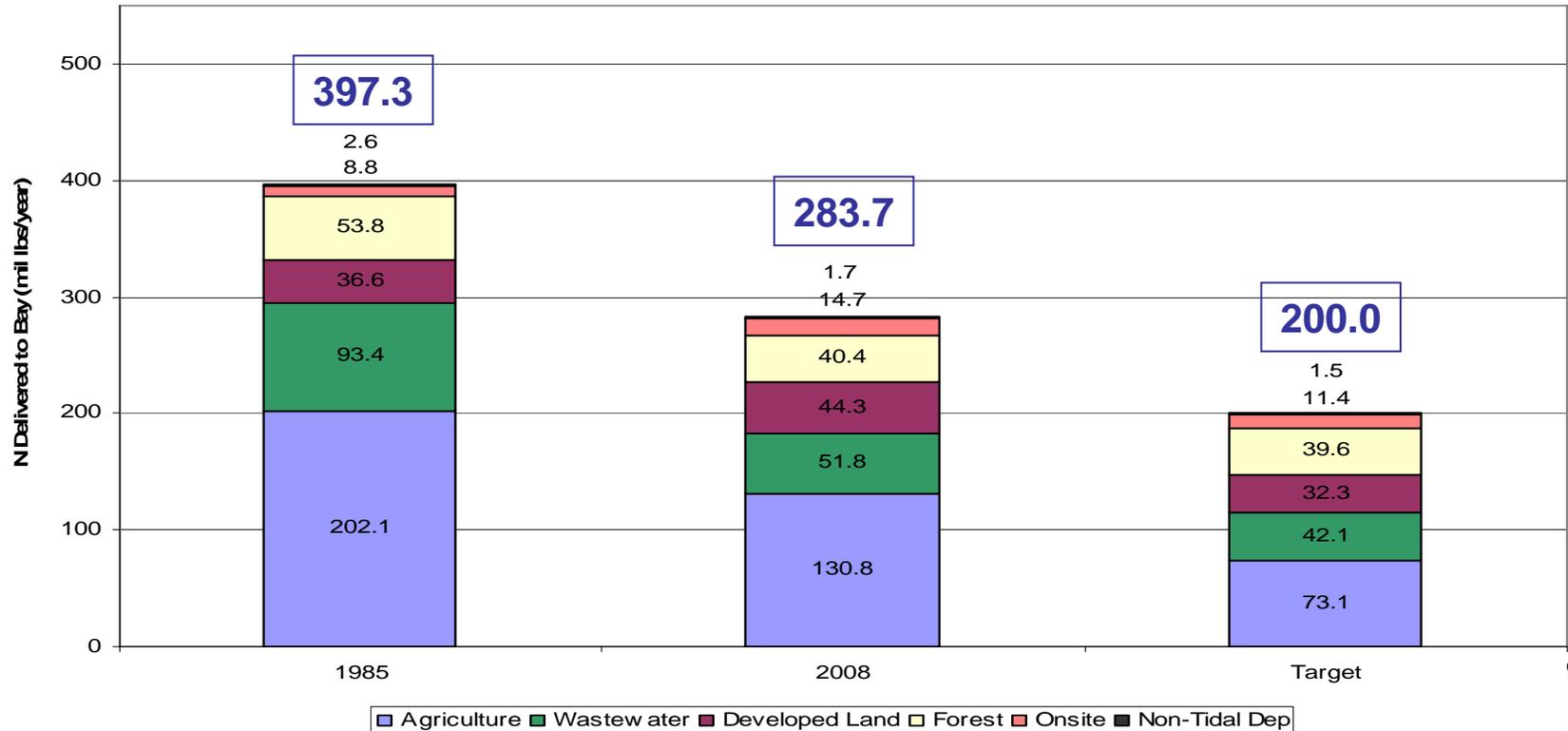


Nitrogen Loads and Targets



Nutrient Loads Delivered to the Chesapeake Bay by Watershed Model Source*,**

A. Nitrogen



* 1985 loads based on Chesapeake Bay Program Watershed Model Phase 5.1 Scenario; 2008 and Target loads are estimated. Jurisdictions would include in their Clean Water Accountability Program commitments to meeting the source sector loading targets that comprise basinwide nutrient caps. For comparison, full implementation of Tributary Strategies developed by states and DC to meet 2003 allocations would result in 244 million lbs N and 16 million lbs P delivered to the Bay annually.

