Chesapeake Bay WIP Phase II Status in the COG Region

Presented to Potomac River DWSSP

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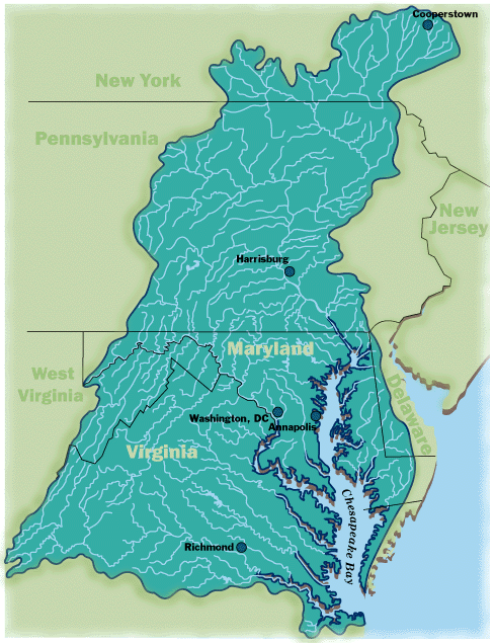
Bay TMDL – State WIP Summary

- TMDL stands for “total maximum daily load”
  - Under Clean Water Act, EPA required to set pollution diet for impaired waters not meeting water quality standards
  - TMDLs set allowable levels – “cap loads” – of pollution for various types of sources
  - TMDLs set “wasteload allocations” for permitted sources; “load allocations’ for non-regulated sources
- WIP stands for “watershed implementation plan”
  - WIPs are the means by which current pollution loads will be reduced to the cap loads
  - Under the Bay-wide set of TMDLs, each state (MD, VA, PA, WV, NY, DE) and District has developed WIPs



Bay TMDL/WIP Status

Step 1 – thru December 2010

EPA developed TMDL; states prepared Phase I WIPs

- EPA allocated loads by major source sector, river basin (based on water quality & watershed models)
- States provided general plans for achieving nutrient & sediment reductions in Phase I WIPs

Step 2 – thru March 2012

States/District prepare Phase II WIPs

- States/District prepare detailed plans for achieving initial reductions (to 2017)
  - At local level (e.g. county, planning district commission, soil conservation district) - in consultation with local stakeholders
  - To include federal agency efforts - per President's Executive Order
  - **Draft – Due December 1, 2011**
  - **Final – Due March 30, 2012**
- EPA modifies TMDL *(potentially revises allocations)*

Step 3 – 2011 – 2017

Implementation of Phase II WIPs

- Implementation of pollution reduction measures by local governments, farmers, others
- 2-Year Milestones issued – reporting implementation progress

Bay TMDL/WIP Status *(cont'd)*

Step 4 – 2017
States/District prepare Phase III WIPs

- States/District submit Phase III WIPs to achieve final reductions by 2025
- EPA modifies TMDL if necessary

