

Chesapeake Bay Stormwater Listening Session

“Virtual” Listening Session Webcast
November 16, 2010

www.epa.gov/npdes/stormwater/rulemaking



U.S. Environmental Protection Agency



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Purpose of Today's Webcast

- On December 28, 2009, EPA announced national rulemaking to strengthen its stormwater program.
- One of the preliminary considerations included exploring specific stormwater provisions to protect sensitive areas.
- Today's webcast will provide the public with an early opportunity to learn about and comment on stormwater requirements within the Chesapeake Bay watershed.

Agenda

- EPA introduction and short presentation
 - Purpose of Today's Session
 - Regulations
 - Chesapeake Bay Watershed Challenges
 - Stormwater Challenges
 - Preliminary Considerations to Address Challenges
 - Environmental Justice Considerations
- Oral comments by participants and answers to submitted written questions

The Clean Water Act: *The Objective*

“to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”



The Clean Water Act: *The Goals*

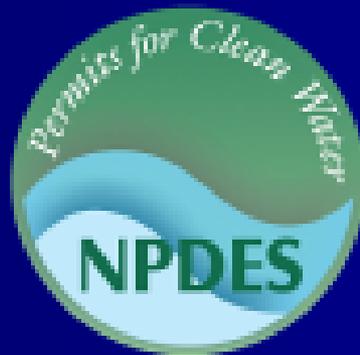
- eliminating the discharge of pollutants into navigable waters; and
- achieving interim water quality that will protect fish, shellfish, and wildlife while providing for recreation (“fishable and swimmable”) in and on the water whenever attainable.



Image Credit: Middleton Evans

The Clean Water Act: *The Tools*

National Pollutant Discharge Elimination System (NPDES) permitting program authorizes and regulates certain discharges (§ 402), including stormwater discharges.



Stormwater Regulations

Phase I (finalized in 1990)

- Regulates stormwater discharges from:
 - Medium and large municipal separate storm sewer systems (MS4s) in areas that serve 100,000 or more people
 - 10 categories of industrial operations including construction activity disturbing 5 acres or more

Phase II (finalized in 1999)

- Defines “small MS4” as any MS4 that is not “medium” or “large”
- Regulates stormwater discharges from:
 - Small MS4s
 - Construction activities disturbing between one and five acres

Phase II Stormwater Regulations (Cont'd)

- Established six minimum control measures for small MS4 permits:
 1. Public Education & Outreach
 2. Public Participation/Involvement
 3. Construction Site Runoff Control
 4. Illicit Discharge Detection & Elimination
 5. Post-Construction Runoff Control
 6. Pollution Prevention/Good Housekeeping

