

Virginia Phase II Watershed Implementation Plan (WIP) Approach

Northern Virginia Regional Commission
CAO Meeting
March 17, 2011

What is a TMDL

- Total Maximum Daily Load
- Numeric expression of how much of a particular pollutant that a water body can receive to achieve Water Quality Standards.
- Popular acronym is “Pollution Diet”

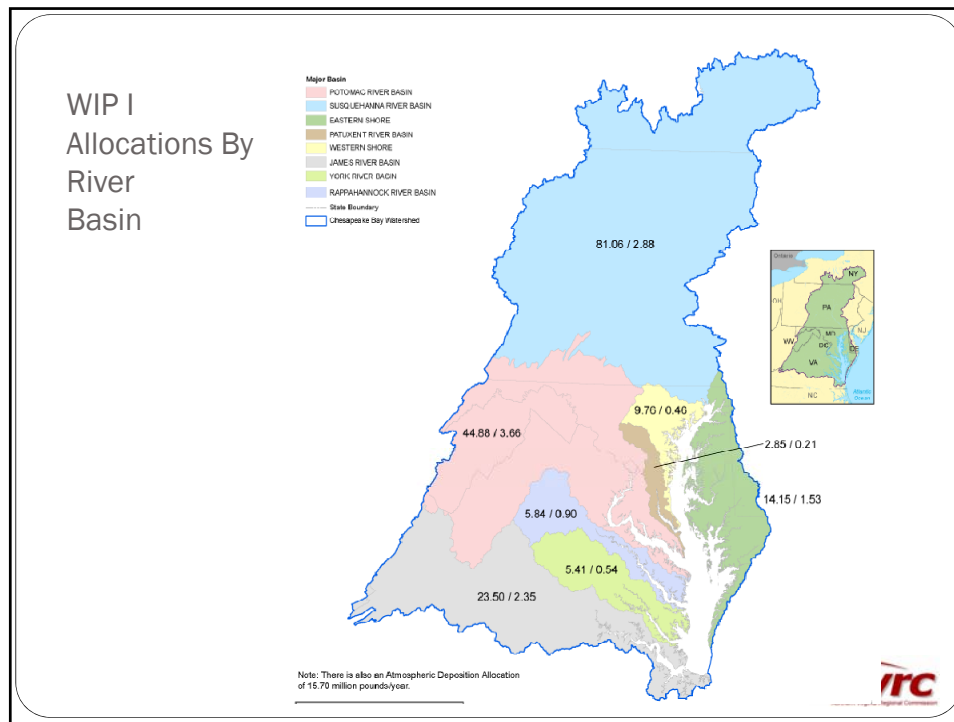
$$\text{TMDL} = \text{sum(WLA)} + \text{sum(LA)} + \text{MOS}$$

WLA = Waste load allocation

LA=Load allocation

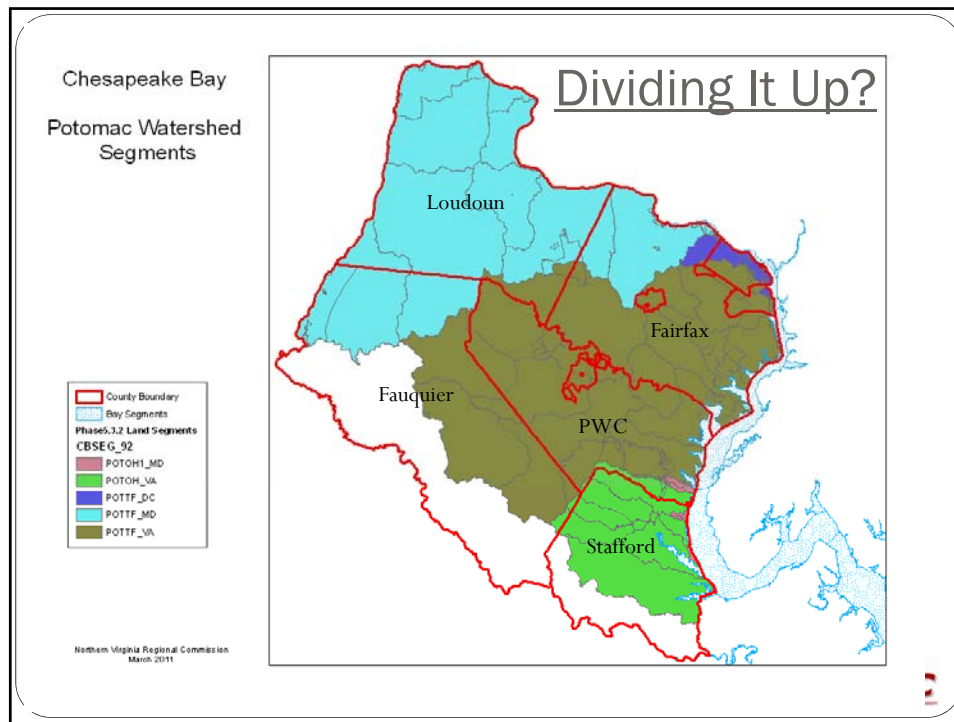
Important point to remember WLA's are regulated entities such as wastewater treatment plants and MS4 Permits.