Step 5 – 2017 - 2025

- Continued implementation & 2-Year Milestone reporting

Step 6 - 2020

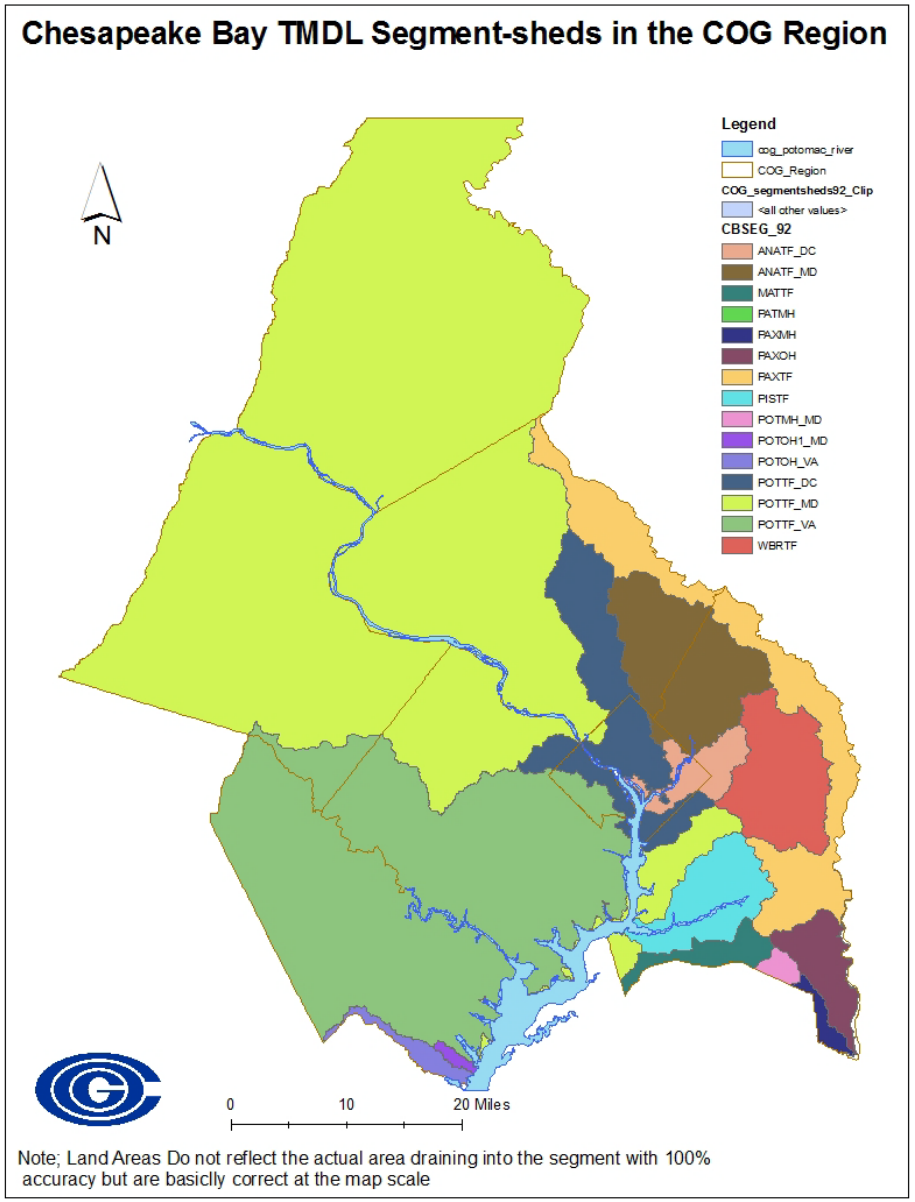