MS4s in the Chesapeake Bay watershed

Pennsylvania, West Virginia, Delaware and New York

Phase II Jurisdictions

Maryland Phase I and II NPDES Jurisdictions

Phase I "Large" Jurisdictions

Phase I "Medium" Jurisdictions

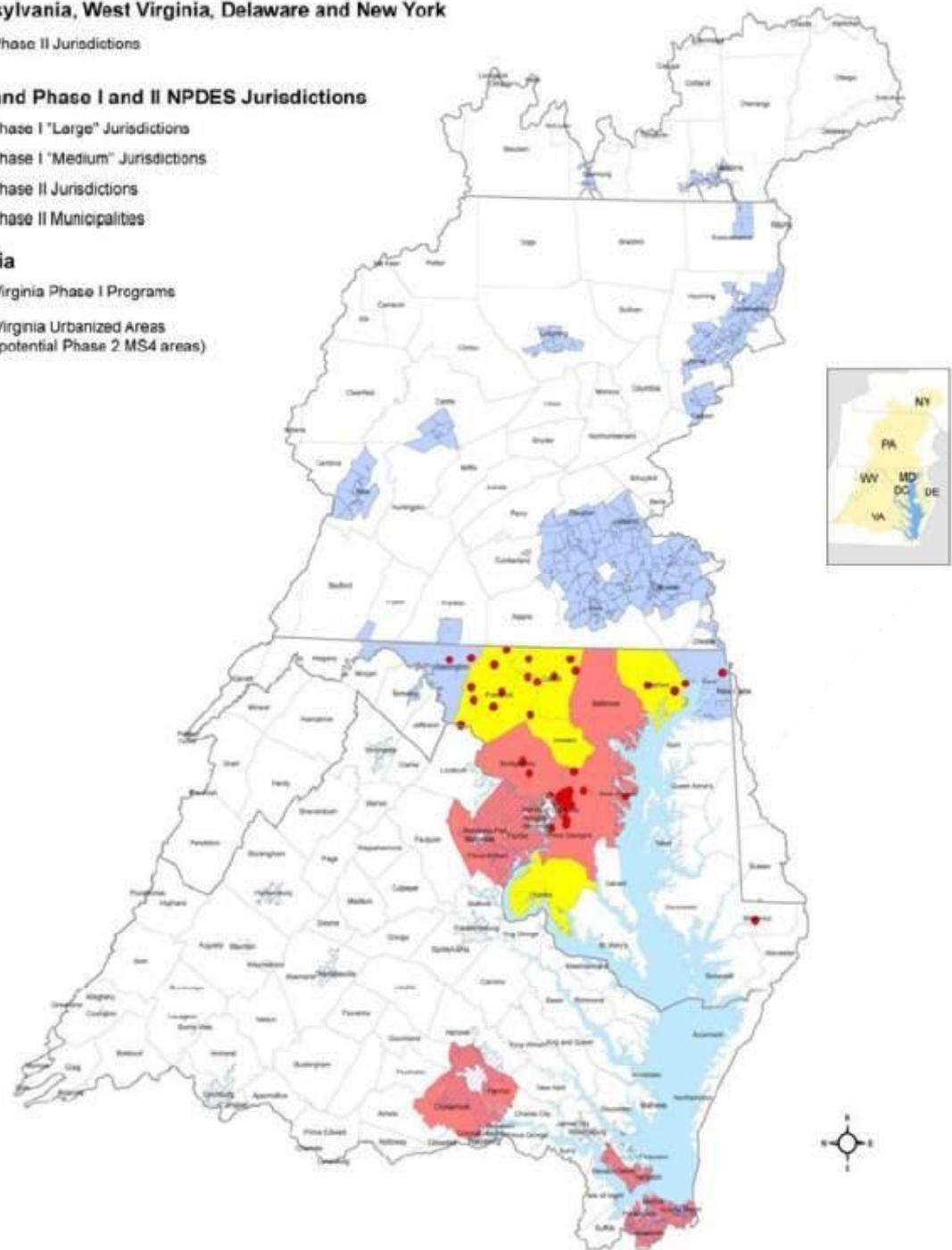
Phase II Jurisdictions

Phase II Municipalities

Virginia

Virginia Phase I Programs

Virginia Urbanized Areas
(potential Phase 2 MS4 areas)



Number of Stormwater MS4 Permittees (as of Summer 2009)

Stormwater Permit Type	DC		DE		MD		NY	
	Bay-wide	DC-wide	Bay-wide	State-wide	Bay-wide	State-wide	Bay-wide	State-wide
MS4 Phase I	1	1	1	14	11	11	0	1
MS4 Phase II	0	0	0	3	82	82	34	502
Total	1	1	1	17	93	93	34	503
% Permittees in the Bay	100%		6%		100		7%	

Stormwater Permit Type	PA		VA		WV		Total	
	Bay-wide	State-wide	Bay-wide	State-wide	Bay-wide	State-wide	Bay	State
MS4 Phase I	0	2	11	11	0	0	24	40
MS4 Phase II	206	727	75	90	3	45	400	1449
Total	206	729	86	101	3	45	424	1489
% Permittees in the Bay	28%		85%		7%		29%	

Stormwater In the News



Skirting stormwater rules

A plan for a shopping center in Remington fails a key environmental test

By Tina Davitt

It is considered a violation to be in violation of the stormwater management plan. The plan for a shopping center in Remington, Md., has failed a key environmental test. The plan for the shopping center, which is located on a 100-acre site, was approved by the local government. However, the plan failed to meet the requirements of the stormwater management plan. The plan for the shopping center, which is located on a 100-acre site, was approved by the local government. However, the plan failed to meet the requirements of the stormwater management plan.

Richmond Times-Dispatch

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Chesapeake Bay effort targets polluted runoff in Richmond

By **Wendy Martin** | **THE RICHMOND TIMES-DISPATCH** | **WRITER**

Published: Oct 15, 2012

2 Comments | Post a Comment

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THE BALTIMORE SUN

Storm over storm water

Our view: Bigot regarding runoff cases here by encouraging redevelopment? The evidence is not compelling enough to weaken — or even delay — pending rules

April 26, 2012

Over the past few weeks, the Chesapeake Bay has been the focus of a storm over storm water. The storm is not a natural one, but a political one. It is the result of a battle between those who want to see the Chesapeake Bay cleaned up and those who want to see it left alone. The storm is not a natural one, but a political one. It is the result of a battle between those who want to see the Chesapeake Bay cleaned up and those who want to see it left alone.

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The Patriot-News

Monday, October 15, 2012

Land looks plans for smart growth

Up all hand company worries with the community to help it understand the full impact of its land use.