** Atmospheric deposition to tidal waters is a direct input to the Water Quality and Sediment Transport Model and is not included in the Watershed Model sources illustrated here. The Watershed Model accounts for loads from atmospheric deposition to the watershed based on where they are deposited. Decreases in atmospheric deposition contribute to reductions in loads from forest, agriculture and developed land, and direct deposition to non-tidal waters.



Target Pollutant Cap Loads by State



Nitrogen

State	2008 Load	Tributary Strategy	Target Load
DC	3.54	2.12	2.37
DE	9.91	6.43	5.25
MD	58.00	42.37	41.04
NY	16.71	8.68	10.54
PA	114.40	73.48	73.64
VA	72.82	56.75	59.21
WV	7.77	5.93	5.71
Total	283.15	195.75	197.76

Phosphorus

State	2008 Load	Tributary Strategy	Target Load
DC	0.14	0.10	0.13
DE	0.34	0.25	0.28
MD	3.10	2.54	3.04
NY	0.83	0.56	0.56
PA	3.99	3.10	3.16
VA	7.18	6.41	7.05
WV	0.70	0.43	0.62
Total	16.28	13.39	14.84

* All loads are in millions of pounds per year

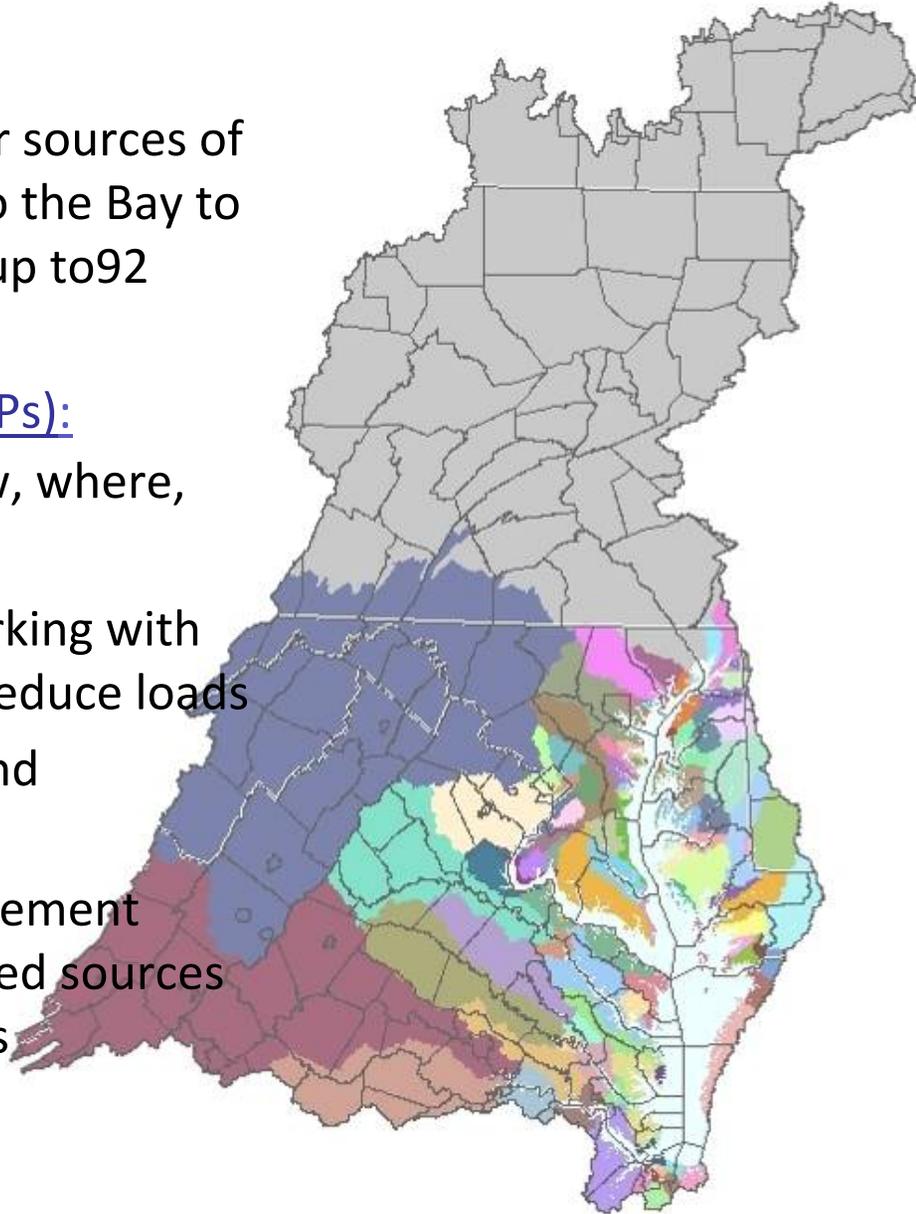


Chesapeake Bay TMDL



New accountability framework

- TMDL: Set “pollution diet” or limits for sources of nitrogen, phosphorus and sediment to the Bay to meet water quality standards (up to 92 impaired segments)
- 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
- Consequences: EPA evaluates plans and milestones and adopts as necessary
- Offsets/Trading: Support “net improvement offsets” to account for new or increased sources and trading to encourage partnerships





Watershed Implementation Plan Expectations



WIP Expectations:

- Interim and Final Target Loads
- Current Program Capacity
- Mechanisms to Account for Growth
- Gap Analysis
- Commitment to Fill Gaps: Policies, Rules, Dates for Key Actions
- Tracking and Reporting Protocols
- Contingencies for Failed, Delayed or Incomplete Implementation

Appendix with:

- o Loads divided by tidal segment drainage area, source, and sector
- o 2-year milestone loads by jurisdiction – EPA will use to assess milestones
- o No later than November 2011: Update to include loads divided by local area and controls to meet 2017 interim target load

Source: November 4, 2009 “Expectations” letter to PSC



Federal Consequences



For failure to meet EPA expectations for Watershed Implementation Plans and 2-year milestones

Consequences could include:

- Expanding coverage of NPDES permits to sources that are currently unregulated
- Increasing oversight of state-issued NPDES permits
