

Chesapeake Bay TMDL Update

Presented to
Hampton Roads Planning District Commission

Jennifer Tribo
Senior Water Resources Planner
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Agenda Item #5

Attachment 5-B



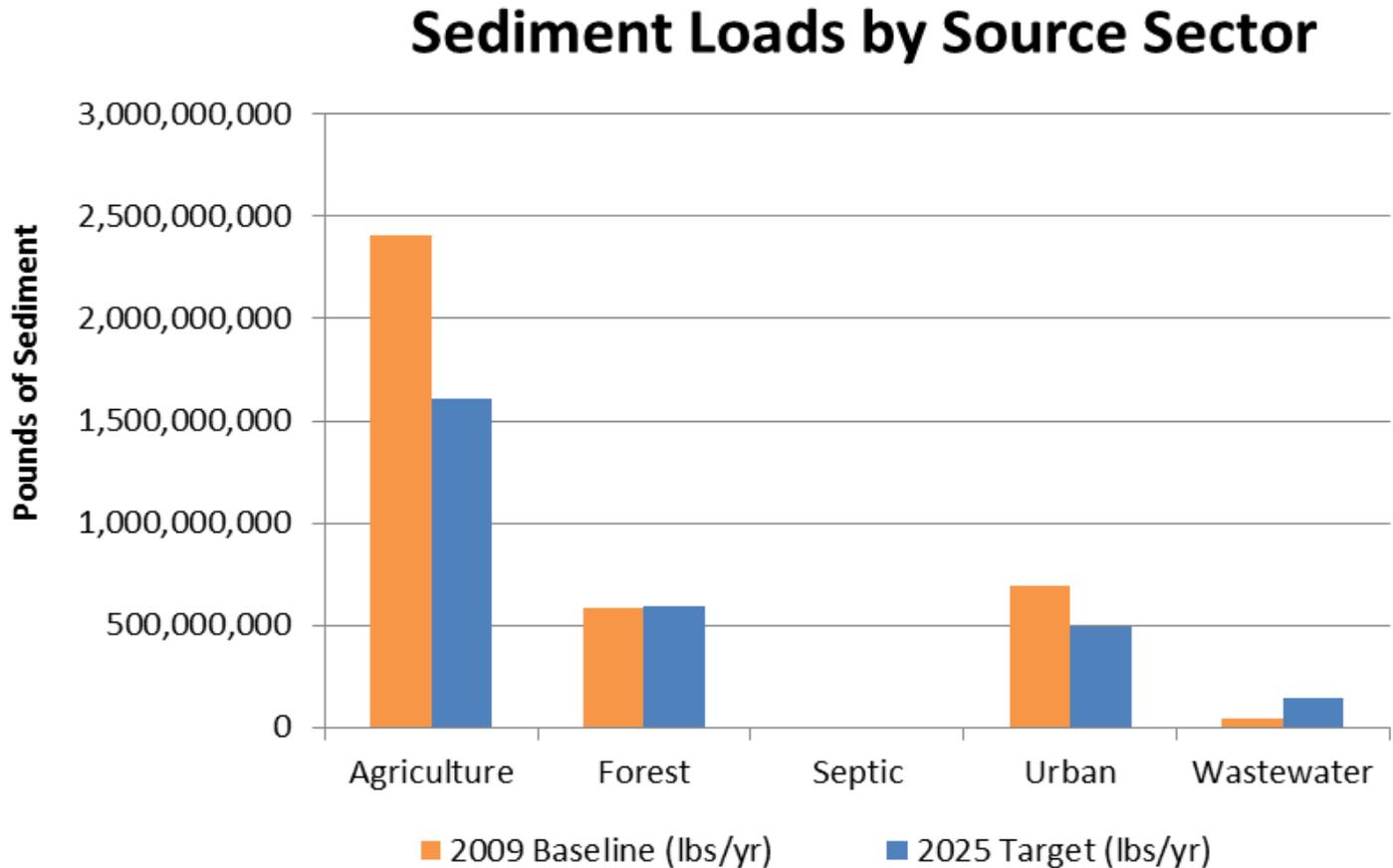
Chesapeake Bay TMDL Process

- TMDL Developed: December 2010
- Phase II WIPs: January 2012
- Midpoint Assessment: 2017
 - ❑ Bay Model will be run with updated data to assess implementation progress.
 - ❑ EPA will determine if revisions to the TMDL are necessary.
- Phase III WIPs: 2018
 - ❑ Opportunity to revise Virginia's strategy to meet the TMDL.