Land use is a hot topic in the world of smart growth. It is the result of a battle between those who want to see the land used in a smart way and those who want to see it left alone. Land use is a hot topic in the world of smart growth. It is the result of a battle between those who want to see the land used in a smart way and those who want to see it left alone.

CHESAPEAKE BAY JOURNAL

State 1 | Database 222 | 1998 EPA Enforcement actions intended to send message to polluters

The goal is to ensure that companies in the Bay understand what is expected of them.

Recent EPA enforcement actions intended to send message to polluters

The goal is to ensure that companies in the Bay understand what is expected of them.

The Washington Post

Md. environmentalists split over stormwater pollution rules

More than 30 Maryland environmentalists—including a former governor, a former U.S. senator and a former congressman—held a press conference today in Annapolis to denounce efforts to revise rules on pollution flowing to the Chesapeake Bay through storm sewers.

The event, led by former U.S. Senator Joseph Tydings (D-Md.), was another sign of a fracturing in Maryland's green community over an arcane area of environmental law.

This year, land developers were supposed to face a new set of rules defining the ways that water could run off new or re-developed properties. Maryland would require them to do more to stop that water and filter it naturally. Often, stormwater rushes off concrete and rooftops, carrying road grease and algae-feeding chemicals into the bay.

But developers objected to this plan, saying it was so restrictive that it would stop growth—or re-direct it into undeveloped areas, away from "smart growth" sites near urban cores.

To head off a battle, Del. Maggie McIntosh (D) brokered a compromise between developers, local governments, and environmental groups. The two at the table, reportedly, the Chesapeake Bay Foundation and 1,000 Friends of Maryland.

Under that deal, some un-finished projects could be "grandfathered" in, built under the old stormwater rules, if they received the right kind of permission. Also, some projects could face looser restrictions in "in-fill" developments.

All today's press conference, activists said that was giving developers too long a leash.

The Gables

Talbot ponders Md. stormwater regulations

Carolanne Threlkeld, Talbot, Md., is a member of the Chesapeake Bay Foundation. She is a member of the Chesapeake Bay Foundation. She is a member of the Chesapeake Bay Foundation.

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What is Environmental Justice?

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.



...everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, work.

Why is stormwater a problem?

- Increased stormwater volume can cause flooding, scouring and sewer overflows.
- Stormwater pollutants:
 - Cause beach closures and swimming illnesses through bacterial contamination
 - Impact fisheries through excess:
 - Sedimentation (smothering fish eggs),
 - Nutrients (reducing available dissolved oxygen)
 - Metals (posing a health risk to people who eat the fish)
 - Temperature (affecting cold-water fish and other biota)
- Stormwater pollutants can also increase the costs of treating drinking water supplies

Stormwater Challenges

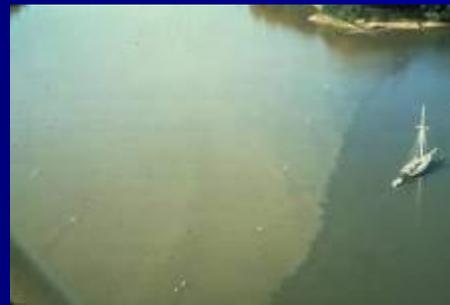
1. Increased amounts of stormwater and pollutants...