- Maryland's own goal to achieve 100% of their Bay implementation

Step 7 - 2025

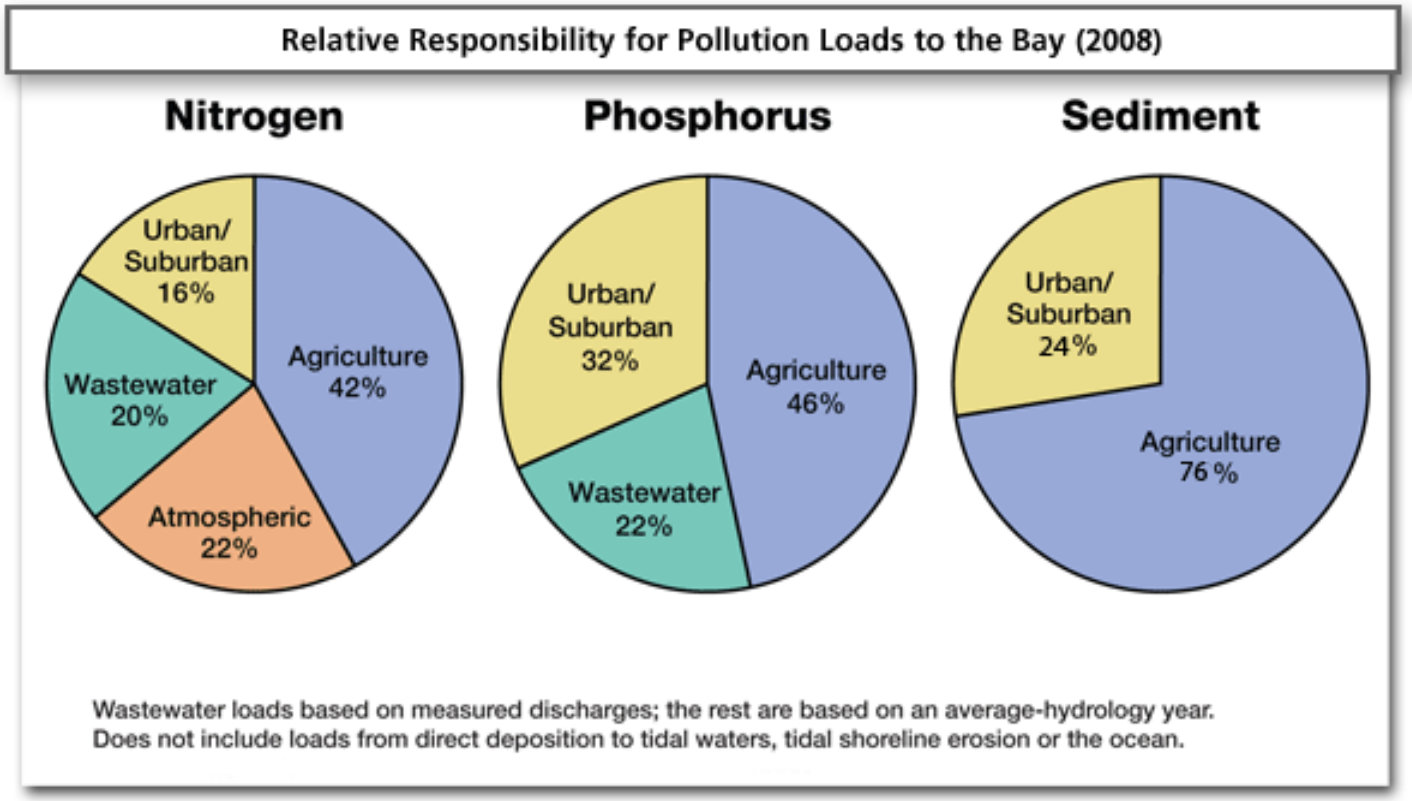
- Overall – 100% of Bay implementation to be achieved

