Watershed Implementation Planning and Stormwater Permits in Virginia

Chesapeake Bay and Water Resources Policy Committee

March 18, 2011

Fairfax County MS4 Permit History

- 1991-1992: Application Parts I and II submitted to DEQ
- 1997: First 5-year MS4 permit issued
- 2001: Renewal application submitted to DEQ
- 2002: Second 5-year MS4 permit issued
- 2005: MS4 program transferred from DEQ to DCR
- 2006: Renewal application submitted to DCR
- 2007: Second permit administratively continued by DCR
- 2007-Present: Permit negotiations with DCR
  - DCR wants to issue new permits to all 11 Phase I MS4 communities in Virginia in 2011
  - Fairfax County will be first in Virginia

Increasing Focus on Stormwater

- 2008: National Research Council report "Urban Stormwater Management in the United States"
  - New permitting structure with accountability at municipal level
  - Additional actions: conserve natural areas, reduce impervious cover, retrofit urban areas
- 2009: Executive Order established new accountability framework for Chesapeake Bay Protection and Restoration
  - Two-year milestones, consequences for failure
- 2010: Chesapeake Bay TMDL and Phase I WIPs
  - Established limits on nitrogen, phosphorus and sediment
- 2011: Update Virginia Stormwater Management Regulations
- 2012: Completion of National Stormwater Rulemaking

Virginia's Phase I WIP

- Finalized 11/29/10
- Assigned allocations by basin and sector
- Requires "Level 2" retrofits of existing urban lands
  - Load reductions from impervious urban lands:
    - 9% Nitrogen, 16% Phosphorus, 20% Sediment
  - Load reductions from pervious urban lands :
    - 6% Nitrogen, 7.25% Phosphorus, 8.75% Sediment
- Achieve 100% of reductions over next 3 permit cycles
  - 2011-2015: achieve at least 5% of required reductions
  - 2016-2020: achieve at least 40% of required reductions
  - 2021-2025: achieve 100% of required reductions
- Locality-specific plans to be developed in Phase II WIP

Virginia's Phase I WIP Allocations

2025 Potomac in VA (Million Pounds/Year)		
Sector	**Nitrogen**	**Phosphorus**
Agriculture	6.359	0.674
Urban Runoff	2.635	0.273
Wastewater	3.743	0.278
On-Site	0.597	0
Forest	4.197	0.205
Non-Tidal Deposition	0.103	0.008
Total	**17.634**	**1.438**

Chesapeake Bay TMDL

- Finalized 12/29/10
- TMDL = WLA + LA + MOS
- EPA approved Virginia's Phase I WIP with "enhanced oversight and contingencies" for urban stormwater
  - EPA may shift a greater portion of Virginia's urban stormwater load from the load allocation to the wasteload allocation
  - EPA reserves authority to object to proposed stormwater regulations, MS4 permits, construction general permits, and industrial stormwater permits
  - EPA assigned explicit WLAs to all Phase I MS4 permits in Virginia in Appendix Q of TMDL

Chesapeake Bay TMDL Allocations

2025 Potomac in VA (Million Pounds/Year)			
Sector	**Nitrogen**	**Phosphorus**	**Sediment**
Agriculture	6.264	0.641	493.291
Agriculture-Regulated	0.464	0.036	7.709
Regulated Stormwater	1.886	0.163	101.818
Urban	0.721	0.096	47.316
Wastewater	3.783	0.283	31.724
Wastewater-CSO	0.005	0.001	0.049
Onsite	0.592	0.000	0.000
Forest	4.265	0.213	131.677
Non-Tidal Water Deposition	0.112	0.008	0.000
LA Reserve	0.000	0.000	15.943
WLA Reserve	0.000	0.000	0.000
Total	**18.092**	**1.441**	**829.527**