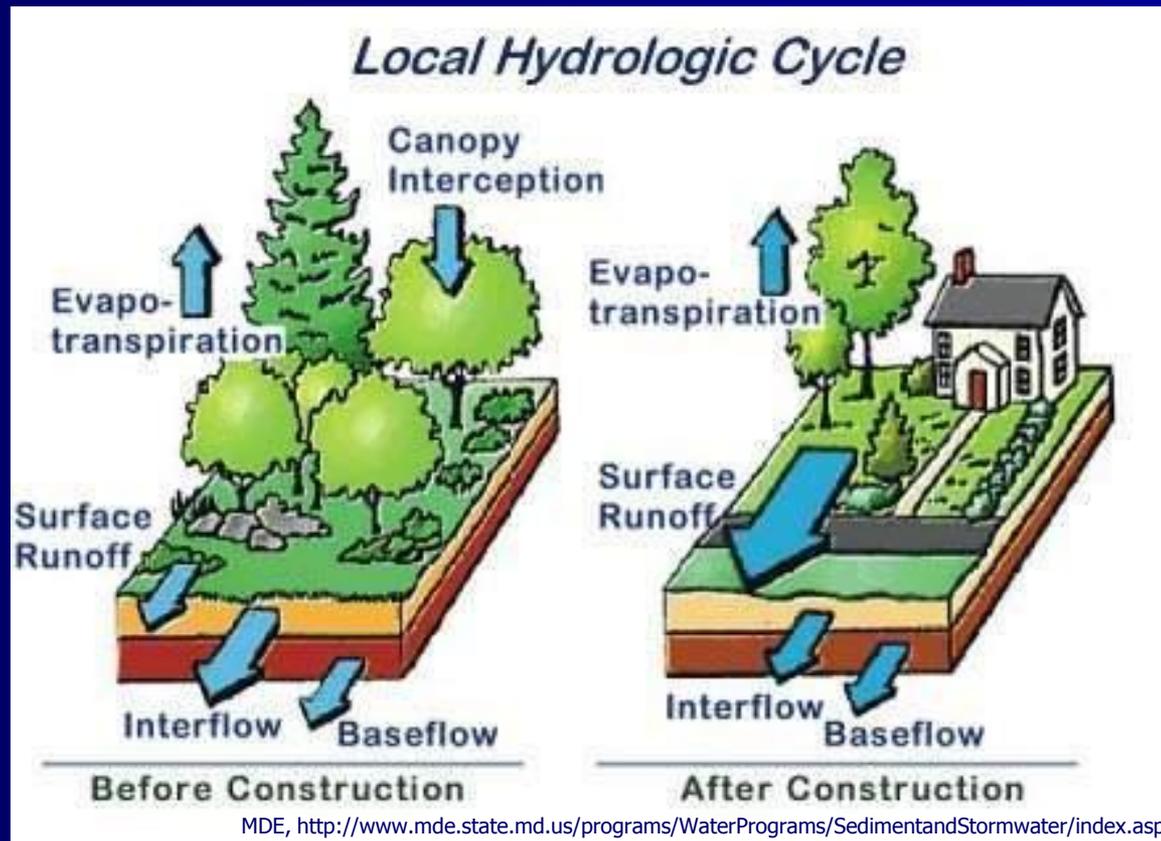
2. Enter the municipal separate storm sewer system (MS4) or is directly discharged to a nearby waterbody...



3. Which can lead to stream degradation and increased pollutants entering waterbodies



Alteration of Hydrologic Cycle

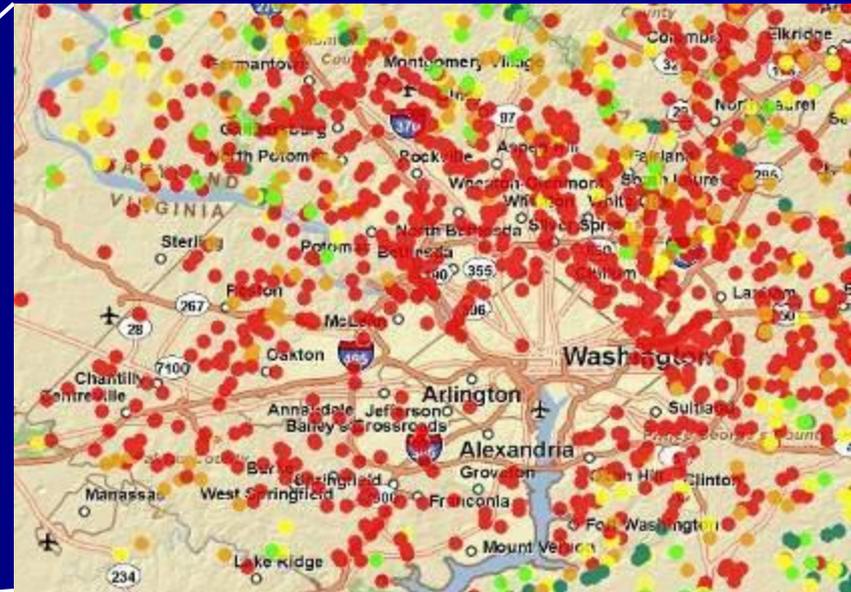
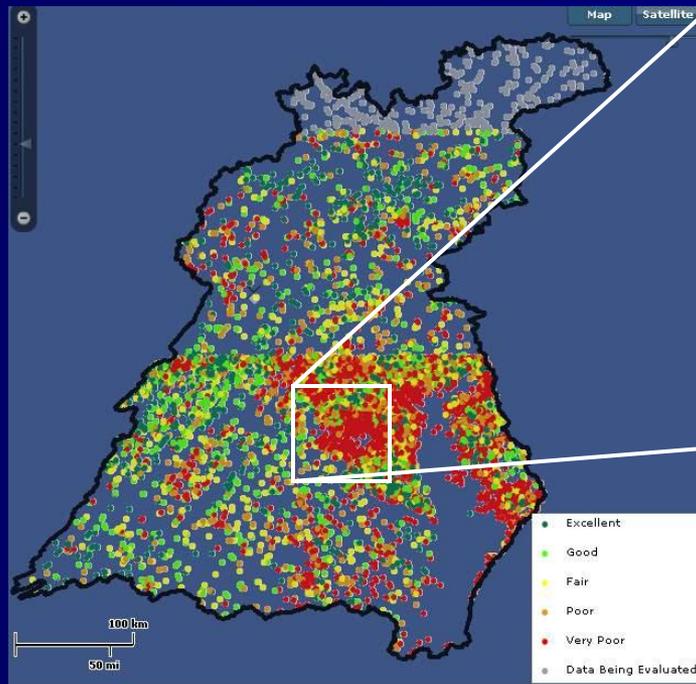


