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Purpose & Agenda

Stormwater Management: an Emerging Challenge for Local Governments

Goal of Webinar: To raise awareness about the challenges local governments are facing to meet the increasingly stringent stormwater requirements from a regulatory perspective (MS4 permits and the Chesapeake Bay TMDL), as well as cost implications.

Final Program

I. Welcoming Remarks by **COG Board Chair Andrea Harrison** *(5 min.)*

II. Stormwater: Meeting the Management Challenge (*20 min.*)

- **Karl Berger,** COG staff

III. Jurisdictional perspectives: Lessons Learned *(40 min.)*

Moderator: **Stuart Freudberg,** COG Director of Environmental Resources

• **Jeff Seltzer**, Assoc. Dir. of Stormwater Management	District of Columbia
• **Randy Bartlett**, Deputy Director, Public Works	Fairfax County
• **Bob Hoyt**, Dir. of Environmental Protection	Montgomery County
• **Sam Wynkoop**, Dir. of Environmental Resources	Prince George's County

IV. Question and answer session with presenters *(20 min.)*

V. Wrap up and next steps *(5 min.)*

Stormwater Management: an Emerging Challenge for Local Governments

COG Board Webinar

October 14, 2011

Metropolitan Washington Council of Governments

Today's Presentation

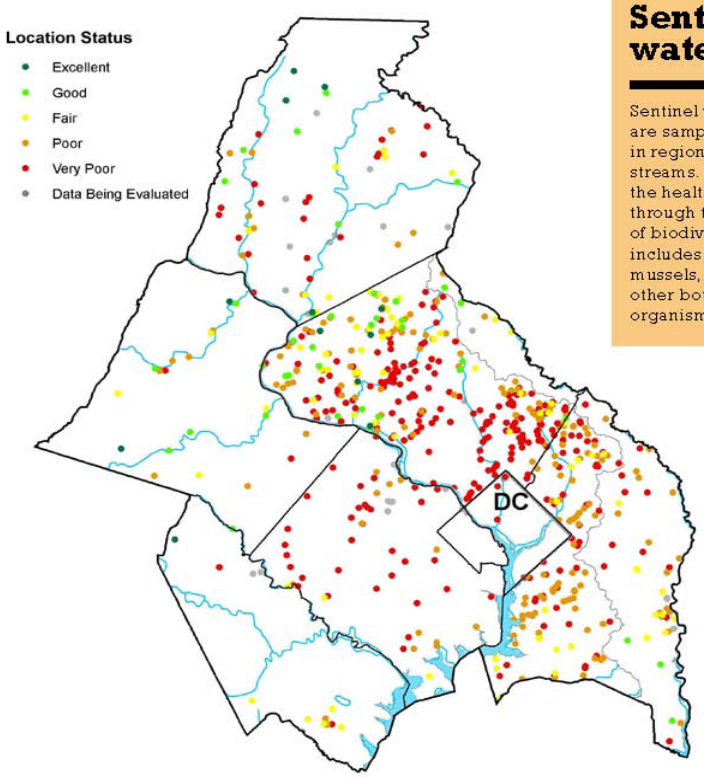
- A few basics
- What drives stormwater management requirements at local level
  - Construction, post-construction regulations
  - MS4 permits
  - Local TMDLs
  - Bay TMDL
- Costs

Stormwater: It's About Protecting Local Streams and the Bay

- Quantity issues – volume of stormwater flow causes problems
  - Flooding, streambank erosion
- Quality issues – stormwater carries pollutants from the landscape to local streams, rivers and the Bay
  - Sediments
  - Nutrients (nitrogen and phosphorus)
  - Bacteria
  - Oil and grease
  - Toxic chemicals (e.g. pesticides)

Many Urban Streams in COG Region in Poor Health

Health of Freshwater Streams in the National Capital Region



Sentinel watersheds

Sentinel watersheds are sampling points in regional freshwater streams. They measure the health of streams through the abundance of biodiversity that includes snails, mussels, insects, and other bottom-dwelling organisms.

