

# Chesapeake Bay TMDL and Virginia Watershed Implementation Plan

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Hampton Roads Planning District Commission

October 20, 2010

Agenda Item #13



**AGENDA NOTE – HRPDC ANNUAL COMMISSION MEETING**

**ITEM #13: CHESAPEAKE BAY TMDL AND VIRGINIA WATERSHED IMPLEMENTATION PLAN**

Attached is HRPDC Memorandum #2010-170, providing cost estimates to implement the Chesapeake Bay TMDL Program. This material was distributed to the Commission by email on October 18, 2010.

Attachment



October 18, 2010

**Memorandum #2010-170**

**TO: HRPDC Commissioners**

**BY: Dwight L. Farmer, Executive Director/Secretary**

**RE: Cost Estimates to implement Chesapeake Bay TMDL Program**

**Our consultants have developed a preliminary cost estimate by locality for implementing the EPA's stormwater pollution reductions for the Chesapeake Bay TMDL (attached). The estimated annual cost is \$679M;** about 10% of total revenue for Hampton Roads localities. The cost estimate is based on:

- Urban area in each locality according to EPA's model.
- Cost per acre treated for different stormwater treatment facilities (BMPs) developed by the Center for Watershed Protection.
- Treating 19% of urban land with BMPs, based on local stormwater staffs' assessment of maximum practical application of BMPs and treatment of locality-owned land.
- Collecting, storing, and reusing stormwater to meet the rest of the pollutant reductions.
- Land acquisition for easements to construct BMPs on private property is not included but will be required.

Based on this cost estimate, the Hampton Roads localities should consider the following scenarios in commenting on the EPA's TMDL and Virginia's Implementation Plan:

**Best scenario: EPA and Virginia agree**

- Stormwater reductions are based on treatment of 19% of urban land, which would still require stormwater budgets to be doubled or tripled.
- This scenario corresponds to the BMP cost of \$101M per year in capital costs on the attached spreadsheet.
- If stormwater reductions were limited to treatment of 19% of urban land, then the agriculture or wastewater sector would require additional reductions. However, those reductions are two orders of magnitude cheaper per pound of phosphorus than the stormwater reductions.(\$100/lb for agriculture and \$200/lb wastewater compared to \$15,000+/lb for stormwater)

Worst scenario: EPA and Virginia do not reach compromise; Implement EPA's plan

- Stormwater reductions are based on treatment of 50% of urban land.
- Stormwater budgets would have to be 10 times greater than existing programs to meet the off-site storage and reuse costs. Localities would likely focus on additional BMP implementation to reduce cost, but it will be challenging and require significant condemnation of private property.
- This scenario corresponds to the Total cost of \$679M per year in capital costs on the attached spreadsheet.
- Stormwater utilities might not have a nutrient credit trading program to implement the most cost effective method of meeting reductions across sectors.

HRPDC staff is developing a compromise position that encourages nutrient credit trading between sectors and minimizes the total costs of pollutant reductions in the region. Additional information will be presented at the HRPDC meeting on October 20th.

WSK/kp

Attachment

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**Preliminary Estimated Capital Cost to comply with EPA TMDL Allocations for Urban Stormwater \***

Community	Total cost of TMDL implementation			Annual Cost based on 14 year schedule			
	BMP Costs (Millions)	Storage & Reuse Costs (Millions)	Total (Millions)	BMP Costs (Millions)	Storage & Reuse Costs (Millions)	Total (Millions)	Per Capita
Chesapeake (City)	\$210	\$1,157	\$1,367	\$15	\$83	\$98	\$437
Hampton (City)	\$148	\$905	\$1,053	\$11	\$65	\$75	\$509
Newport News (City)	\$172	\$994	\$1,166	\$12	\$71	\$83	\$461
Norfolk (City)	\$208	\$1,176	\$1,384	\$15	\$84	\$99	\$419
Portsmouth (City)	\$100	\$566	\$666	\$7	\$40	\$48	\$472
Virginia Beach (City)	\$264	\$1,474	\$1,737	\$19	\$105	\$124	\$284
Isle Of Wight	\$35	\$196	\$231	\$3	\$14	\$17	\$460
James City	\$75	\$427	\$501	\$5	\$30	\$36	\$546
Poquoson (City)	\$12	\$77	\$90	\$1	\$6	\$6	\$526
Suffolk (City)	\$95	\$533	\$628	\$7	\$38	\$45	\$528
Williamsburg (City)	\$14	\$80	\$94	\$1	\$6	\$7	\$510
York	\$82	\$512	\$594	\$6	\$37	\$42	\$658
<b>TOTAL</b>	<b>\$1,414</b>	<b>\$8,096</b>	<b>\$9,510</b>	<b>\$101</b>	<b>\$578</b>	<b>\$679</b>	

\*Based on retrofitting about 19% of land with BMPs and remaining reductions achieved with storage and some type of reuse.

\*\*Developed by Greeley and Hansen on behalf of HRPDC.