The Chesapeake Bay Watershed

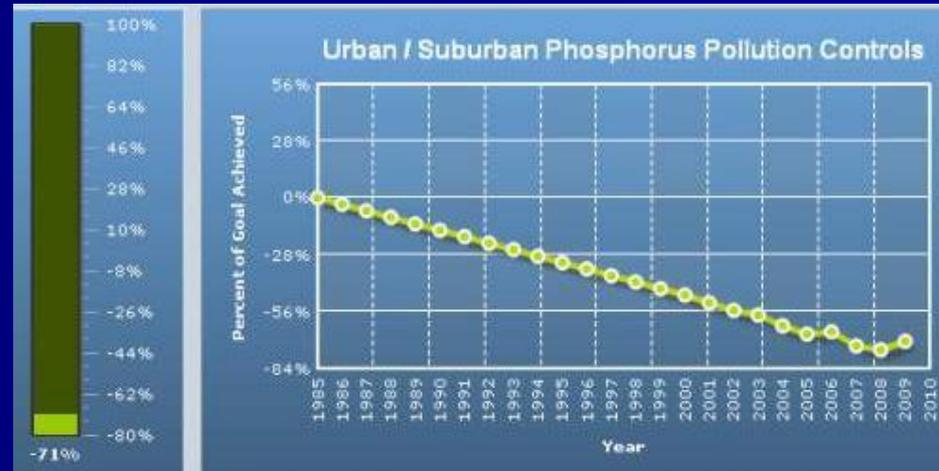
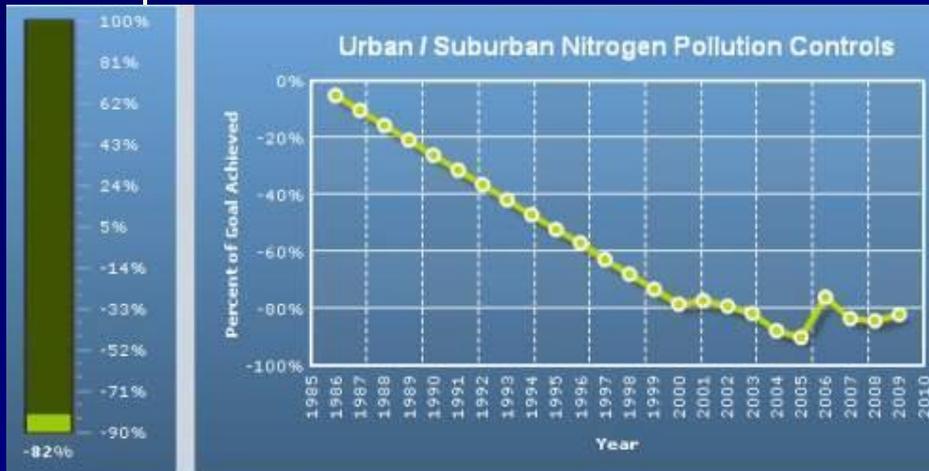
- Over 64,000 square miles of land drain into the Chesapeake Bay or its tributaries
- Major urban areas include:
 - Baltimore, MD
 - Harrisburg, PA
 - DC
 - Annapolis, MD
 - Richmond, VA
 - Hampton Roads, VA (Norfolk-Virginia Beach)