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Virginia Load Reductions by Sector



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HRPDC Concerns with TMDL and WIP

1. Inconsistencies between model data and local data.
2. Virginia used estimates for BMP implementation in its baseline scenario.
3. Cost of stormwater BMPs is very high compared to other sectors.
4. All urban lands treated equally in Virginia's WIP.
 - No accounting for past stormwater treatment.
 - No prioritization based on areas with highest delivered loads.
5. No clear plan to address non regulated urban loads.



1. Incorporation of Local Land Use Data

➤ The Problem:

- ❑ Bay Model input data does not match local land use data.

➤ The Solution:

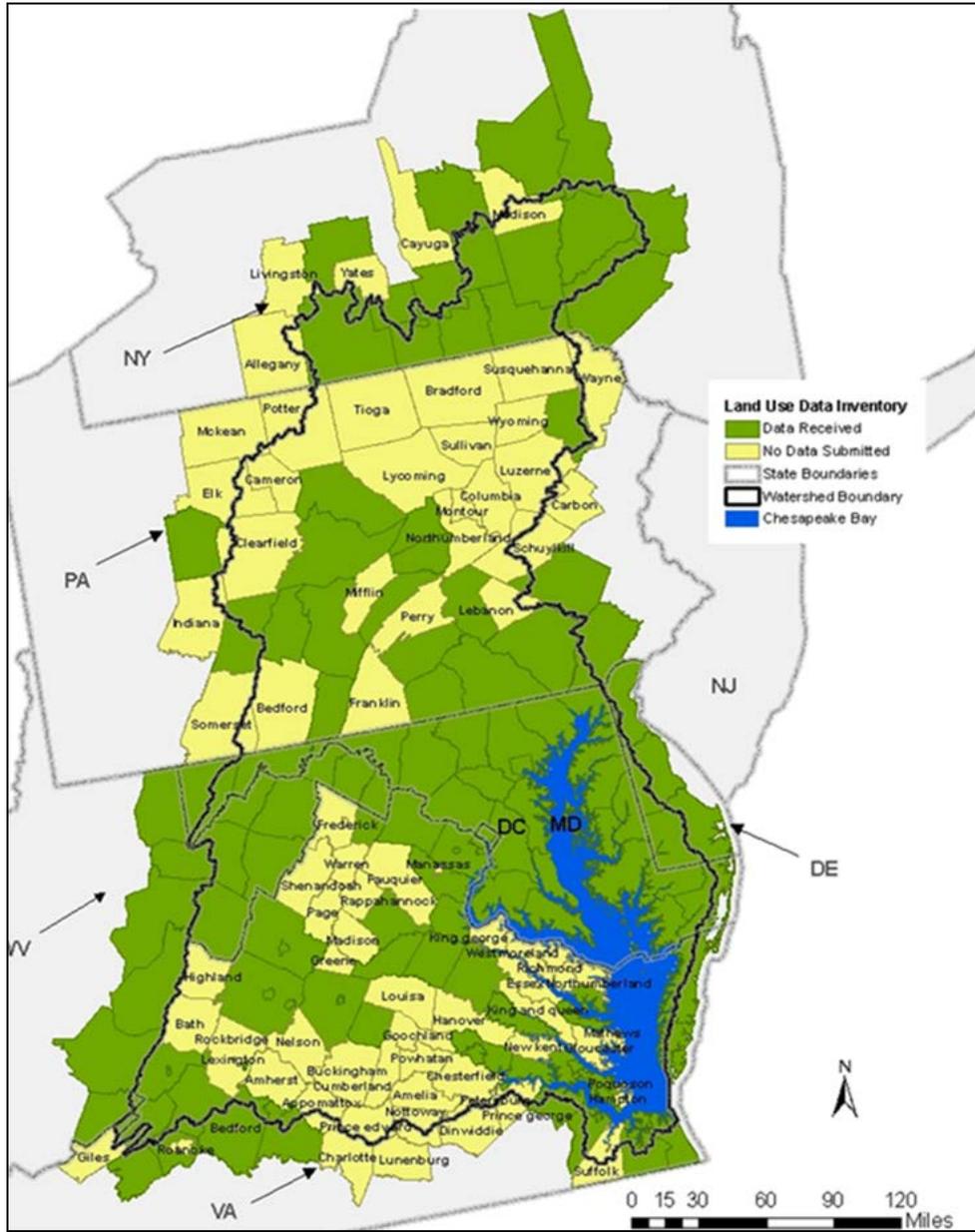
- ❑ **The Bay Program solicited local land use and land cover data from localities throughout the Bay watershed.**
- ❑ **Virginia is developing a statewide, high resolution land cover layer for use in the Bay Model.**