** Map courtesy of the EPA Chesapeake Bay Program*

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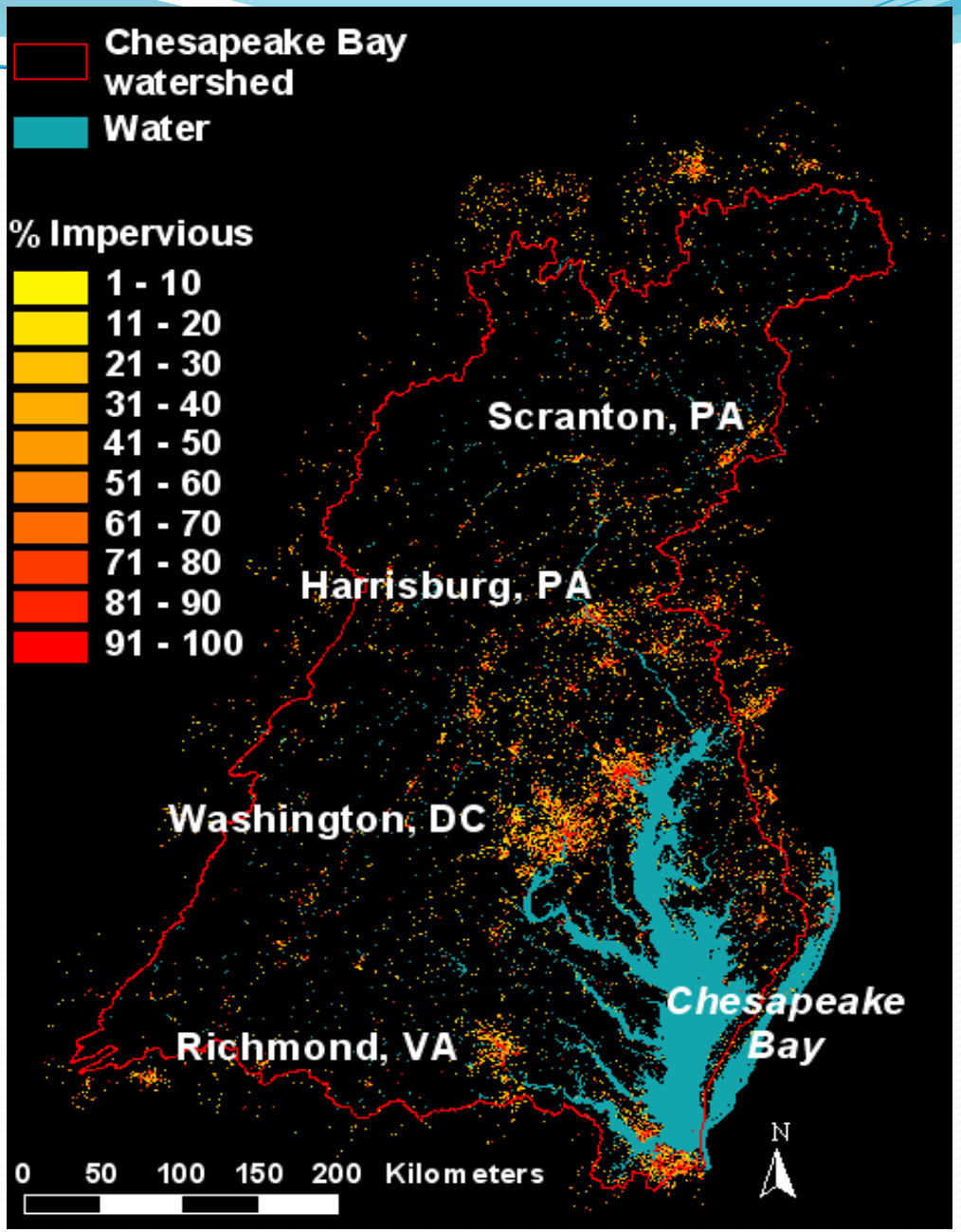
Need to Address Impervious Surface

Volume of stormwater flowing from an acre of impervious cover is about **16 times** the flow from an acre of undeveloped land



Municipal Stormwater Drivers

- State, Local Stormwater Management Regulations
  - Local governments implement through permitting, inspection for new and re-development projects
- MS4 Permit Status
  - Requires local governments stormwater programs to address areas such as illicit discharge, monitoring, education, etc.
  - Means by which local governments are required to achieve regulatory limits on pollution
- Local TMDLs
  - E.g. Anacostia River for nutrients and sediment (2007-2008), trash (2010)
  - Accotink Creek(Fairfax County) for flow (2011)
- Chesapeake Bay TMDL
  - Chesapeake Bay for nutrients and sediment (2010)