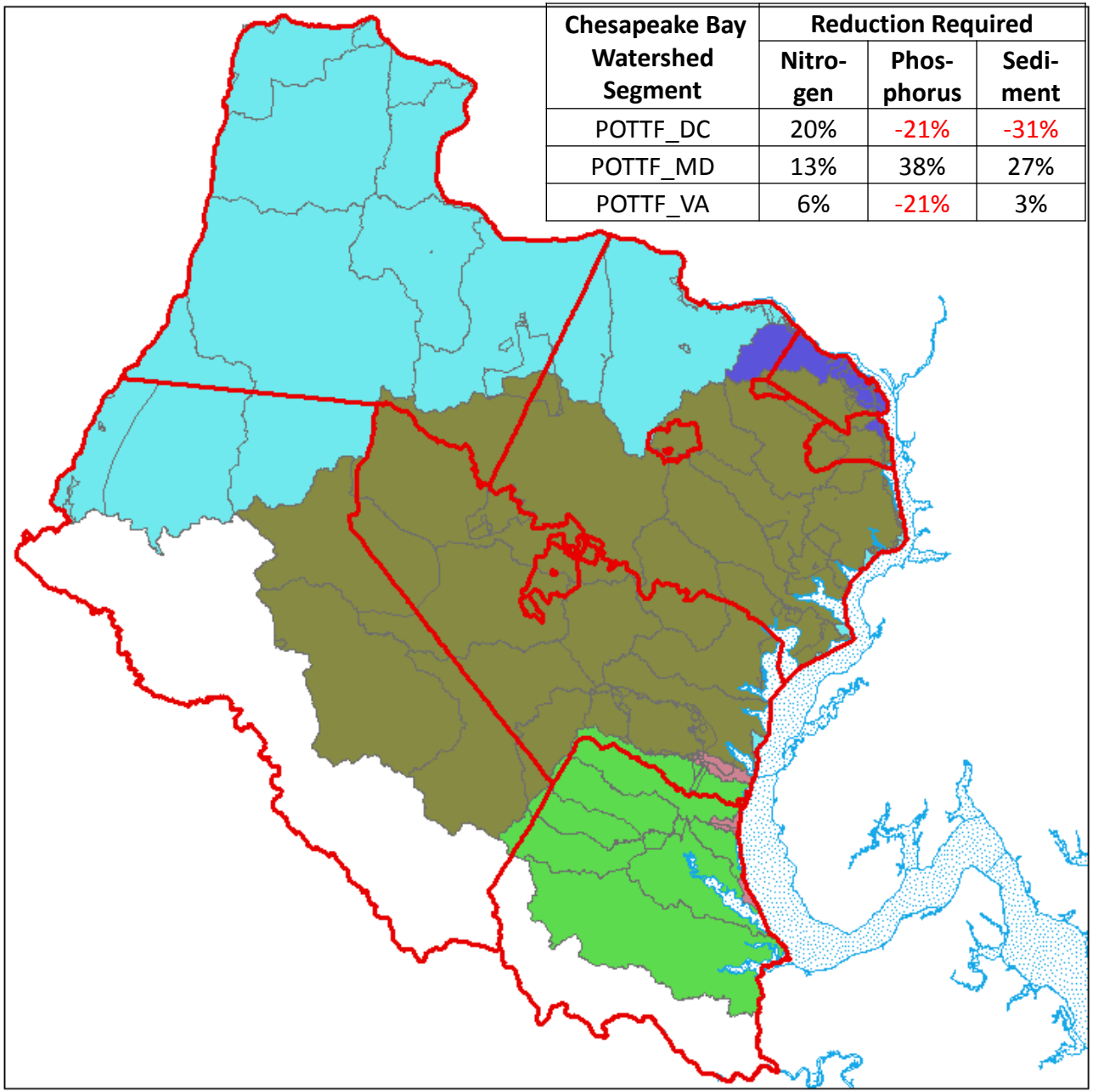
How Were Phase I MS4 WLAs in Virginia Determined?

- "While the best and final definition of an MS4 is delineated sewersheds (drainage area served by a sewer system), most jurisdictions could provide only municipal boundaries as an estimated MS4 area"
- Developed land within jurisdictional boundaries were assigned to Phase I MS4s in Virginia as WLAs
  - This approach does not account for Phase II MS4s located within Phase I MS4 jurisdictions
    - VDOT, federal facilities, state lands, local jurisdictions
- Jurisdictions that drain to multiple Bay segments were assigned a WLA for each segment

Chesapeake Bay

Potomac Watershed Segments

Chesapeake Bay Watershed Segment	Reduction Required		
	Nitro-gen	Phos-phorus	Sedi-ment
POTTF_DC	20%	-21%	-31%
POTTF_MD	13%	38%	27%
POTTF_VA	6%	-21%	3%