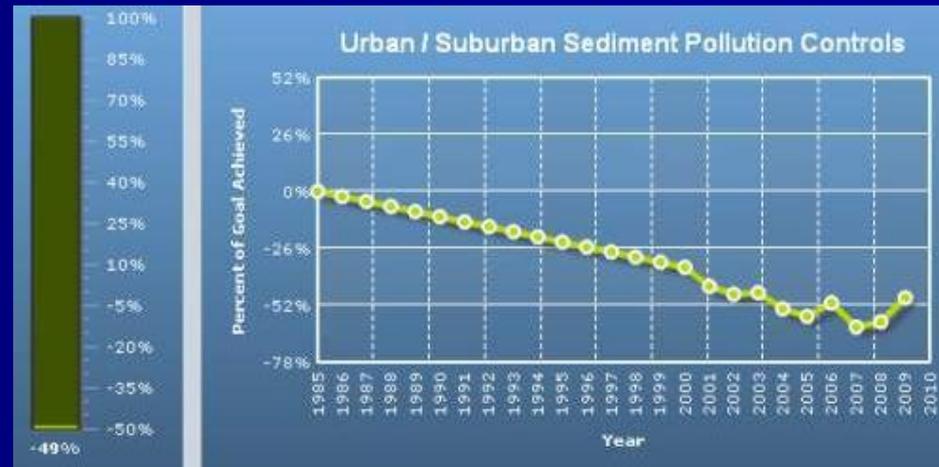
Chesapeake Bay Watershed: Stream Health



Chesapeake Bay Watershed: Stormwater Challenges



The goals for nitrogen, phosphorus, and sediment have not been achieved.



Chesapeake Bay Watershed Stormwater Challenges (Cont'd)

From the Office of Inspector General Report (2007)*:

- “New development is increasing nutrient and sediment loads at rates faster than loads are being reduced from developed lands.”
- “To meet the reductions in loads laid out by the jurisdictions, the adaptive management approach of the federally mandated municipal stormwater program needs to be accelerated.”



Photo Credit: Chesapeake Bay
Program www.chesapeakebay.net

**Development Growth Outpacing Progress in Watershed Efforts to Restore the Chesapeake Bay*
<http://www.epa.gov/oig/reports/2007/20070910-2007-P-00031.pdf>

The Relationship between this Stormwater Rulemaking and the Chesapeake Bay TMDL



- The Chesapeake Bay Total Maximum Daily Load (TMDL) sets limits on the amount of nitrogen, phosphorus, and sediment that can be discharged into the Bay and each of its tributaries by different types of pollution sources.
- Stormwater is one of these sources.

The Relationship between this Stormwater Rulemaking and the Chesapeake Bay TMDL (Cont'd)

- Regulatory considerations included in the stormwater rule will help decrease the amounts of nitrogen, phosphorus, sediment, and other pollutants that are found in stormwater.
- Current activities
 - Review of Watershed Implementation Plans (WIPs)
 - Listening Sessions

Preliminary Considerations to Address these Challenges



- Considerations are not mutually exclusive.
- EPA signed a settlement agreement with the Chesapeake Bay Foundation and others promising to take a number of actions to restore and preserve the Chesapeake Bay.

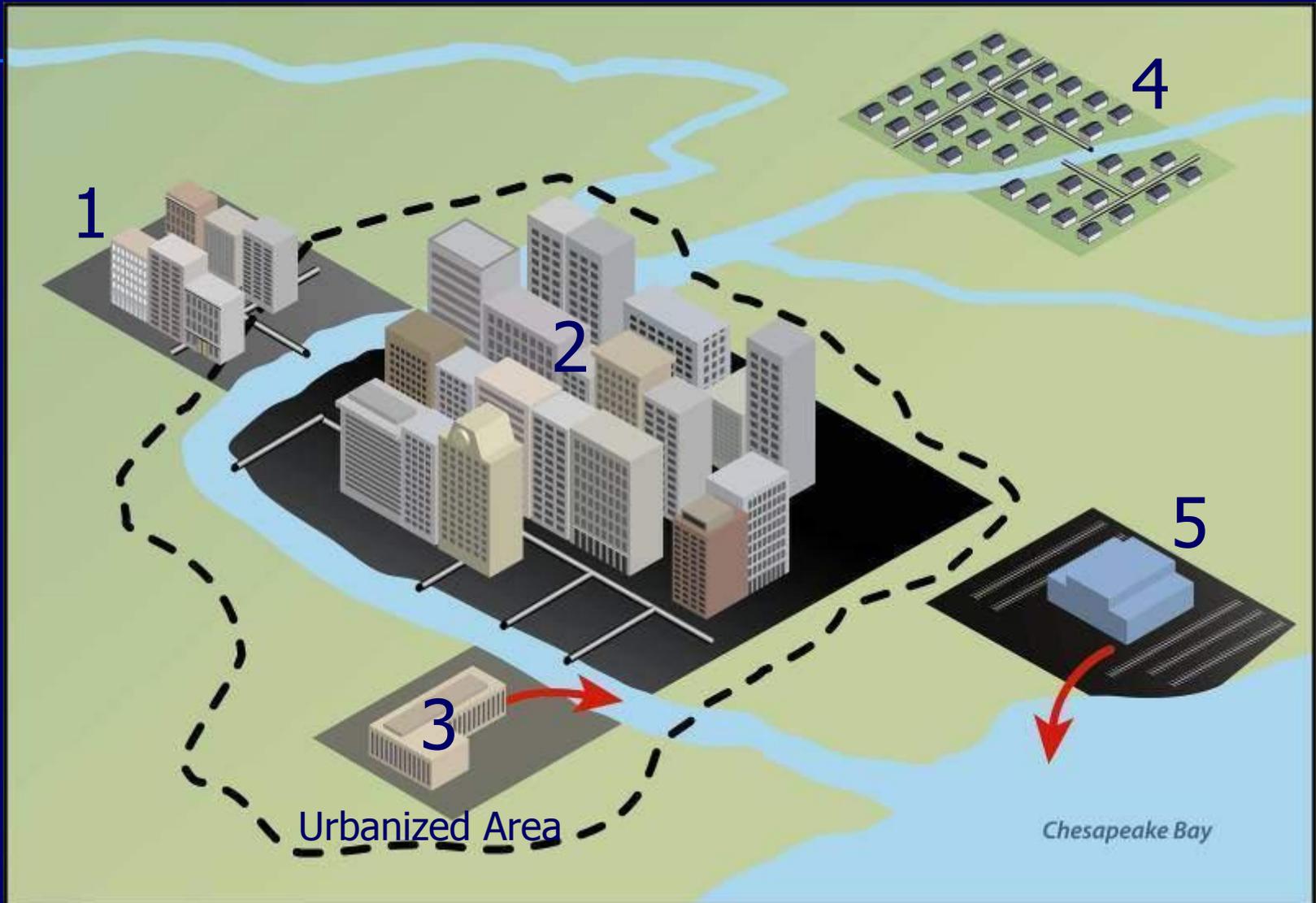
Designate Additional Discharges to be Regulated