➤ The Impact:

- ❑ The revised Model will utilize the most up to date, high resolution land use/land cover data available.
- ❑ Load distributions by source sector may change at the small watershed scale.



Local Land Use Data Available



2. Inaccurate Historic BMPs in Virginia

➤ The Problem:

- ❑ Virginia did not have an accurate accounting of urban BMPs, so they used estimates during the Phase I WIP.

➤ The Solution:

- ❑ **Virginia is cleaning up their historic BMP data and working with localities to provide more accurate numbers to the Bay Program.**

➤ The Impact:

- ❑ Localities may see an increase or decrease in the amount of acres treated by BMPs in their locality.
- ❑ These numbers will be a more accurate reflection of real implementation.



3. Stormwater BMPs are not Cost Effective

➤ The Problem:

- ❑ Stormwater BMPs are orders of magnitude more expensive than agricultural and point source BMPs.

➤ The Solution:

- ❑ **Virginia should invest in research for innovative stormwater BMPs.**
- ❑ **Focus on nitrogen reductions from air.**
- ❑ **Multi-sector trading.**

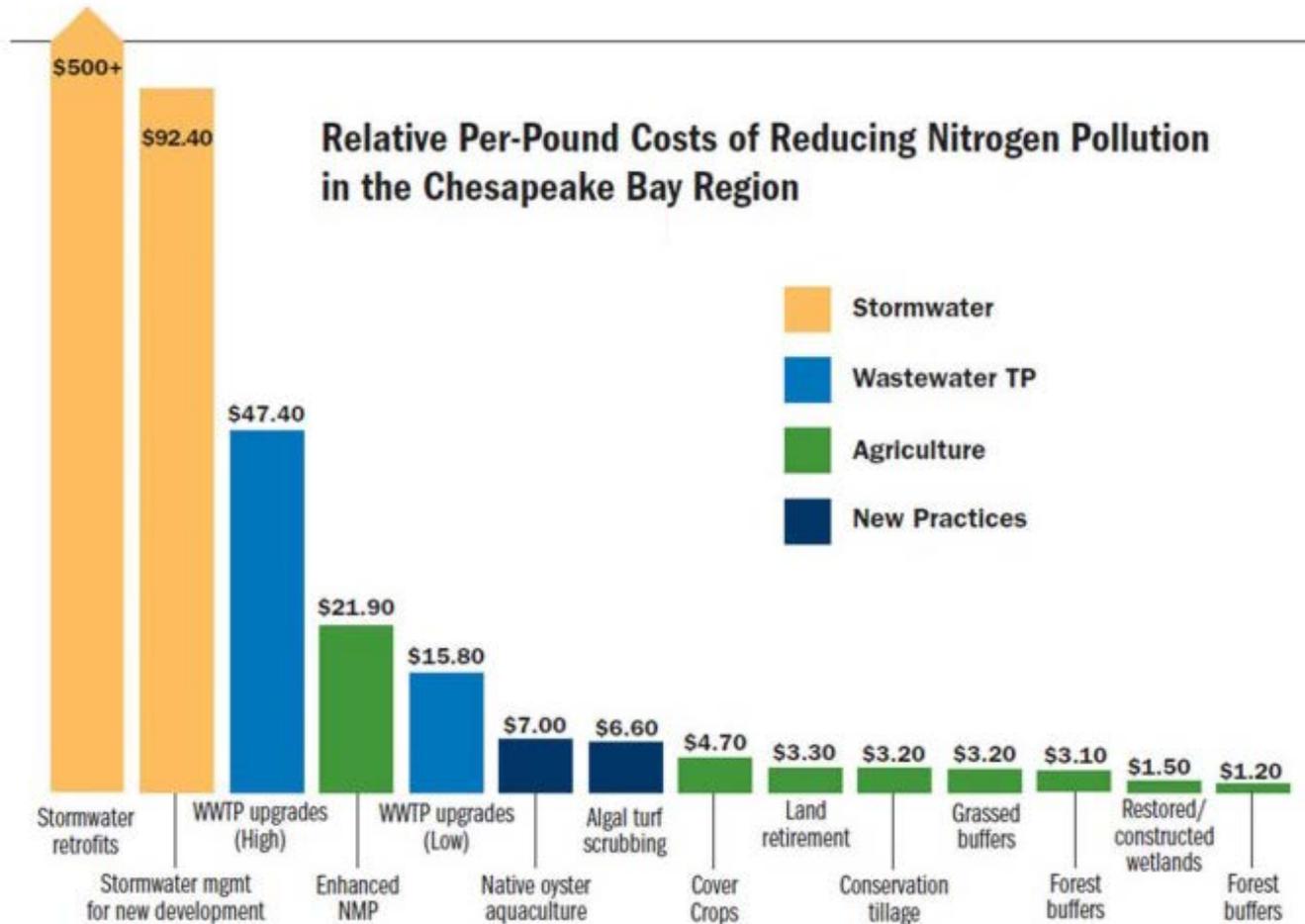
➤ The Impact:

- ❑ Lower the total cost of cleaning the Bay.

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Comparing Stormwater BMPs Costs



Source: World Resources Institute

January 2010

For more information on nutrient trading and an updated version of this cost-curve, please visit the World Resources Institute Website at: <http://www.wri.org/publication/how-nutrient-trading-could-help-restore-the-chesapeake-bay>



4. All Urban Lands Are Not Created Equal

➤ The Problem:

- ❑ All urban lands were prescribed the same reduction percentage.
- ❑ Virginia did not consider the level of past stormwater treatment when setting urban allocations or location within the watershed.

➤ The Solution:

- ❑ **Urban reduction scenarios should account for past progress and prioritize areas with the highest delivered loads.**

➤ The Impact:

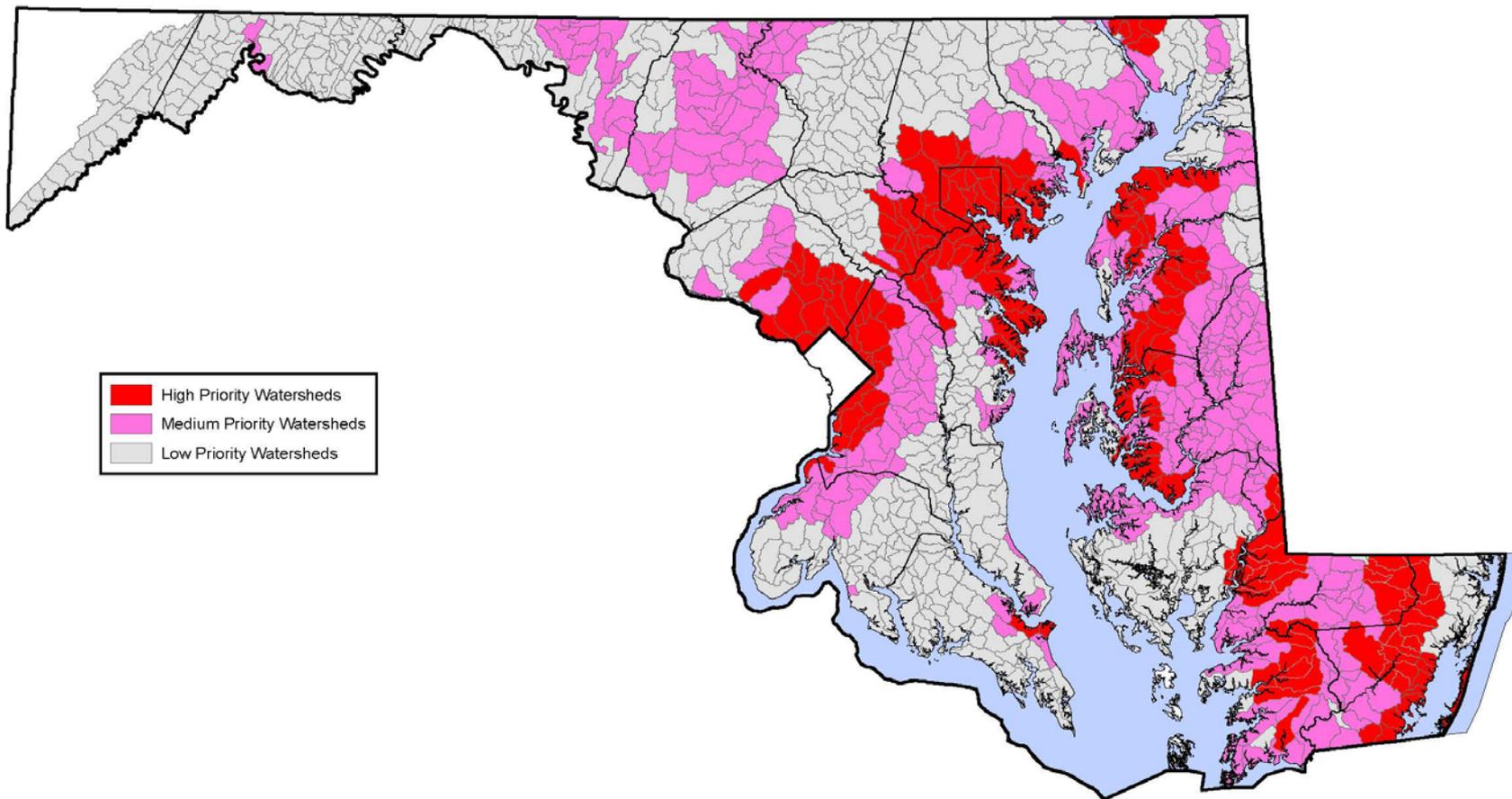
- ❑ Localities that controlled stormwater in the past will need to reduce less pollutants.
- ❑ Implement the Bay TMDL more cost effectively.

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Prioritizing by Highest Delivered Loads

Trust Fund Priority Geographic Areas



5. Non Regulated Urban Loads

➤ The Problem:

- ❑ Unregulated urban lands need to meet the same reductions as regulated lands.
- ❑ Virginia has no mechanism to enforce reductions in non MS4 areas.

