Chesapeake Bay TMDL: Phase II WIP Update

Presented to
Hampton Roads Regional Steering Committee
December 1, 2011

Virginia Letter to Localities

- "Shift in focus from establishing local reduction goals to BMP implementation levels of effort."
- Information Requested from local governments
  1. Develop a current BMP inventory
  2. Evaluate land use/ land cover information
  3. Review BMP scenarios identified in the Phase I WIP, and develop preferred local scenarios that provide a similar level of treatment.
  4. Develop strategies to implement the BMP scenarios.
  5. Identify any resource needs to implement the strategies.

2

What does the letter mean?

- Virginia will not be submitting information to EPA at the local government scale.
- Virginia still wants numbers from local governments, so they can create scenarios at a larger (basin?) scale.
- If locals do not submit information to Virginia, then they will use the current data and the Phase I WIP strategies to define the locality obligations.

3

Recommended Actions

Localities submit information on program level goals and HRPDC staff translates into a Regional VAST scenario that will be submitted to Virginia.

- Localities will each submit an individual plan to DCR that focuses on narrative strategies.
- HRPDC staff will translate strategies into a Regional input file that will be appended to locality reports.

4

Timeline

- December 28th: Localities submit strategies to HRPDC staff.
- January 5th: HRPDC staff review draft regional VAST input files and narrative with Regional Steering Committee.
- January 19th : Regional Appendix will be presented at HRPDC commission meeting.
- February 1st: Localities submit Phase II WIP input to DCR.

5

Default Scenario for Urban Stormwater

Land Use Category	Practice Description	Level 2 Practice % Coverage	Effective Net Reduction Prorated Over Entire Land Use Category Acreage		
			N	P	Sediment
Impervious Urban High and Low Intensity					
	Impervious Cover Reduction	7.5%	0%	5%	6%
	Filtration Practices	7.5%	3%	4%	6%
	Infiltration Practices	8.0%	6%	7%	8%
	Total		**9%**	**16%**	**20%**
Pervious Urban High and Low Intensity					
	Impervious Cover Reduction	-			
	Filtration Practices	5%	2%	3%	4%
	Infiltration Practices	5%	4%	4.25%	4.75%
	Total		**6%**	**7.25%**	**8.75%**

BMP Goals for all Sectors

Sector/Land use	BMPs	2025 WIP I Proposed BMPs
Agriculture	BarnRunoffCont (Systems)	27
Agriculture	PastFence(Linft)	470235
Agriculture	PrecRotGrazing	2865
Agriculture	CaptureReuse (Acres Treated)	30
Agriculture	ConPlan	40791
Agriculture	AgNutMan	46248
Agriculture	CoverCrop	13602
Agriculture	ContinuousNT	16373
Agriculture	NonUrbStrmRest (Linft)	462
Agriculture	WaterContStruc (Acres Treated)	103
Agriculture	WetlandRestore	212
Agriculture	GrassBuffers	7243
Agriculture	ForestBuffers	275
Agriculture	Tree Planting	4042
Forest	ForHarvestBMP	3072
Septic	Septic Connections (systems)	633
Septic	Septic Denitrification (systems)	7619
Septic	Septic Pumpouts (systems)	5533
Urban	StreetSweep	6167
Urban	UrbanNutMan	22667
Urban	EandS	4347
Urban	Impervious Urban Surface Reduction	5215
Urban	UrbStrmRest (linft)	14555
Urban	ExtDryPonds (Acres Treated)	29073
Urban	DryPonds (Acres Treated)	13795
Urban	WetPondWetland (Acres Treated)	34138
Urban	Infiltration (Acres Treated)	8450
Urban	Filtration (Acres Treated)	8903

Issues to consider

- Does the locality want to use the WIP 1 default scenario for sectors other than urban stormwater?
- Changes will only be made to other sectors if a locality provides information to correct BMP baselines and/or 2025 goals.
- Localities will need to upload BMP baseline corrections to VAST prior to December 28 or submit to HRPDC with data on December 28.

Criteria for data submittal

- Projects supported by existing funding.
- Projects that can realistically be funded in the next 15 years.
- What level of financial commitment is locality willing to make?
- Locality needs to translate dollars into level of implementation.

Requested Data Submittal to HRPDC

- Preferred
  1. Corrected baseline BMP and land use data.
  2. Level of implementation that the locality can commit to for each BMP that is consistent with the locality's strategy and is included in VAST.
     - Spreadsheet will be distributed to locals to fill in numbers. (report acres or percentage of land use)
     - Differentiate between pervious and impervious developed.
     - Submit separate numbers for James versus York basin.
     - Localities should include numbers only for those practices that they can commit to implementing.
  3. Level of implementation for BMPs not currently listed in VAST (will be included in spreadsheet).

Requested Data Submittal to HRPDC

- Adequate
  - List strategies that the locality would prefer to implement.
  - Estimate of feasible level of implementation for each strategy: high, medium, or low. (PDC provide list and ranges)
  - PDC will use average impervious cover to apply appropriate treatment by BMPs.
  - PDC will use percentage of land use within James/York to differentiate between basins.
- If localities do not provide any information
  - DCR Phase I WIP defaults used for all sources.