- Expanding the number of regulated MS4 dischargers
- Designating additional discharges
- Regulating stormwater discharges that are currently unregulated



Photo Credit: Chesapeake Bay Program
www.chesapeakebay.net

Types of Discharges



Require Additional Chesapeake Bay-only MS4 Provisions

- Requirements related to turf management, pesticide usage, fertilizer usage, buffers, etc.



Photo Credit: Chesapeake Bay Program
www.chesapeakebay.net

Fertilizer Restrictions in the Chesapeake Bay Watershed

- Phosphorus Restriction: Annapolis, MD
 - limits the use and sale of residential lawn fertilizer to help restore the Bay.
 - applies to all land located in the city limits and all land owned by the city.
 - As of January 1, 2010, city businesses are not allowed to stock phosphorus-containing lawn fertilizers on their shelves.

Fertilizer Restrictions and Water Quality Improvements

- Phosphorus Restriction: Ann Arbor, MI (2007)
 - Limited application timeframes
 - Limits on application sites
 - No phosphorus fertilizers may be used except in a few cases
 - Requires commercial applicators to register with the City and report usage annually
 - Inspections and educational component

Fertilizer Restrictions and Water Quality Improvements (Cont'd)

~Results~

- Study showed that phosphorus levels in the Huron River decreased an average of 28% after the ordinance was adopted.

(Lehman et al. *Reduced River Phosphorus Following Implementation of a Lawn Fertilizer Ordinance*. Lake and Reservoir Management. 2009.)

Establish New and Redevelopment Standards

- Standards for discharges from newly developed and redeveloped sites.
- Examples of existing standards are based on:
 - Minimum storm volume to be retained on site (e.g. first 1", 95th percentile storm event).
 - Limiting total impermeable surface
 - Percent removal of pollutants (e.g. 80% TSS)