- Requiring additional pollution reductions from point sources such as wastewater treatment plants
- Increasing federal enforcement and compliance in the watershed
- Prohibiting new or expanded pollution discharges unless sufficient offsets are provided
- Conditioning or redirecting EPA grants
- Revising water quality standards to better protect local and downstream waters
- Other federal actions as authorized, including cooperation with DOT and USDA to consider additional actions



Funding and Technical Assistance

- **EPA will provide technical assistance and almost \$12 million to state and local partners to help them meet EPA's expectations for the Bay TMDL through three efforts:**
 - Regulatory and Accountability Program grants
 - \$11.2 million, to the 6 watershed states and the District of Columbia
 - Contractor support to states/DC for Watershed Implementation Plan development
 - Resources to support the development of Phase I & II of WIPs
 - Promoting “local implementation pilots”



Chesapeake Bay Executive Order





Section 203 Draft Strategy – Released November 9

Initiatives support three major goals:

- Restore Clean Water
- Conserve Treasures Places and Habitats, Wildlife and Fish
- Adapt to the Impacts of Climate Change

Goals to be achieved by three approaches:

- Empower local efforts
- Decision-making through science
- New era of federal leadership

Key Provisions

- Fundamental shift from voluntary approach to more regulation.
- Regulatory authority will be expanded to increase accountability for pollution.
- Commitment to two-year milestones for all major actions
- Establish 2025 as year all mechanisms for a restored Bay will be in place
- Revisions to Goals, Milestones, and Indicators to be made by FLC and EC before May 2010



Executive Order



Public Comments – Key Themes

- Voluntary initiatives have not yielded necessary results.
- Strategy needs higher level of detail, bolder / game changing actions.
- Funding will be necessary for stakeholders to carry out proposed programs.
- Support for particular elements, e.g. Treasured Landscapes, Citizen stewardship, education, etc.
- Build on existing systems and more clearly consider integration of tools and initiatives developed by outside organizations.
- FLC must consider unintended adverse consequences resulting from actions (e.g, “do no harm”)
- Climate change should be considered throughout the strategy. Mitigation measures should be added.
- EPA has exceeded its statutory authority in the draft strategy.