Virginia's Phase I WIP

- Finalized 11/29/10
- Assigned allocations by basin and sector
- Requires "Level 2" stormwater 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: 5% of required reductions
 - 2016-2020: 35% of required reductions
 - 2021-2025: 60% of required reductions
- Locality-specific plans to be developed in Phase II WIP



Virginia's WIP II Process

- DCR Assigned Project Manager and Department Leads
- Developing Project Plan
- Creating a new Stakeholder Advisory Group
 - Inform planning process
 - Communicate process to constituents
 - Increase participation from local governments

Virginia's WIP II Process (cont.)

- EPA Expectations: Phase II will reference and build upon Phase I management strategies
- EPA Expectations: Develop “Local” Targets
 - Initially as percent reduction from current loads
 - Upon completion of model revisions, update targets
- Engage 96 Localities, 32 SWCDs and NGOs
 - Explore the Use of the 16 Planning District Commissions to facilitate local engagement
- Develop Community Conservation Profile (locality scale)



Virginia's WIP II Process (cont.)

- Community Conservation Profiles
 - Integrates conservation strategies with appropriate local data;
 - DCR convert appropriate components of the strategy to an input deck to include in WIP II;
 - Intended to provide context for local strategy that is more than just an “input deck” including strategies for linking land and water quality, for example:
 - Comprehensive planning
 - Outreach/education
 - Local programs: PDR/TDR, buffer initiatives, green public lands, LEED building initiatives, ect.



Virginia's WIP II Process (cont.)

- Profile could serve as tracking mechanism for two year milestones.
- Proposed PDC Role:
 - Manage local data set
 - Developed by PDC with DCR Support
 - Defined by Locality/PDC
 - Land Use/Land cover/BMPs/Bleu-Green Infrastructure
 - Work with localities to identify potential pollution reduction strategy
 - Employ local scenario tool
 - Will require predictive element
 - Question development & time frame
 - Lack of relationship to Bay data



Schedule

- Schedule Remains unchanged *as of now*
 - June 2011 Draft Phase II WIP to EPA;
 - November 2011 Final Phase II WIP to EPA;
 - Anticipating 3 month slip per CBF letter to EPA;
 - Presently very limited flow of information out of Richmond;
 - Virginia Assistant Secretary of Natural Resources for Chesapeake Bay to present to NVRC Commissioners later next week.



How will the Chesapeake Bay TMDL affect local government?

- Allocations set for local governments/watersheds/regions for nitrogen, phosphorous, sediment;
- Discretion as to whether the local level identified as municipalities, watershed organization or PDC;
- Require improvements draws attention to existing regulatory efforts and for increased regulatory efforts; Additional regulatory and administrative burdens on local governments;
- All new pollutant loadings resulting from growth will need to be offset;
- Local discretion will exist for how to meet pollutant loads. But, if there is not a local plan, then responsibility for meeting pollutant loads will fall on DCR and ultimately EPA.