Municipal Stormwater Drivers

- State, Local Stormwater Management Regulations

  Issue: Maintaining balance between water quality and smart growth

- MS4 Permit Status

  Issue: Permit compliance

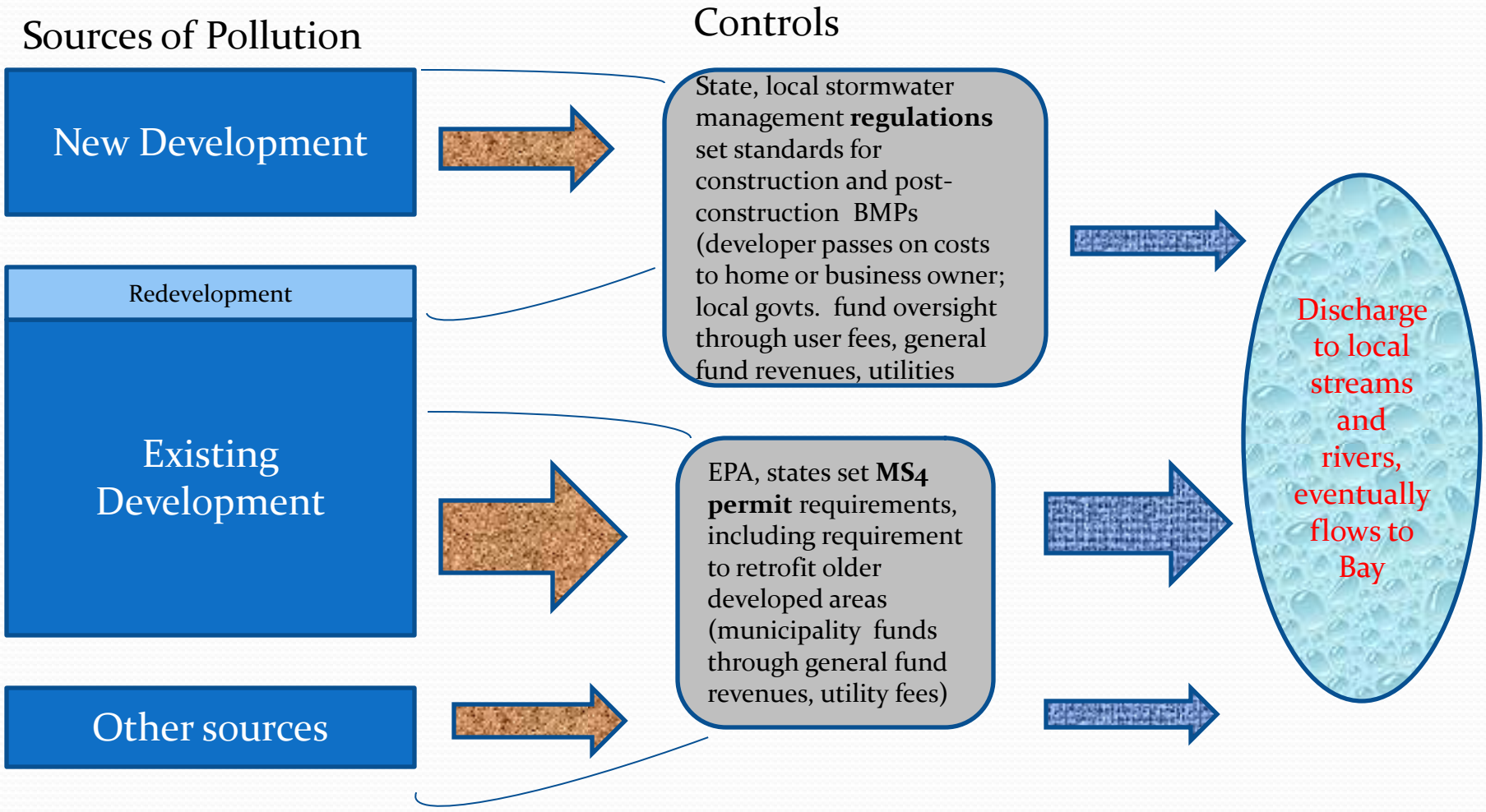
- Local TMDLs

  Issue: Potential mismatch between goals and what can be accomplished

- Chesapeake Bay TMDL

  Issue: Deadlines

Who's Responsible for Managing Stormwater



Stormwater Regulatory Requirements

Maryland

- Issued new state standards in 2010
- Based on controlling runoff volume

Virginia

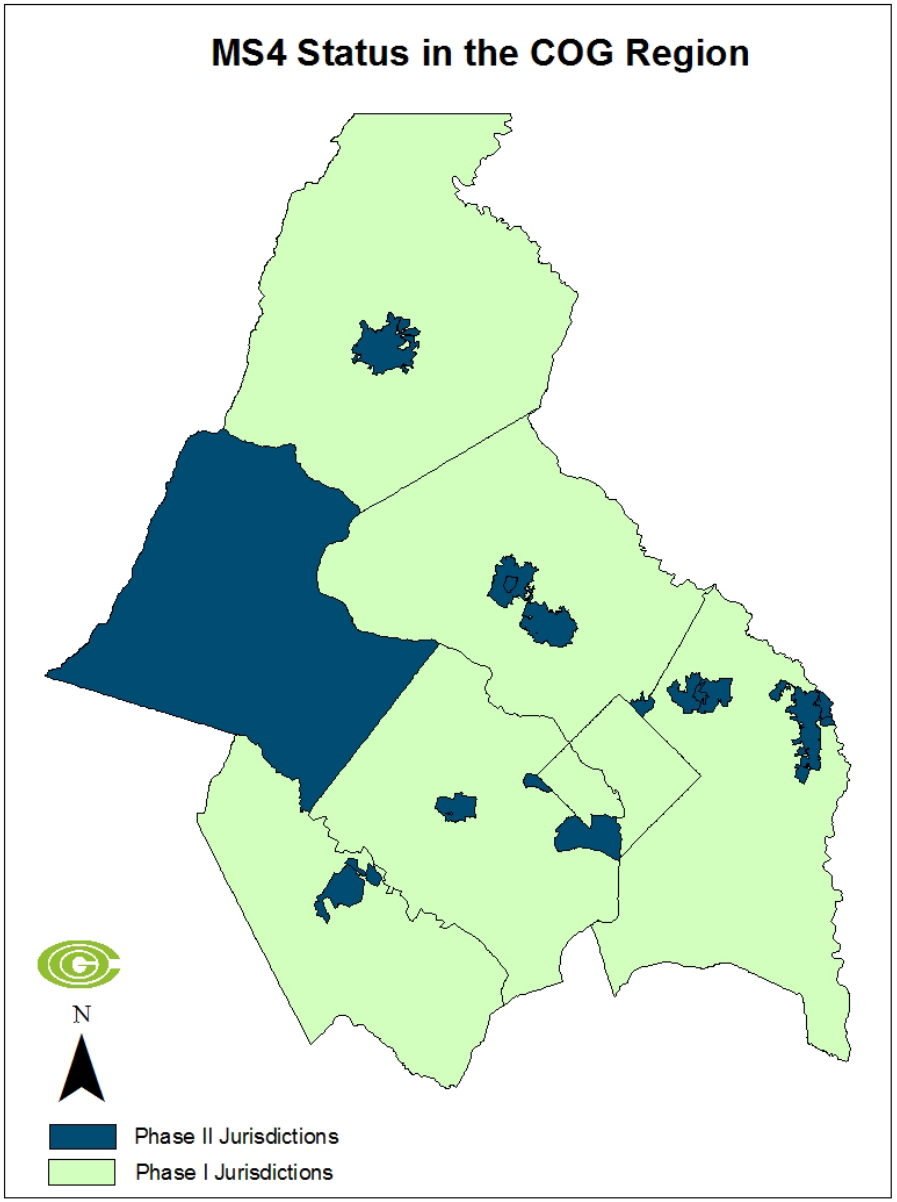
- Issued new state standards in 2011
- Based on reducing pollutant lands in runoff