The Bay TMDL Jigsaw Puzzle

- Overall Bay TMDL actually 92 segments with separate allocations for TN, TP and TSS



Pollution by Sector – Who's Responsible



Since wastewater is on track to implement "limit of technology," agricultural and urban runoff are the prime targets for further reductions

WIP Plans for Local Government Actions

<u>According to Phase I WIPs</u>

$$ Complete installation of enhanced nutrient removal at wastewater plants (required through NPDES permits)

- Minimize generation of new loads (e.g. by directing new development to sewer service)

$ Various small-scale actions (such as septic pump-outs, tree planting)

$$$ **Stormwater retrofits** (can be required through MS4 permits)

$$$ Pay for offsets (trading)

WIP Comparison - Stormwater

Maryland

New Development

- Continuation of current state stormwater program requirement (post-development runoff standard of "woods in good condition"

Re-Development

- Continuation of current state stormwater program requirement (treat or remove 50 % of existing imperviousness)

Retrofit

- Treat 20 – 30 % of pre-85 imperviousness, but "alternatives" will be considered

Nutrient Management

- Includes fertilizer restrictions, plan requirements

Virginia

New Development

- No increase above allowable 2025 average load/acre

Re -Development

- Anticipated reductions of 20% under new state stormwater management regulations

Retrofit

- Not specified: *"On developed lands, the implementation of additional BMPs will be necessary to meet the allocated pollutant reductions"*

Nutrient Management

- Includes fertilizer restrictions, plan requirements

WIP Comparison - Stormwater

Maryland

Phase I Permit Conditions (to 2017)

- Conduct "systematic" watershed assessment for all watersheds
- Develop implementation plans for all applicable WLAs (TN, TP and TSS for each county-segment-shed)
- Complete 30% retrofit of pre-85 impervious acres to the MEP – or alternatives
- Have ongoing iterative process for implementing BMPs if WLAs are not being met

- **Phase II - ?**

Virginia

Phase I Permit Conditions (to 2025)

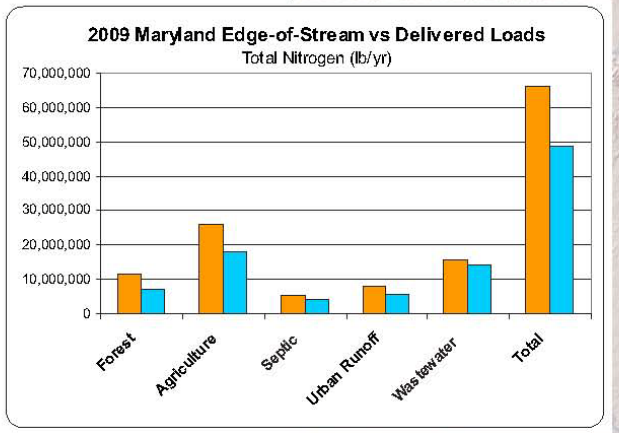
- Divided into 3 5-year cycles:
- 1st cycle (2011 – 2015)
  - Implement nutrient management requirements
  - Develop action plan for achieving 35 % of total reductions in 2nd cycle
  - Redo ordinances, etc.
- 2nd cycle (2016 – 2020)
  - Achieve 35 % of total reduction needed
  - Plan for 100 % of total reductions in 3rd cycle
- 3rd cycle (2021-2025)
  - Achieve 100% of total reductions needed