Additional BMPs Not in the VAST

- Oyster Restoration
- Shoreline stabilization
- BMP maintenance
- BMP Conversion
- Catch Basin Cleaning
- Storm Drain Vacuuming
- Septic Pumping
- Septic Denitrification
- Septic Connection to WWTP
- Trash Removal
- Pet Waste Management
- Outfall Stabilization
- Floodplain Restoration
- Disconnection of Illicit Discharges
- Floating Wetlands
- No Discharge Zones
- Reductions due to Redevelopment

Methodology for Number Crunching

1. Enter new baseline BMP information.
2. Simulate local land use data in VAST to extent possible.
3. Calculate urban land area controlled by locality (non federal or state)
4. Input specific BMP implementation levels provided for management actions included in VAST.
5. Input generalized/relative implementation levels provided for VAST BMPs.
6. Calculate gap between goals and reductions achieved by feasible implementation.
7. Use available information (BMP panels, MDE work) to estimate pollutant removal management actions not included in VAST tool.

Regional Component of Narrative

- HRPDC Deliverables
  - Regional Approach to WIP
    - Describe localities, federal and state agencies, and brief description of sectors in Hampton Roads.
    - Describe HRPDC two tier approach: Regional Steering Committee and local teams.
  - Regional Engagement
    - Interactions with local governments through Team meetings, regional meetings, webinars, hands-on training, and other coordination with local governments, federal facilities and State highways.
  - Regional Framework
    - Role of local governments, Soil Water Conservation Districts, State agencies that own property (DoF, VDOT, Universities, etc), Federal agencies that own property (DoD, etc), industrial NPDES permit holders, and HRSD.
  - Programmatic Strategies
    - BMP Decision Matrix
    - On-going initiatives
    - Programs that should be researched, added to model
  - Implementation Challenges
  - Data and Research Needs

Locality Component of Submittal

- Programmatic Strategies
- Funding Strategies
- Use DCR format for reporting strategies and resources.
- Document methodology and data used or developed to determine locality baselines for BMP implementation and land use areas.

Chesapeake Bay TMDL: Identifying Cost Effective Management Actions

Presented to
Hampton Roads Regional Steering Committee
December 1, 2011

Strategies and Cost Estimates

- CSN – Nutrient Accounting Methods…. (Technical Bulletin No. 9)
- "Costs of Stormwater Management Practices in Maryland Counties"
- Virginia Senate Finance Report – "Chesapeake Bay TMDL Watershed Implementation Plan: What Will it Cost to Meet Virginia's Goals?"
- HRPDC BMP Decision Matrix

17

Technical Bulletin No. 9

Prioritized for ease and cost effectiveness

1) Take credit for fertilizer reductions on urban turf
2) Take credit for more stringent stormwater redevelopment requirements.
3) Become an early adopter of new stormwater performance standards.
4) Take credit for community reforestration.
5) Take credit for current and future stream restoration projects.

18

Technical Bulletin No. 9 - continued

6) Evaluate performance of existing BMPs.
7) Take credit for enhanced street sweeping.
8) Investigate septic hookups and upgrades.
9) Illicit Discharge elimination.
10) Investigate stormwater retrofits.

Document provides BMP descriptions and range of nutrient removal rates for each BMP including BMPs not yet approved by the Bay Program.

19

Costs of Stormwater Management Practices in Maryland Counties

- Planning level unit cost estimates for implementing stormwater BMPS in MAST.
- Guidance for developing county specific factors to customize cost estimates.
- Estimates pre-construction costs (discovery, design, permitting, planning).
- Considers land costs, post-construction costs, and financing costs.

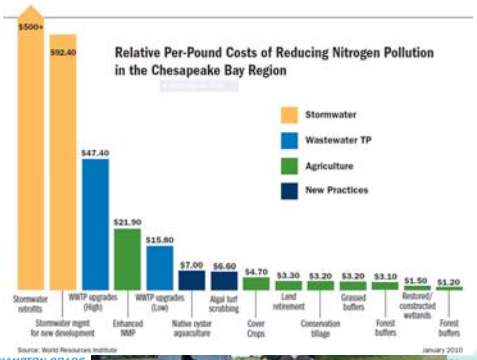
20

Virginia Senate Finance Committee

- Estimates the cost of implementing Ph I WIP by sector.
- Identifies who pays in each sector and potential funding sources.
  - Total cost = $13.6-$15.7B. State portion = $3.2B+ (20%)
- Describes funding decisions for General Assembly to consider.
- Compares per pound cost of reducing nitrogen using different methods from stormwater, agricultural and wastewater sectors.

21

Cost by Sector



Senate Finance Legislative Issues

- $50.1M is available from Water Quality Improvement Fund – Recommend use of funds?
- Filling $104.4M shortfall in DEQ point source fund for projects with signed grant agreements.
- Providing funding for Ag BMPs - $137.5M for 2012-14.
- Financial assistance to low income property owners for septic system upgrades. (12,000 systems need to be retrofitted each year. $6-12K each)
- Expand Nutrient Credit Exchange program.

23

HRPDC BMP Decision Matrix

- Tool to compare BMPs and support selection of strategies.
- Highlights potential benefits of BMPs in addition to nutrient removal.
- Provides public and elected officials a summary of options to meet TMDL reductions.
- List of BMPs in VAST and alternative BMPs.

24