District of Columbia

- Working on revising standards
- Will be based on controlling runoff volume

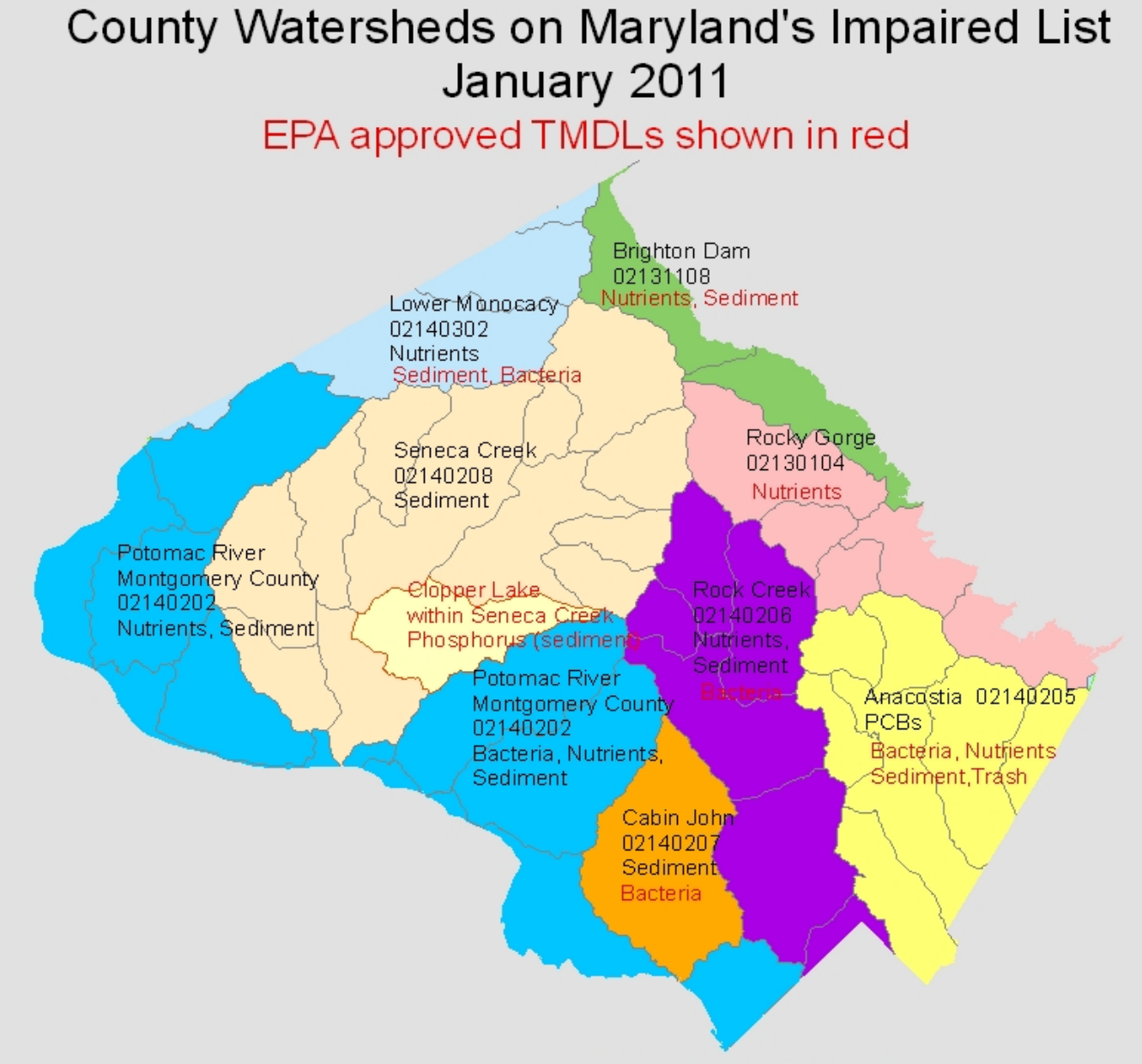
MS4 Permit Status in COG Region

- All COG members subject to Phase I (*larger counties*) or Phase II (*smaller counties and towns*) MS4 permits
- Permit renewals (*as issued either by states or, for DC, by EPA directly*) require "consistency" with "applicable TMDL wasteload allocations"
  - Phase Is – Revised permits either in place (Montgomery, District) or being renewed now
  - Phase IIs - Due for renewal in 2012, 2013