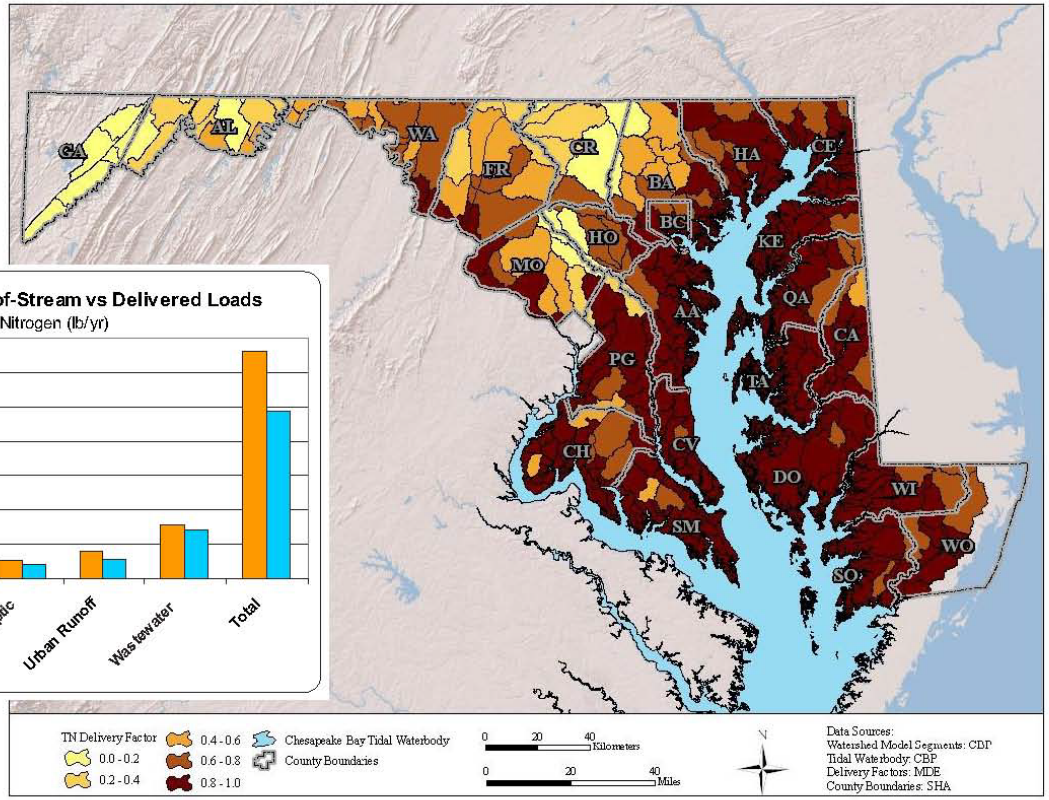
Phase II - ?

WIP/Stormwater Permitting Issues

- Varying delivery factors
- Unequal reduction percentages for TN, TP
- Local TMDLs may govern
  - Is trading viable
- Cost

Reported in Delivered Loads





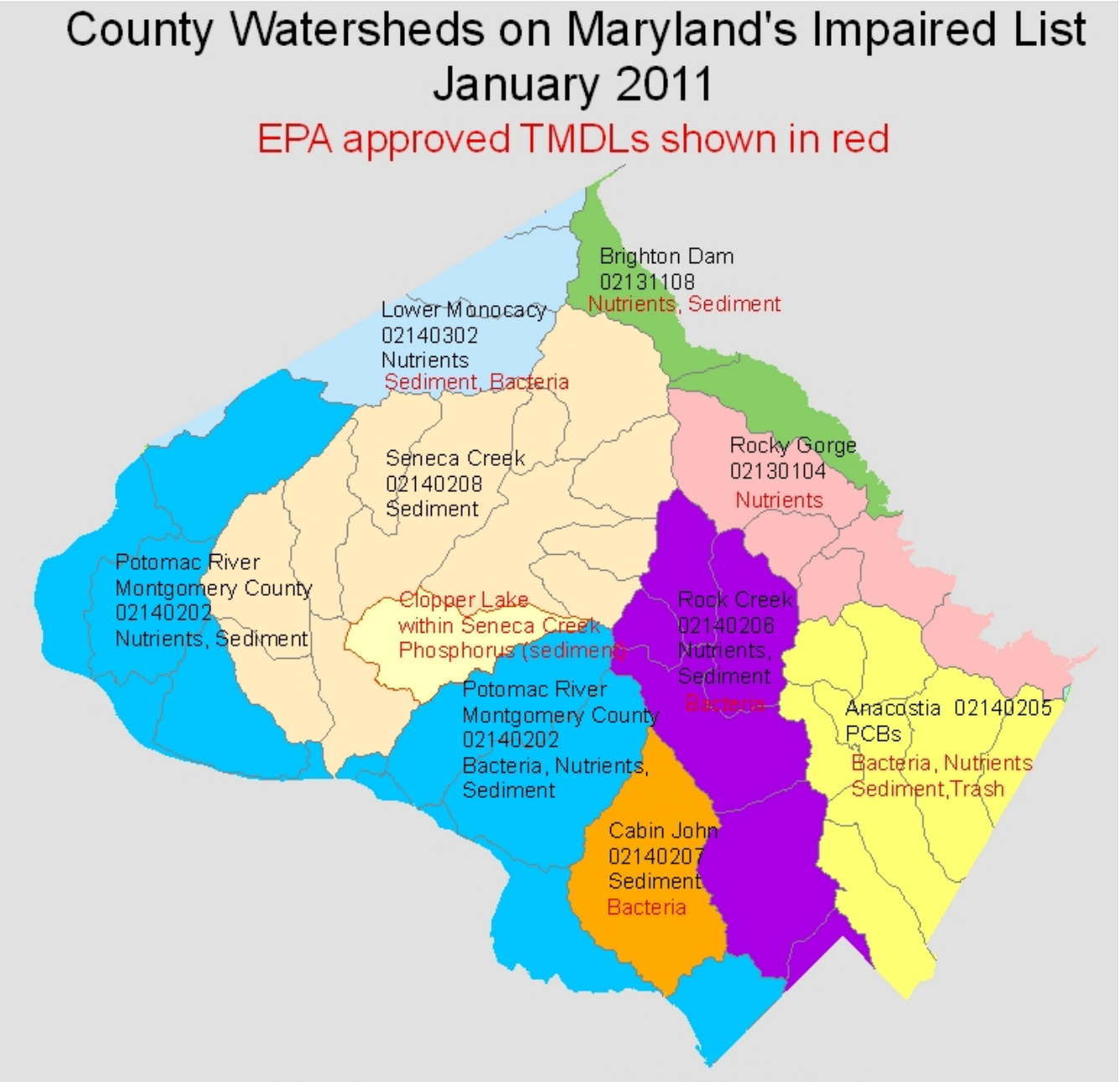
Preliminary Estimates of Reductions to Meet Bay TMDL Allocations

