TMDLs, Tributary Strategies, and Source Water Protection

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Acknowledgments

- Rick Devore, PADEP
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Topics

1. BMPs Common to Nutrient, Sediment, and Bacteria Control
2. What is a TMDL?
3. Bacteria, Nutrient, and Sediment TMDLs
4. TMDL Implementation
5. Tributary Strategies/Chesapeake Bay TMDL
6. Other Water Quality Programs
Ag BMPs for Nutrients or Sediment That Control Bacteria

<table>
<thead>
<tr>
<th>BMP</th>
<th>Nutrients</th>
<th>Sediment</th>
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<tr>
<td>Livestock Access Limitations</td>
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<td>Animal Waste Management</td>
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<td>Pasture Runoff Controls</td>
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<tr>
<td>Nutrient Management</td>
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</table>
Bacteria TMDLs

Nutrient and Sediment TMDLs

Tributary Strategies/ Chesapeake Bay TMDL
What is a TMDL?

A TMDL (Total Maximum Daily Load) is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.
Water Quality Standard

Example: VA Freshwater *E. coli* Standard

- Single Sample Maximum: 235#/100 ml
- Geometric Mean: 126#/100 ml (for two or more samples taken in a calendar month)
TMDL Equation
(Pollution Budget By Source)

TMDL = Sum of WLA + Sum of LA + MOS

- WLA (Waste Load Allocation): Municipal and Industrial Dischargers, CSOs, Municipal Separate Stormwater Sewer Systems (MS4s), CAFOs
- LA (Load Allocation): Nonpoint Sources including agricultural operations
- MOS (Margin of Safety)
WLA vs. LA

- WLAs regulated under Clean Water Act (NPDES permits)
- LAs not regulated under CWA, but
- LAs can be regulated by state law (bad actor laws, MD: mandatory nutrient management)
- Incentive programs for voluntary compliance
TMDL Implementation - VA

1997 Water Quality Monitoring, Information, and Restoration Act (WQMIRA): “develop and implement a plan to achieve fully supporting status for impaired waters.”

- Schedule
- Measurable goals
- Specific implementation actions
- Cost and benefits
TMDL Implementation - MD

- Recognition of division of responsibilities among federal, state, and local agencies.
- TMDLs are to be reflected in State Water Quality Management Plan.
  - Pilot implementation plans being developed following A – I Elements in federal 319 Guidance.
- State guidance focuses on “institutionalization” of TMDL implementation within routine government functions.
- Recommends formation of local government TMDL implementation coordinating committee and documentation of multi-agency coordination in a TMDL implementation framework.
TMDL Implementation - WV

- Implementation embedded in Watershed Management Frameworks (South Branch, North Branch, Direct Drains, Cacapon)
- Establishment of Project Team of federal, state, and local agencies and stakeholders
- Cycle of monitoring, TMDL development, watershed prioritization, and implementation
- TMDL Implementation documented in Watershed Based Plans
- Funded under Section 319 Grants
TMDL Implementation - PA

- TMDL implementation part of Watershed Implementation Plans (WIP) funded through 319 Nonpoint Source Program
- WIP can address all NPS issues
- Directed by stakeholder groups
- WIP basis of implementation funding under 319
- EPA limiting funding to current plans – Only Potomac plan is for W.Branch of Antietam
Tributary Strategies/ Chesapeake Bay TMDL

- Tributary Strategies: Broad plans by tributary (Potomac) and jurisdiction to meet CBP nutrient and sediment reduction goals/caps
- “Voluntary” program under federal regulations
- There will almost certainly be a Chesapeake Bay TMDL by May 2011, …
Potomac Tributary Strategy Reductions* (wrt estimated 2007 loads)

<table>
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<th>STATE</th>
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*Based on CBPO data; includes “below fall line “ loads  
** Includes DC
Comments and Caveats

- Current Estimate: Ag accounts for 39% N, 50% P, and 71% SED in Potomac Basin
- Based on CBP Phase 4.3 Watershed Model and Water Quality Model—both models are currently being significantly revised
- Implementation framework will likely change under TMDL
Other Programs

- Continuing Planning Process (303) and Water Quality Management Plans (208)
- Nonpoint Source Program (319)
- Lake Management
- Watershed Restoration Action Plan (WRAS)
Potential Roles for DWSPP

• Use Source Water Protection to leverage additional funding for BMP implementation
• Provide technical info: How is drinking water impacted by pollution?
• Assist in stakeholder outreach: How BMPs protect drinking water.
Documentation on Web (Handout)

- EPA Region III TMDL Program (Intro)
- State TMDL Programs
- MD, VA Implementation Guidance
- VA Implementation Plan for Catoctin Creek, Opequon Creek
- WV Watershed Based Plan for Lost River and Mill Creek (Opequon)
- CBP Tributary Strategy Tools
- State Tributary Strategies
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