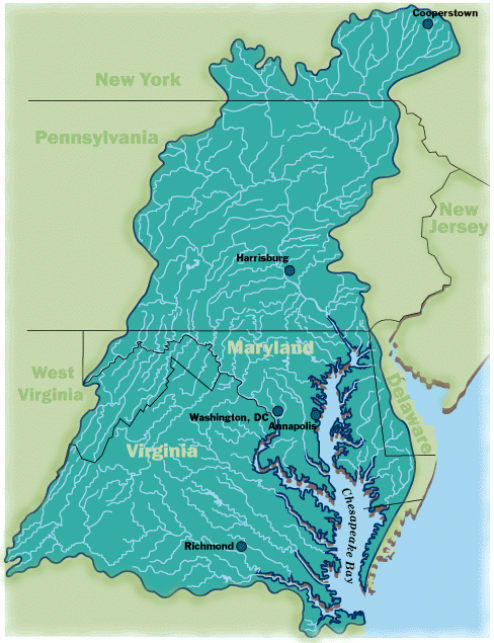
Example of Local TMDLs

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

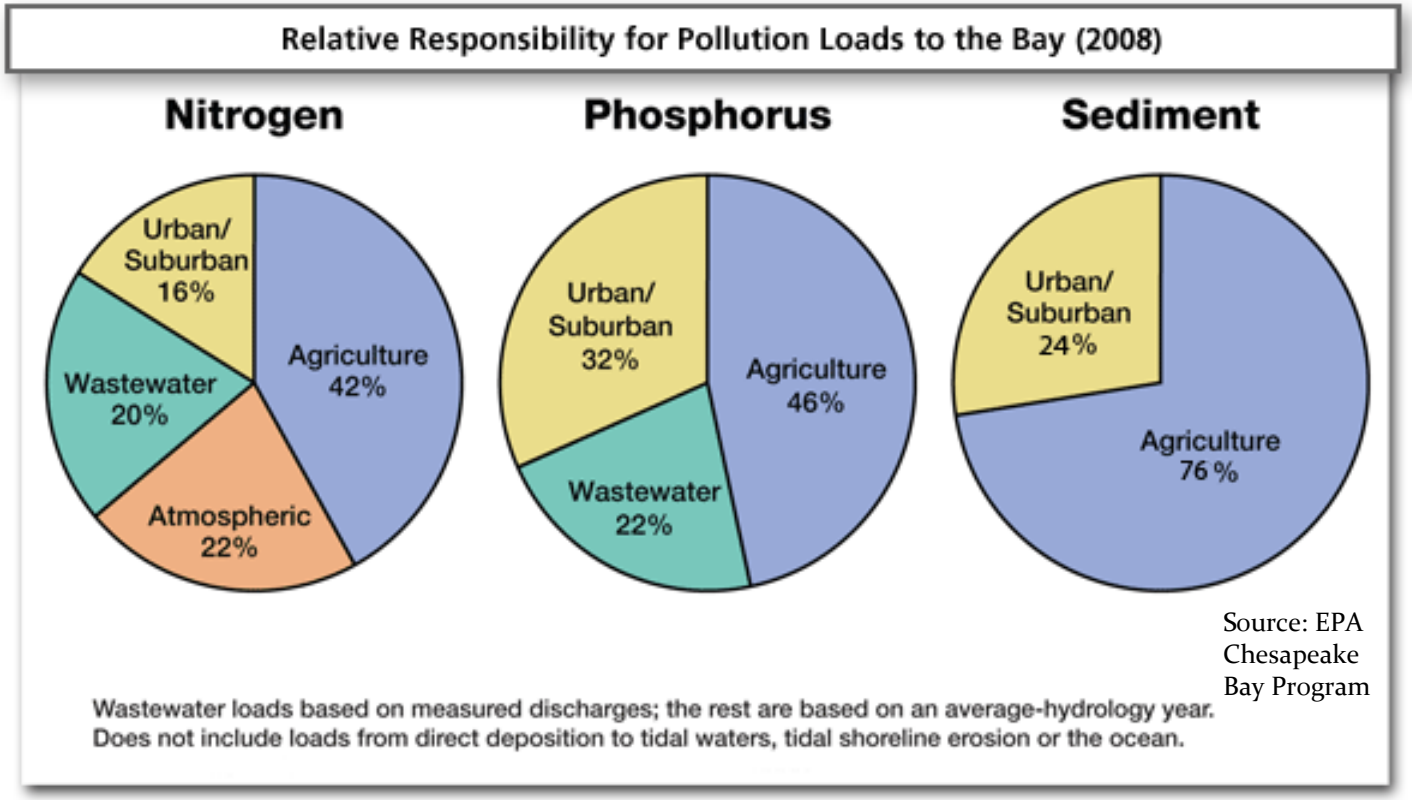


Bay TMDL – How It Works

- Bay is impaired; fails to meet water quality standards under Clean Water Act
- EPA issues Bay-wide TMDL (total daily maximum load) in 2010
- The Bay TMDL sets pollution diet for Bay -- how much pollution will be allowed from each of the major sources, including "wasteload allocations" for MS4 permittees
- In 2010, states developed Phase I watershed implementation plans (WIPs) for meeting TMDL targets; now working on Phase II WIPs with local governments