Target Load/Source[1,2,3,4]	Total Nitrogen (% reduction required from 2009 progress loads)	Total Phosphorus (% reduction required from 2009 progress loads)
Frederick County		
2017 Urban	12.9	21.9
2020 Urban	**18.5**	**31.3**
2017 Ag	12.2	11.2
2020 Ag	17.5	16.0
Montgomery County		
2017 Urban	11.3	25.2
2020 Urban	**16.1**	**36.0**
2017 Ag	13.6	7.6
2020 Ag	19.4	10.9
Prince George's County		
2017 Urban	6.9	22.1
2020 Urban	**9.8**	**31.6**
2017 Ag	16.9	16.7
2020 Ag	24.1	23.8
Baltimore County		
2017 Urban	15.0	28.3
2020 Urban	**21.5**	**40.4**
2017 Ag	16.8	15.2
2020 Ag	24.0	21.7
Carroll County		
2017 Urban	10.0	19.7
2020 Urban	**14.2**	**28.1**
2017 Ag	12.4	12.6
2020 Ag	17.8	18.0

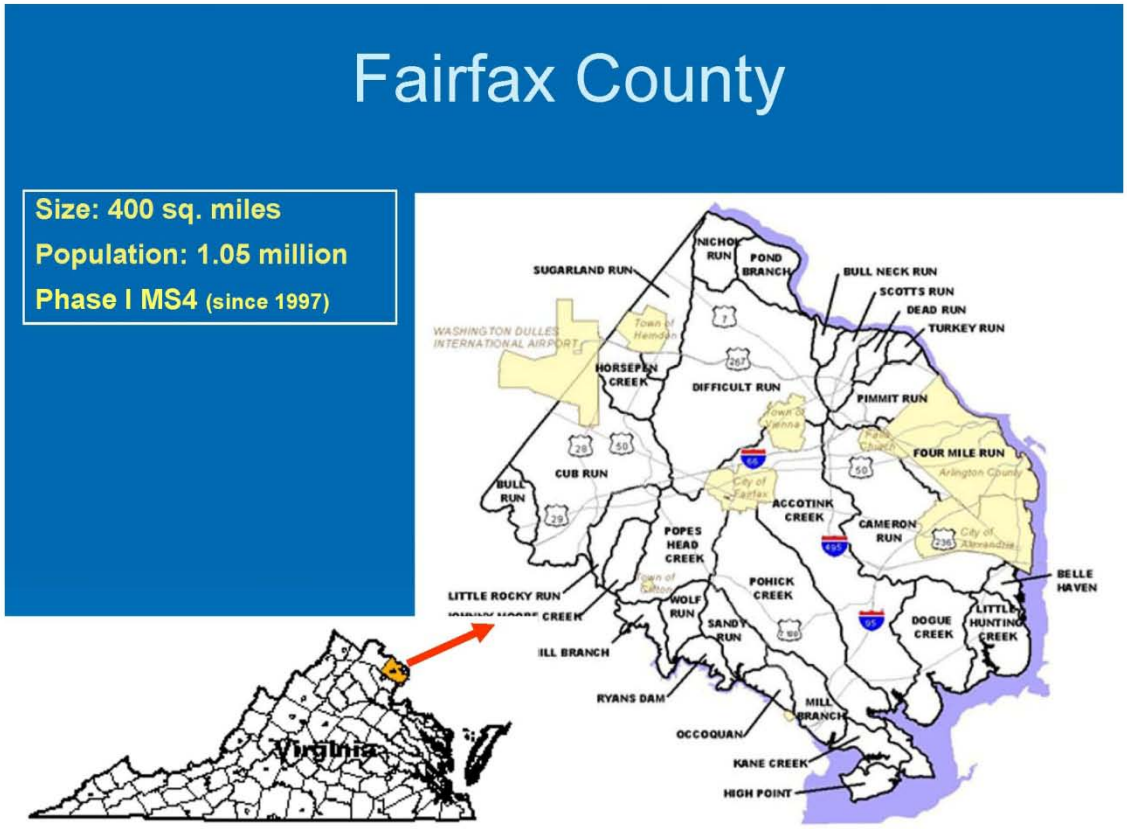
•Notes:
•1) Loading data from Phase 5.3 of the watershed model as processed by MDE; totals will change when updated data is available from Version 5.3.2 of the watershed model.
2) Urban category includes estimated loads from all urban land in these MS4 Phase I counties; target loads eventually will be broken out by federal, state and Phase II municipality categories in addition to county Phase I category.
3) The 2017 and 2020 county target loads were derived using MD's "Sub-allocation Process for the Chesapeake Bay;" see Appendix A of Maryland's Phase I Watershed Implementation Plan
4) 2017 target loads are precisely 70 % of 2020 target loads; 2020 is Maryland's self-imposed deadline for full TMDL implementation attainment