Impacts of Having Phase I MS4 WLAs in TMDL

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



WIP II Development Issues

- Bay Model resolution & accuracy at the local scale;
- Uncertainty around delivery of approved 5.3.2 Model;
- Individual Waste Load Allocations for Virginia only MS4 Phase I Jurisdictions;
- Dealing with federal and state lands, accounting for and accountability;
- Funding for WIP II planning process and implementation;
- Locality willingness to participate.



Costs - ??

Category	Row	Item	Virginia WIP Assumptions In Table 6-4, 1 ⁽¹⁾	Reductions to Meet WLA in WIP Table 2.2 (Without Non-Structural BMPs)
Estimated Costs	A	Estimated Capital Cost (Millions)	\$5,151	\$8,710
	B	Estimated Annual Cost (Millions per year)	\$552	\$934
Estimated Average Annual Stormwater Bills	C	Residential House (\$/yr)	\$160	\$300
	D	Convenience Store/ Gas Station (\$/yr)	\$1,400	\$2,600
	E	Neighborhood Shopping Center (\$/yr)	\$9,600	\$17,100
	F	Church (\$/yr)	\$3,200	\$5,700
	G	Regional Mall (\$/yr)	\$145,100	\$259,100
Census Households & Population	H	2009 Household Estimate	2,663,652	2,663,652
	I	2009 Population Estimate	6,881,351	6,881,351
	J	Total Annual Fee Per Household ⁽²⁾ (\$/yr) (Row "B" / Row "H")	\$210	\$350
	K	Total Annual Fee Per Person ⁽²⁾ (\$/yr) (Row "B" / Row "I")	\$80	\$140
Financial Burden	L	2009 Medium Household Income Estimate	\$59,985	\$59,985
	M	Residential House Stormwater Fee as Percentage of MHI (Row "C" / Row "L")	0.3%	0.5%
	N	Total Household Stormwater Fee ⁽²⁾ as Percentage of MHI (Row "J" / Row "L")	0.4%	0.6%

Virginia Urban Stormwater Costs associated with Chesapeake Bay TMDL

Note: (1) Include performance of urban nutrient management
 (2) Simulate stormwater costs passed on to consumer by retail store, gas stations, etc.



Costs - ??

Category	Row	Item	Virginia WIP Assumptions in Table G-4, 1 ⁽¹⁾	Reductions to Meet WLA in WIP Table 2.2 (Without Non-Structural BMPs)
Estimated Costs	A	Estimated Capital Cost (Millions)	\$2,101	\$2,712
	B	Estimated Annual Cost (Millions per year)	\$225	\$291
Estimated Average Annual Stormwater Bills	C	Residential House (\$/yr)	\$150	\$200
	D	Convenience Store/ Gas Station (\$/yr)	\$1,400	\$1,800
	E	Neighborhood Shopping Center (\$/yr)	\$9,200	\$11,900
	F	Church (\$/yr)	\$3,100	\$4,000
	G	Regional Mall (\$/yr)	\$139,500	\$180,300
	H	2009 Household Estimate	1,087,812	1,087,812
	I	2009 Population Estimate	2,875,480	2,875,480
Census Households & Population	J	Total Annual Fee Per Household ⁽²⁾ (\$/yr) (Row "B" / Row "H")	\$210	\$270
	K	Total Annual Fee Per Person ⁽²⁾ (\$/yr) (Row "B" / Row "I")	\$80	\$100
	L	2009 Medium Household Income Estimate	\$65,245	\$65,245
Financial Burden	M	Residential House Stormwater Fee as Percentage of MHI (Row "C" / Row "L")	0.2%	0.3%
	N	Total Household Stormwater Fee ⁽²⁾ as Percentage of MHI (Row "J" / Row "L")	0.3%	0.4%

Note: (1) Include performance of urban nutrient management
 (2) Simulates stormwater costs passed on to consumer by retail stores, gas stations, etc.

Potomac Watershed Urban Stormwater Costs associated with Chesapeake Bay TMDL