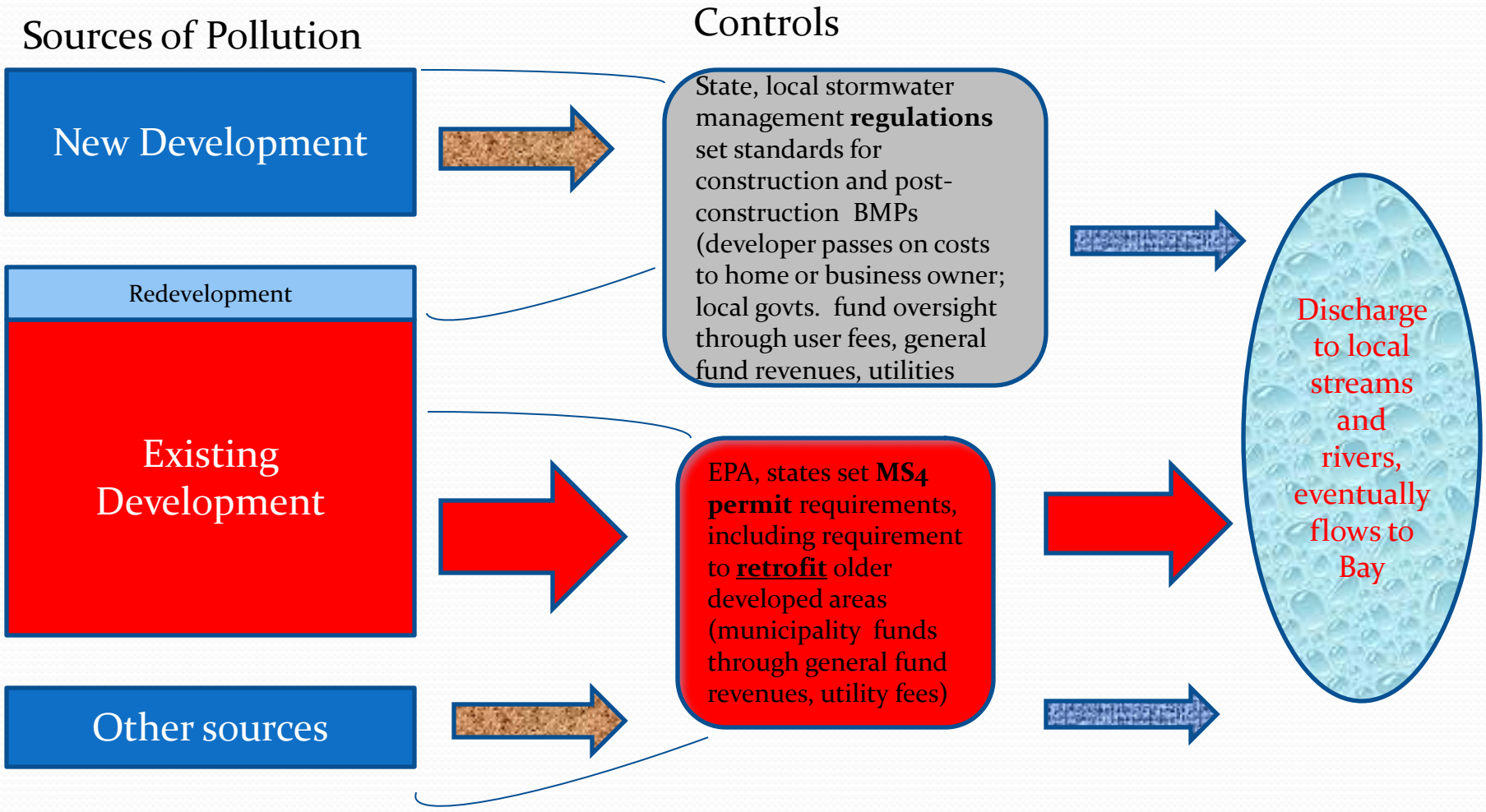


Bay Pollution by Sector – Who's Responsible



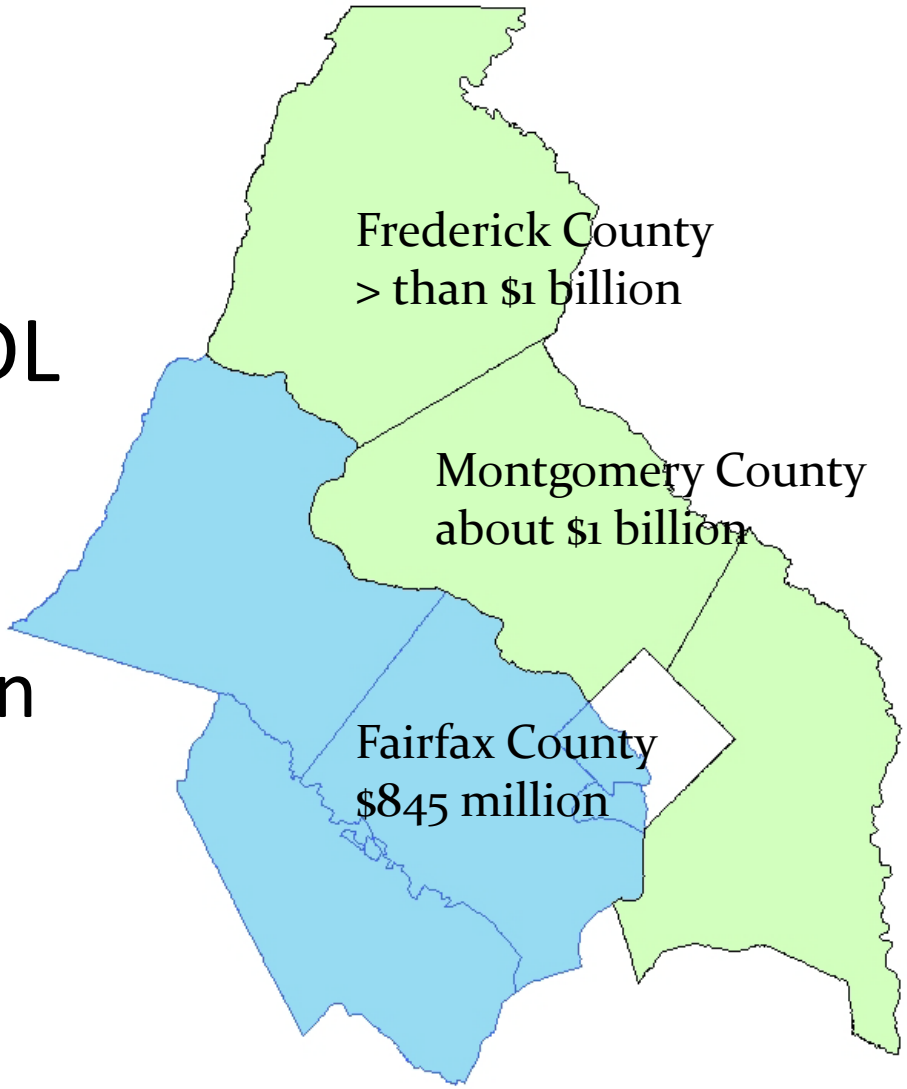
Since wastewater is on track to implement "limit of technology," agricultural and urban runoff are the prime targets for further reductions