Executive Order



Next Steps

- Goal and Performance Measure Framework – March 2010
- Final strategy to be issued in May 2010
- Annual action plan, October 2010
- Annual progress report (205) and enhanced Bay Barometer in 2011





Stormwater



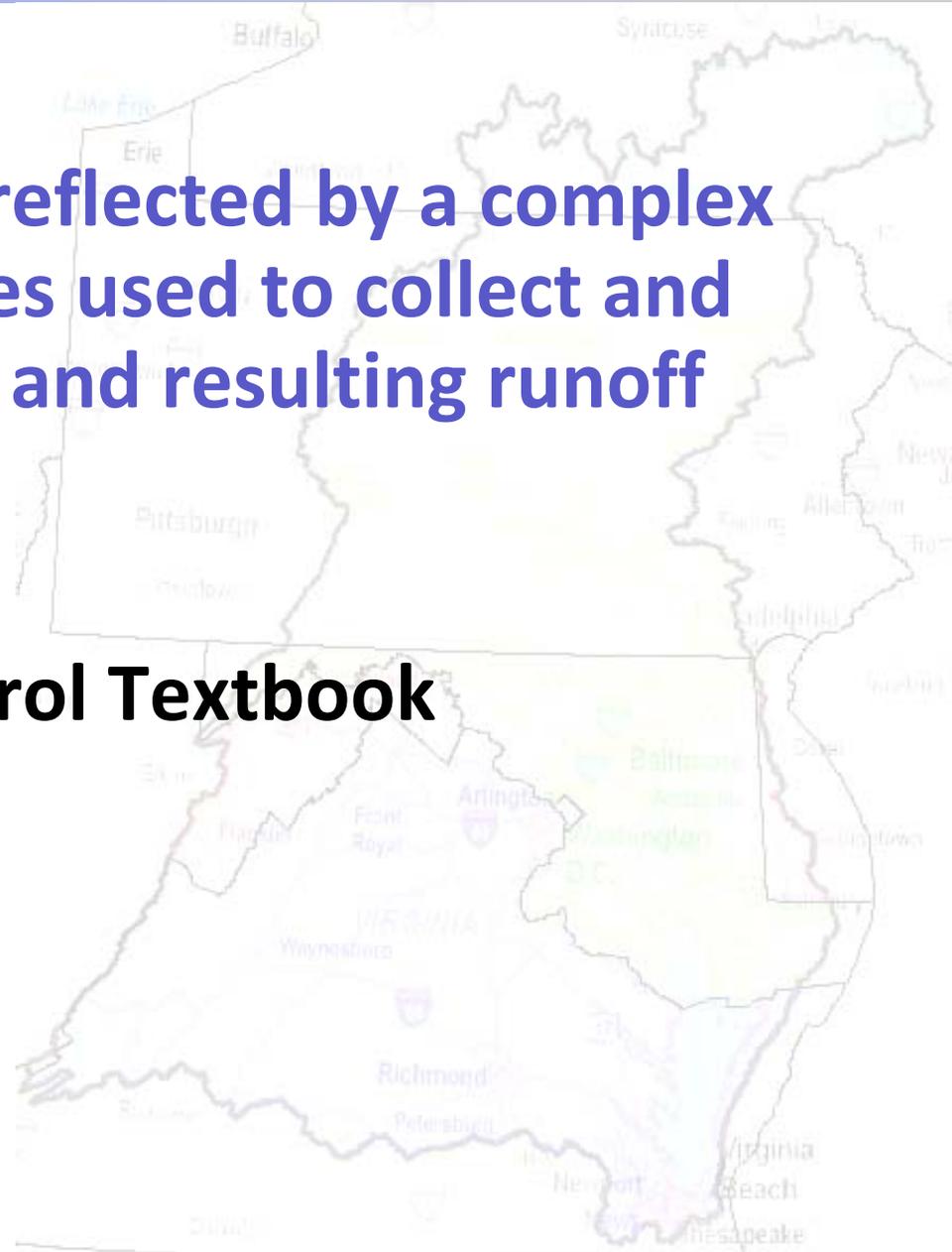


The Old Storm Water Management View



“SW management is reflected by a complex system of conveyances used to collect and remove precipitation and resulting runoff from the site...”

