Total Maximum Daily Load (TMDL) Implementation:

Upper Rappahannock Basin

TMDL - 3 Primary Steps:
- TMDL development
- Implementation Plan development
- Implement the plan

DCR-DSWC Regional Office Boundaries

Rappahannock River Basin
Implementation Plan Development

- Implementation Plan development is required by state legislation (WQMIRA, 1997)
- Currently Virginia has significantly more completed TMDLs than implementation plans

The Commonwealth of Virginia has established criteria to rank TMDLs for implementation plan development based on:

- Location and Resource Priorities
- Reasonableness of Obtaining Load Allocations
- Implementation Support

What can we do to reduce sources of bacteria now?

- Target ongoing implementation of BMPs (SWCDs, NRCS, etc)
- Identify and seek grant funding opportunities
- Identify opportunities in existing local programs
- Initiate public outreach activities
- Continue stream monitoring – DEQ, citizen monitoring
- Demonstrate interest to agencies
Best Management Practices to Address Nonpoint Source Bacteria

**Residential/Urban**
- Septic tank pumpout
- Septic system or straight pipe repair/replacement
- Alternative on-site septic systems
- Pet waste control
- Marina pump-out facilities
- Rain Gardens/Stream Buffers

**Agricultural**
- Livestock exclusion
- Pasture management
- Riparian buffers
- Streambank stabilization
- Waste storage facilities

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**Implementation Plan Development**

- Implementation Plan will be done locally
- Stakeholders will have the opportunity to participate in the plan development
- Steering Committee, Working Groups and Public Meetings

**Integration with other Watershed Plans**

- Multiple water quality programs and activities may be underway in an individual watershed
- Each has specific geographical boundaries and goals
- TMDL implementation will be coordinated with other water quality plans, such as:
  - Watershed plans/roundtables
  - Local Comprehensive Plans
  - Water Supply Plans
Implementation in Virginia

Virginia has completed 17 IPs with 5 IPs currently under development.

Current Implementation Projects administered by DCR (12):
- Middle Fork Holston River: Washington County, 2001
- Blackwater River: Franklin County, 2001
- North River: Rockingham County, 2001
- Holman’s Creek: Shenandoah County, 2004
- Catoctin Creek: Loudoun County, 2004
- Willis River: Cumberland and Buckingham Counties, 2005
- Lower Blackwater River, Maggodee Creek and Gills Creek, Franklin County, 2006
- Cooks Creek and Blacks Run: Rockingham County and Harrisonburg, 2006
- Thumb, Deep, Carter, Great Runs: Fauquier County, 2006

Implementation Efforts in Virginia
- Currently 12 implementation projects underway in Virginia
- Funding has been provided for staff to conduct outreach and get BMPs on the ground
- 3 pilot projects (2001-2006)
  - Middle Fork Holston (Washington Co)
  - Blackwater River (Franklin County)
  - North River (Rockingham County)

North River TMDL Implementation Project
- Virginia’s first implementation project
- Impairments:
  - Fecal coliform
  - Benthic
  - Nitrates public drinking water
- 3 meetings held for TMDL development in 1998: 85, 250, 140 people attending
- Over 1,100 staff hours dedicated to attending meetings for implementation plan
- Approximately 116 miles of exclusion fencing
- 5,154 acres of cover crops
- 44 septic systems
- Estimated total cost = $12.11 million

North River Implementation Goals
5 Years Later

- Muddy Creek and Lower Dry River featured in statewide success story
- 8.3 miles of voluntary stream fencing installed in Muddy Creek and Lower Dry River
- 21 septic system repairs and replacements
- Lower Dry River being considered for de-listing

Potential Funding Sources

Potential funding sources for best management practices (BMPs) identified in Implementation Plan:

- EPA Section 319 Funds
- Water Quality Improvement Fund projects
- USDA Programs - CREP/EQIP
- EPA Grants
- State Revolving Loan Funds
- State Cost-Share Program
- State Tax Credit Program
- Southeast Rural Community Assistance Project
- National Fish & Wildlife Foundation Grants
- And others...

One last point to remember

TMDL’s and IP’s are a mechanism for restoring water quality and are an opportunity for diverse groups of people to come together to improve watershed health

Contact Information

May Sligh, May.Sligh@dcr.virginia.gov
(804) 443-1494
IPs available at www.deq.virginia.gov/tmdl