Who's Responsible for Managing Stormwater

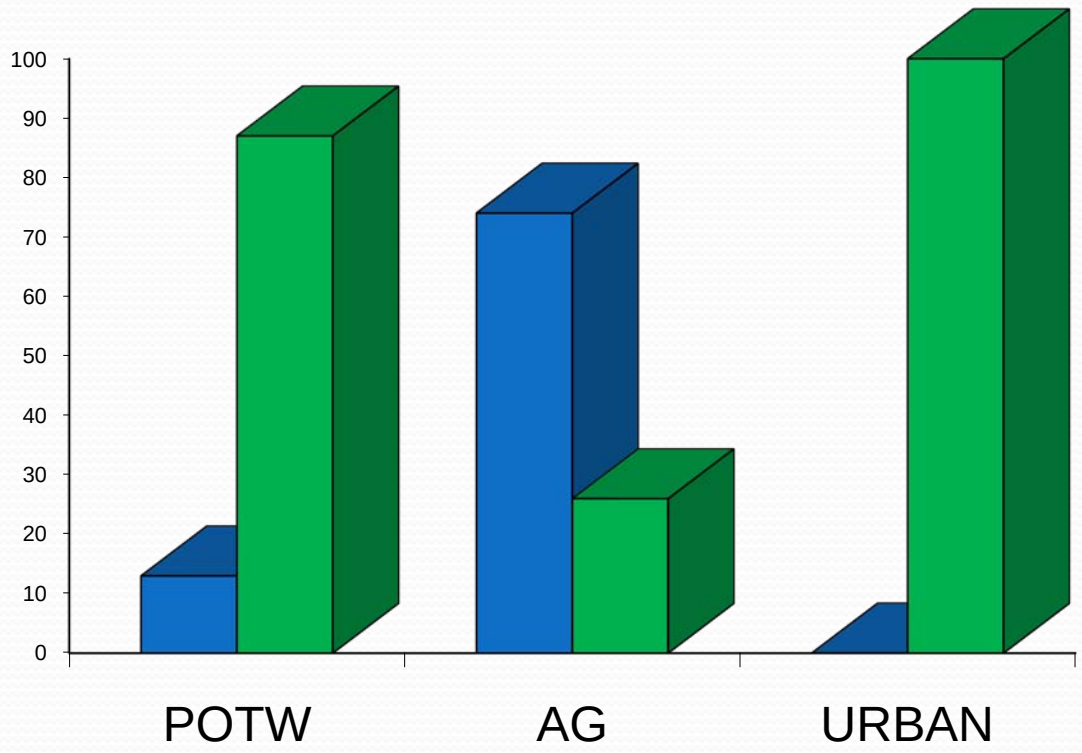


Preliminary Capital Cost Estimates To Meet Bay TMDL Requirements

(largely for urban stormwater retrofits)



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.

COG staff contacts and more information

Contacts

- Stuart Freudberg, Director of Environmental Programs, sfreudberg@mwcog.org, 202-962-3340
- Karl Berger (stormwater regulations) kberger@mwcog.org, 202-962-3350
- John Galli (Anacostia program, stormwater technical details) jgalli@mwcog.org, 202-962-3348

More Info

- CBPC web page: http://www.mwcog.org/environment/water/chesapeake/
- Chesapeake Bay Program web page: http://chesapeakebay.net/

The following slides were not part of the webinar presentation on 10/14/11. They are included for additional information.

Some Terms

- **Best management practices (BMPs)** - The most effective and practical ways to control pollutants and meet environmental quality goals. BMPs exist for forestry, agriculture, stormwater and many other sectors.
- **Imperviousness** - A surface or area that is hardened and does not allow water to pass through. Roads, rooftops, driveways, sidewalks, pools, patios and parking lots are all impervious surfaces.
- **Low-impact development (LID) / environmental site design (ESD)** - Innovative stormwater management practices that mimic a site's pre-development hydrology. LID uses design techniques that reuse runoff and allow it to soak into the soil, helping to protect local water quality
- **MS4 permit** – refers to municipal separate storm sewer system, which EPA has defined as a point source discharge under the Clean Water Act and
- **Retrofits** – Installing new stormwater BMPs or updating older ones in areas that have already been developed, a MS4 permit requirement in Maryland
- **Stormwater** - Any precipitation in an urban or suburban area that does not evaporate or soak into the ground, but instead pools and travels downhill. Stormwater is also referred to as urban stormwater, runoff and polluted runoff. Increased development across the Bay watershed has made stormwater runoff the fastest growing source of pollution to the Bay and its rivers.
- **Total maximum daily load (TMDL)** - Defines the pollutant load that a water body can acquire without violating water quality standards, and allocates the pollutant loading between contributing point sources and non-point sources. There are both local and regional TMDLs.

Responsibility for Managing Stormwater - I

EPA

- Sets national requirements for:
  - construction and post-construction stormwater management
  - MS4 permits
- Sets pollution limits ("wasteload allocations") for Bay TMDL
- Approves pollution limits for local TMDLs

Maryland

Virginia

States

- Issue construction and post-construction stormwater regulations
- Issue MS4 permits
- Divide up Bay allocations into loads for ag, urban, etc.; set county targets
- Establish local TMDLs; set targets

District of Columbia

District

Operates as both a state (setting stormwater regulations) and a local government (receiving its own MS4 permit directly from EPA)