➤ The Solution:

- ❑ **Focus implementation efforts and identify funding for non MS4 areas.**

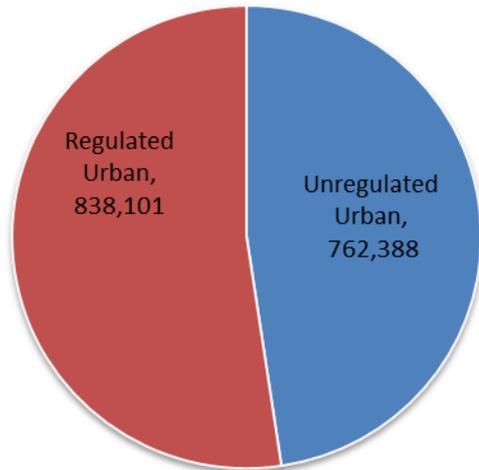
➤ The Impact:

- ❑ If reductions are not met in unregulated areas, then MS4's may be required to reduce more loads.



Unregulated versus Regulated Lands

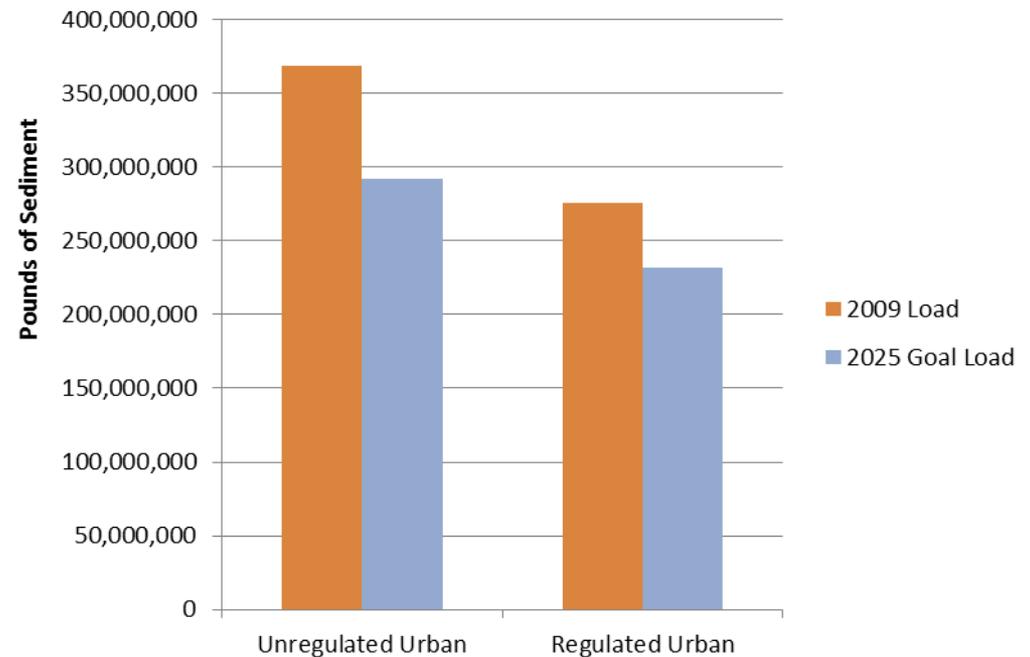
2009 Developed Lands Area (acres)



Urban Sector Phosphorus Load Reductions

Urban Sector Nitrogen Load Reductions

Urban Sector Sediment Load Reductions



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Virginia Should Develop a Better Phase III WIP

- Analyze the loading rates and opportunities for nutrient reductions by segmentshed and focus the reductions in areas that will be most cost effective.
- Add State-wide source sectors for air and in-stream processes.
 - ❑ DEQ can set targets for air reduction, oyster restoration, and SSOs.
 - ❑ Subtract loads from urban sector.

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Recommended Action

- Convey locality concerns through representation on the Chesapeake Bay Stakeholder Advisory Group.
- Support related legislative proposals:
 - ❑ Funding for agricultural commitments;
 - ❑ Establish a regulatory framework for localities to obtain approval for innovative stormwater treatment practices;
 - ❑ Evaluate voluntary water quality programs for effectiveness and ensure adequate funding.