Northern Virginia Regional Commission
March 2011

Fairfax County's MS4 WLAs

	2025 POTTF_DC in VA (Thousand Pounds/Year)			2025 POTTF_MD in VA (Thousand Pounds/Year)			2025 POTTF_VA in VA (Thousand Pounds/Year)		
Sector	**Nitrogen**	**Phosphorus**	**Sediment**	**Nitrogen**	**Phosphorus**	**Sediment**	**Nitrogen**	**Phosphorus**	**Sediment**
Agriculture	0.209	0.011	6.898	5,397.493	536.154	473,791.579	121.695	16.557	10,983.066
Agriculture-Regulated	0.013	0.001	0.041	450.119	35.172	7,593.888	6.996	0.421	57.695
Regulated Stormwater	104.381	9.452	4,685.898	966.829	67.086	36,212.863	764.144	77.020	55,326.595
Aggregated Phase II	3.880	0.675	503.887	470.545	43.465	28,617.560	82.073	10.599	12,749.563
VA0088579	69.035	7.051	2,801.683	0.000	0.000	0.000	56.248	9.110	2,427.655
VA0088587	31.465	1.726	1,380.328	495.616	23.473	7,575.121	412.224	36.799	27,646.930
VA0088595	0.000	0.000	0.000	0.669	0.148	20.181	213.599	20.512	12,502.447
Urban	0.103	0.020	4.253	613.680	79.113	41,929.329	18.284	2.251	2,618.725
Wastewater	587.995	27.024	3,304.158	772.170	106.465	8,305.130	2,136.453	123.791	18,384.329
Wastewater-CSO	0.000	0.000	0.000	0.000	0.000	0.000	5.197	0.688	49.000
Onsite	0.000	0.000	0.000	360.608	0.000	0.000	24.288	0.000	0.000
Forest	11.116	0.304	337.292	3,390.291	161.396	113,416.347	307.561	12.156	10,106.087
Non-Tidal Water Deposition	1.107	0.063	0.000	53.561	3.993	0.000	15.674	1.141	0.000
LA Reserve	0.000	0.000	0.000	0.000	0.000	15,942.672	0.000	0.000	0.000
WLA Reserve	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Grand Total	**704.924**	**36.873**	**8,338.540**	**12,004.752**	**989.378**	**697,191.809**	**3,400.293**	**234.026**	**97,525.497**

Impacts of Having Phase I MS4 WLAs in TMDL

- MS4 permits must be consistent with TMDL WLAs
  - Complicates permit negotiations
- County must track progress toward and achieve three separate sets of targets for nitrogen, phosphorus and sediment
  - Reduces flexibility in achieving reductions
  - Increases risk of non-compliance
- Implementation timeframe is very short
- Exposes Phase I localities in Virginia to third party lawsuits for failure to achieve required reductions

Potential Conflicts with Other Regulations

- Accotink Creek Benthic TMDL
  - EPA using flow as a surrogate for sediment
  - Will require 50% reduction in flow
- Proposed Virginia Stormwater Regulations
  - Establish statewide requirements
- Offsets and Trading
  - New state legislation would require localities to allow
  - EPA may not allow trading between stormwater permits or across Chesapeake Bay Watershed Segments
- Stream Restoration
  - Efficiency not reflected in Chesapeake Bay Model
  - May not be able to credit toward WLA

Virginia's Phase II WIP Process

- EPA Expectations for Phase II WIPs
  - Reference and build upon Phase I WIPs
  - Develop "local" targets
- DCR Assigned Project Manager
  - Developing project plan
  - Creating a new Stakeholder Advisory Group
  - Need to Engage 96 localities, 32 SWCDs and NGOs
    - Exploring use of 16 Planning District Commissions
  - Develop Community Conservation Profiles

Virginia's Phase II WIP Process (Continued)

- Schedule remains unchanged
  - June 2011 Draft Phase II WIP to EPA
  - November 2011 Final Phase II WIP to EPA
  - CBF letter to EPA anticipates no more than a 3 month slip in schedule
- Role of Phase I MS4 jurisdictions in Phase II WIP process unclear
  - MS4 permits must be consistent with TMDL WLAs
  - Phase II WIP must follow regulatory processes
- Chesapeake Bay Model updates ongoing
  - Anticipate changes to TMDL WLAs

Questions?

Kate Bennett (kate.bennett@fairfaxcounty.gov)
Department of Public Works and Environmental Services
Fairfax County, Virginia