

TMDLs, Tributary Strategies, and Source Water Protection



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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

BMP	Nutrients	Sediment
Livestock Access Limitations	X	X
Animal Waste Management	X	
Pasture Runoff Controls	X	X
Nutrient Management	X	

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)

$TMDL = \text{Sum of WLA} + \text{Sum of LA} + \text{MOS}$

- 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)

STATE	NITR	PHOS	SED
VA	37%	24%	7%
MD	30%	10%	23%
WV	29%	53%	-4%
PA	33%	30%	24%
ALL**	30%	30%	13%

*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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