Impact of Local TMDLs

- States issuing more TMDLs based on 303d list
- EPA taking review/oversight functions more seriously
- Generally, most stringent TMDL applies



Accotink Creek: a Local TMDL Precedent?

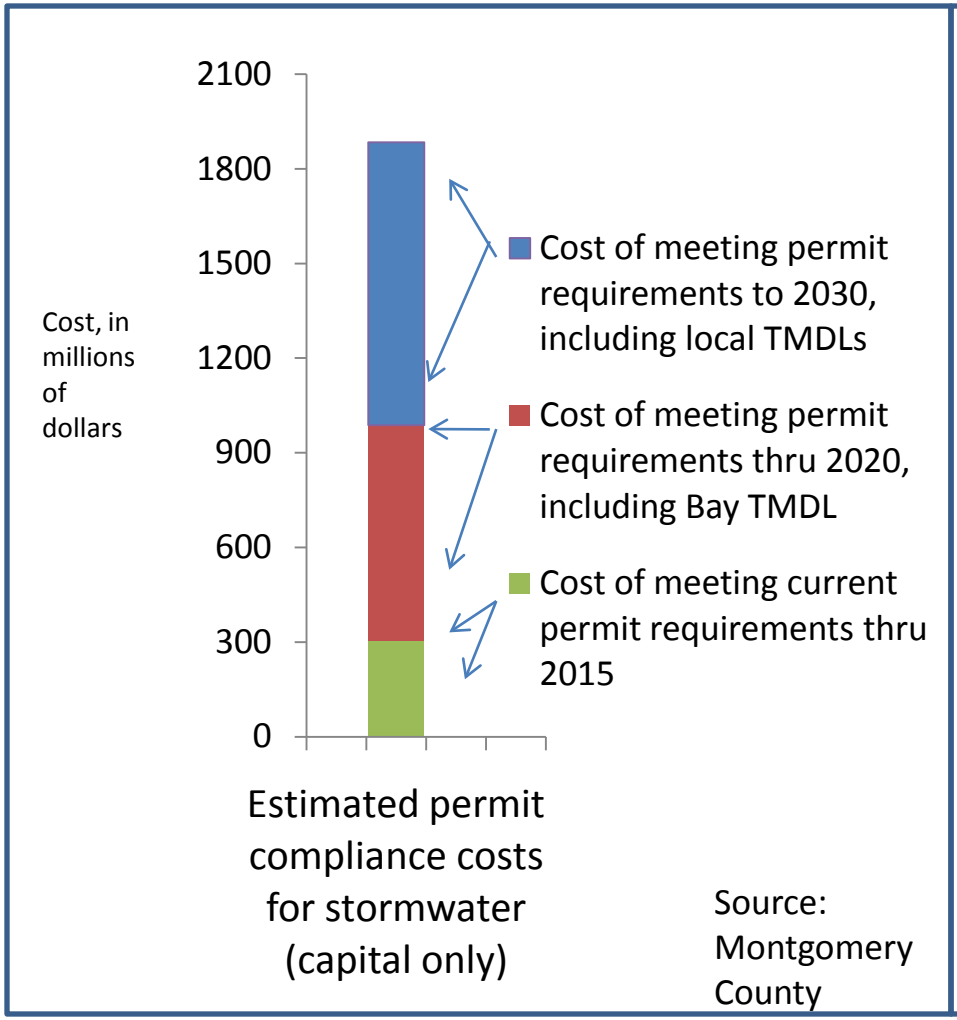


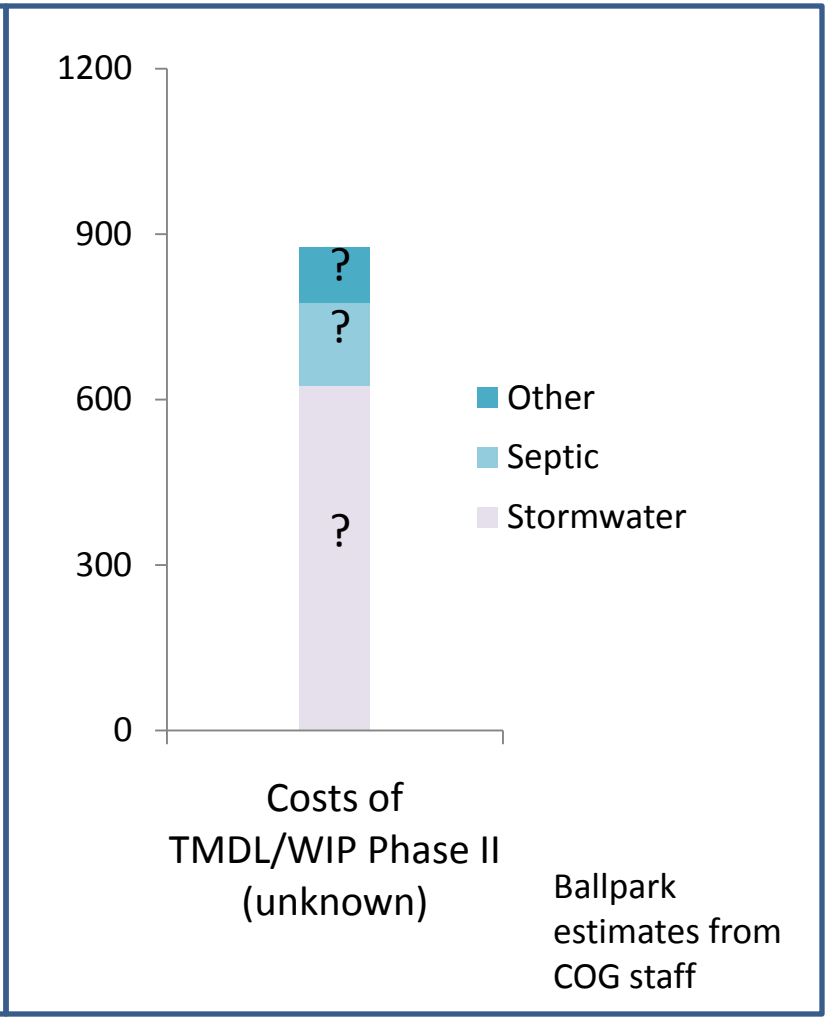
Financial and environmental impact of <u>local</u> TMDLs may eventually outweigh Bay TMDL

Accotink Creek “Flow” TMDL

- EPA is leading effort for the state
  - Based on finding of benthic impairments in various sections of the creek
  - Non-traditional approach - have proposed that TMDL be based on stormwater flow rather than sediment
- Draft TMDL proposed that peak flows from the one-year, 24-hour storm be reduced by 50 %
- County commented that achieving this standard would require retrofitting of existing development (including private property)
- Have gone through public comment - waiting to see final TMDL