**Water Pollution Control Textbook
Circa 1977**





The SW Road Ahead... Under (re)construction...



Regulatory changes will reset “performance expectations...”

- State stormwater rules
- National and Bay stormwater rule
- Evolution of NPDES permits
- CB TMDL-driven actions
- Section 438 – Energy Independence and Security Act

New “stormwater paradigm” taking off

- Runoff reduction, ESD, etc.
- Varying degrees of performance...

Innovators achieving “better than nature”

- Stunning examples...
- Supported by grants, awards, recognition





Initiated Stormwater Rulemaking



Timeline for Stormwater Rulemaking

- Oct. 30, 2009 - **Federal Register (FR) notice (EPA-HQ-OW-2009-0817)** announcing EPA's intent to distribute questionnaires (Information Collection Request (ICR)) seeking data to inform the rulemaking from the following groups:
 - Owners, operators, developers, and contractors of developed sites
 - Owners or operators of MS4s
 - States and territories
- Jan. – Mar. 2010 – Listening Sessions input on preliminary rulemaking considerations (**FR Notice published Dec. 28, 2009, (EPA-HQ-OW-2009-0817)**)
- Spring 2010 – EPA expects to publish a final FR ICR notice with 30-day comment period and distribute questionnaires in the summer
- Late 2011 – EPA expects to propose a rule to be published in the FR for public comment
- Late 2012 – EPA expects to take final action

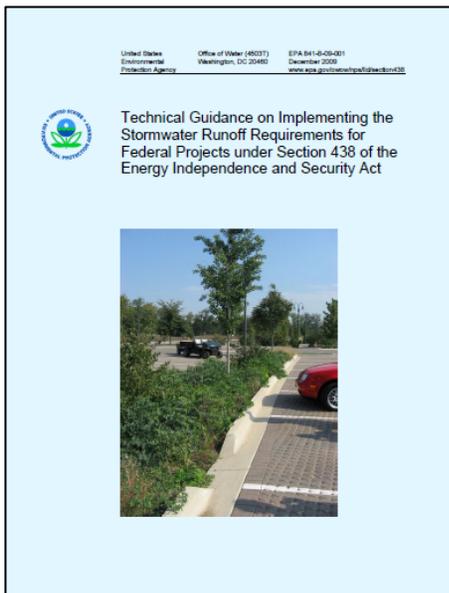


EISA 438 Guidelines



Energy Independence and Security Act (EISA)

- Section 438 – Requires federal agencies to maintain or restore the predevelopment hydrology of the site of any project with a footprint that exceeds 5,000 square feet.
- Predevelopment hydrology = runoff volume, rate, temperature, and duration of flow that typically existed on the site before human-induced land disturbance occurred.



Guidelines issued December 2009

- Focus on retaining rainfall through infiltration, evaporation/transpiration, and re-use.
- Compliance achieved using low impact stormwater management practices including: reducing impervious surfaces, vegetative practices, porous pavements, cisterns and green roofs.
- Two options to demonstrate compliance:
 - 1) manage total volume of rainfall from 95th percentile storm or
 - 2) site-specific hydrologic analysis.



Roles of Locals



- **Front line advocates**
- **Catalysts for local action**
- **Ability to bring groups together**
- **Generator of local data**
- **Knowledge base**
- **Understanding of what actions needed to achieve local goals**
- **Citizen outreach and engagement**





Discussion



For more information visit:

Executive Order: <http://executiveorder.chesapeakebay.net/>

Chesapeake Bay TMDL: <http://www.epa.gov/chesapeakebaytmdl/>

Support: http://archive.chesapeakebay.net/pubs/WIP_Support_2_10ka.pdf