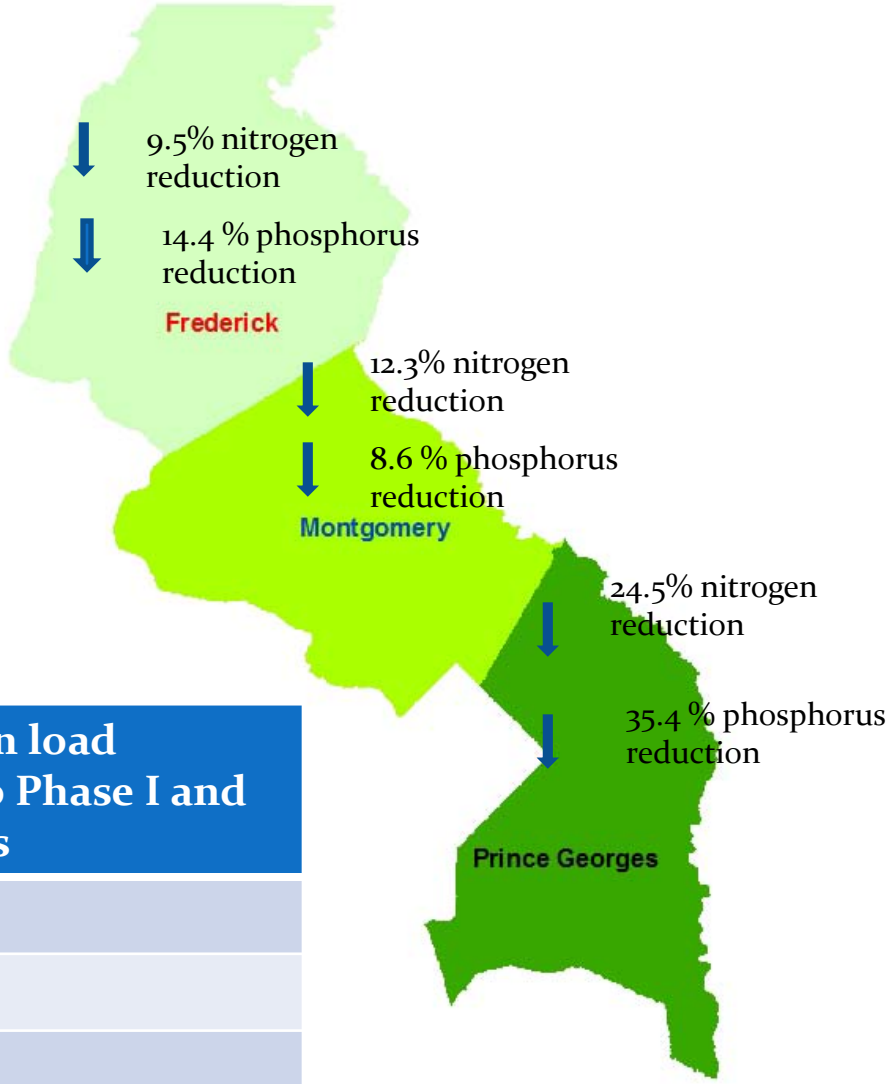
Local Governments

- Administer stormwater construction and post-construction regulations
- Comply with MS4 permits
- Develop implementation plans for meeting Bay, local TMDL reduction targets

MS4 Permit Details

- Begun by EPA's 1990 regulations for stormwater discharges (Phase I permits issued to municipalities > 100,000; Phase II permits to municipalities < 100,000)
- Issued by state agencies in MD and VA; by EPA for the District
- Permittees must comply with variety of provisions, including:
  - **Legal authority** - permittee must demonstrate authority to control discharges to its muncipal storm drain system
  - **Source identification** – mapping of drainage systems, BMPs, etc.
  - **Management programs** to oversee construction practices, maintain existing infrastructure, detect and eliminate illicit connections and educate the public
  - **Watershed assessment** of all watersheds affected by urban drainage
  - **Retrofit** requirement to improve stormwater management in older developed areas
  - **Assessment of controls**, including requirements for biological, physical and chemical monitoring
  - **Program funding** source that will provide needed revenue on an annual basis

Phase II WIP Reduction Responsibility (for urban stormwater)



Jurisdiction	% of nitrogen load attributed to Phase I and II permittees
Frederick	69 %
Montgomery	83%
Prince George's	67%

Comparison of Stormwater Regulatory Requirements

Jurisdiction / Authority	New Development Requirement	Redevelopment Requirement	MS 4 permits
Maryland **Sets floor for municipal ordinances in Maryland** 2007 Stormwater Management Act ; final regulations were adopted in April 2009 and updated in 2010 (COMAR ref. # 26.17.02.00)	**Strictest state standard in region** **Based on controlling storm/runoff volume** Control runoff from all storms up to the volume of the 1-year/24-hour storm (app. 2.7 inches) using ESD to the MEP; control of the first inch must be done using ESD techniques.	**Based on controlling storm/runoff volume** Either reduce imperviousness, implement ESD to the MEP to control 1 inch of rainfall, or use some combination of these on at least 50% of the existing impervious area; any new imperviousness must be controlled to new development requirements – i.e. 2.7 inches. *Note: both Montgomery and Prince George's counties have established stricter local standards*	**In flux** New Phase I permit issued to Montgomery County in February 2010; provisions include requirement to provide additional stormwater management on 20 % of the impervious area in the county not already managed to the MEP State is negotiating new round of 5-year permits with other Phase I permittees (subject to EPA approval); new Phase II permit will follow
Virginia **Sets floor for municipal ordinances in Virginia** Various General Assembly legislation; final Virginia Stormwater Management Program regulations were adopted in May and took effect no later in Oct.	**Not as stringent as Maryland's, but Virginia may establish more stringent standards for its Bay drainage; based on reducing pollutant loads in runoff** Total amount of phosphorus in runoff from the site shall not exceed 0.41 pounds/acre/year	**Based on reducing pollutant loads in runoff** Reduce P "load" by at least 20 % (if site disturbance ≥1 acre) or 10 % (if site disturbance < 1 acre); any increased impervious acreage must meet the new development standard (i.e. 0.41 lbs TP/acre/year)	**In flux** State is negotiating new round of 5-year permits with Phase I permittees (subject to EPA approval); new Phase II permits will follow
District of Columbia (proposed) **In most regulatory matters, the District functions likes its own state.** Various City Council legislation; final revised regulations yet to be issued	**Based on controlling storm/runoff volume** Control runoff from all storms up to the volume of the 90th percentile storm (1.2 inches) using ESD techniques)	**Would be strictest state standard in region ; based on controlling storm/runoff volume** Control runoff from all storms up to the volume of the 90th percentile storm (1.2 inches) using ESD techniques	**Finalized Oct. 5, 2010** Has requirements for installing 18 million sq. ft. of stormwater retrofits in the city and 350,000 sq. ft. of green roofs on District properties.