Montgomery – Draft Coordinated Implementation Strategy

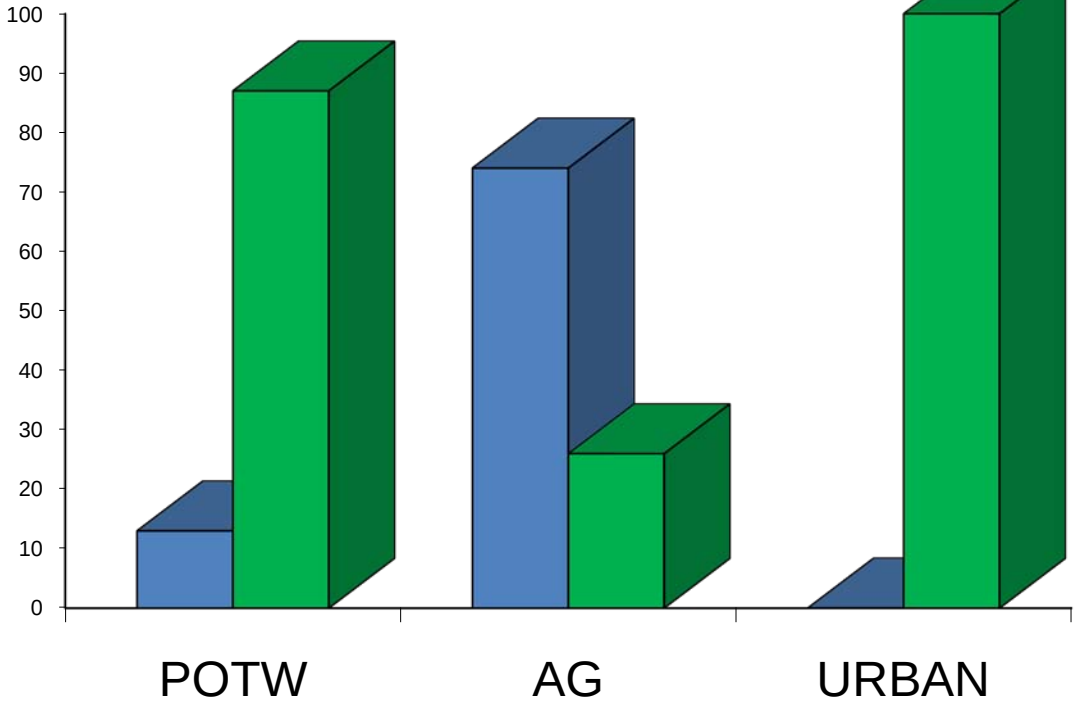




What is the Potential Cost to Anne Arundel County?

Point Source	**$270,000,000**
Septic	**$758,900,000**
Urban Stormwater	**$994,400,000**
	$2,023,300,000

Source of Funds for Bay Restoration



Unlike wastewater, funding for stormwater is exclusively local

Source: EPA CBP ECONOMIC ANALYSIS, 2003

POTW = publicly-owned treatment works, or wastewater plant

COG Members' Stormwater Taxes/Fees *(as of March 2011)*

Municipality	Tax/Fee	Date	Annual Amount			Avg. Single Family
			Single-Family	Multi-Family	Commercial	Pays Annually
District of Columbia	Fee	2001	$32.04 per ERU	$32.04 per ERU	$32.04 per ERU	$32.04
Maryland						
Bowie	Tax	1988	Not Charged	Not Charged	$.002-$.06 / $100 Assessed Value	$0
Montgomery County [1]	Tax [2]	2002	$49	Varies Based on ERU	Varies Based on ERU	$49
Prince Georges County [3]	Tax	1986	5.4 cents/ $100 Assessed Value	5.4 Cents/ $100 Assessed Value	5.4 cents/ $100 Assessed Value	variable
Takoma Park	Fee	2003	$48	(IMP Area Total/ ERU)*$48	(Impervious Surface Area Total/ ERU)*$48	$48
Rockville	Fee	2008	$49.20	Varies Based on ERU	Varies Based on ERU	$49.20
Virginia						
Arlington County	Tax	2009	1.3 cents/ $100 Assessed Value	1.3 cents/ $100 Assessed Value	1.3 cents/ $100 Assessed Value	$74
City of Alexandria	Tax [4 & 5]	2012	.5 cent/ $100 Assessed Value	.5 cent/ $100 Assessed Value	.5 cent/ $100 Assessed Value	variable, but avg. is ~$30.89
City of Manassas Park	Fee	2010	$35.60	$26.70	$35.60 per ERU	$35.60
Fairfax County	Tax	2009	1.5 cents/ $100 Assessed Value	1.5 cents/ $100 Assessed Value	1.5 cents/ $100 Assessed Value	$64
Prince William County	Fee	1994	SFR: $26.36 townhomes & condos:		$12.80 per 1,000ft^2 IMP	$26.36

1. Gaithersburg has its own Phase II permit, but its fees are administered by Montgomery County, so it is not listed separately .
2. Montgomery County's charge is technically a line item on property tax bill, but it is assessed based on impervious surface (not property value).
3. Prince Georges County 's program also includes Bladensburg, College Park, and Greenbelt under the County stormwater permit, so they are not listed separately.
4. The City of Alexandria does not have a separate line item tax for stormwater. Rather, a dedicated portion of the real estate tax will provide a portion of funding to the Stormwater Management Fund.
5. The portion of Alexandria's real estate tax being dedicated for stormwater management does not go into effect until FY 2012.

Note: Loudoun County does not use a stormwater tax or fee to support its program – so it is not listed in this table.