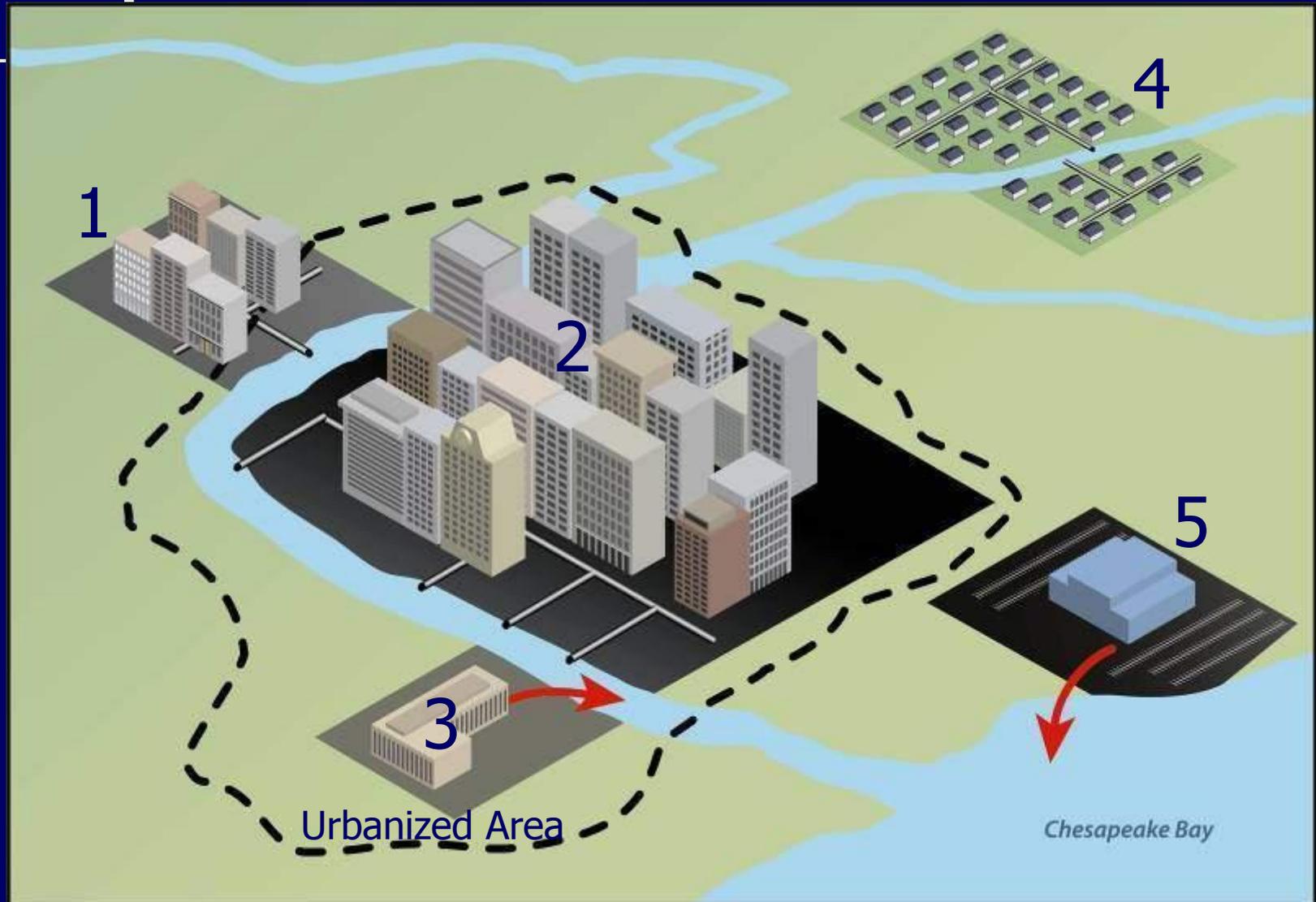


Photo Credit: Chesapeake Bay Program
www.chesapeakebay.net

Examples of 95th Percentile Storm Event in the Chesapeake Bay

City	95 th Percentile Event Rainfall Total (in)	City	95 th Percentile Event Rainfall Total (in)
Washington, DC	1.5	Williamsport, PA	1.4
Baltimore, MD	1.6	Lynchburg, VA	1.5
Salisbury, MD	1.7	Norfolk, VA	1.7
Binghamton, NY	1.2	Richmond, VA	1.7
Elmira, NY	1.2	Romney, WV	1.2
Harrisburg, PA	1.4		

Performance Standard Implementation



Green Infrastructure Approaches Mimic Natural Hydrologic Site Conditions

Infiltration ~ Evapotranspiration ~ Capture & Use



- Protecting areas with natural ecological functions
- Amended soils
- Impervious cover removal
- Bioretention
- Permeable pavements
- Green roofs
- Cisterns & rain barrels
- Trees & expanded tree boxes
- Reforestation & restoration
- Infill & redevelopment
- Parking & street designs
- Water conservation

Examples of Green Infrastructure

Vegetated Buffers



Pocket Wetlands



Rain Barrels



Green Walls



Green Roofs



Grass Swales



Rain Gardens



Parking Lot Infiltration Areas



Permeable and Porous Pavements



Planters



Bioinfiltration



Curb Extensions



Green Infrastructure Benefits

- Cleaner water
- Stable hydrology/baseflow maintenance
- Reduced flooding
- Climate change mitigation and adaptation
- Cleaner air
- Reduced urban temperatures
- Jobs creation
- Water supply
- Energy savings
- Cost savings
- Habitat protection
- Community benefits (recreation, public health)

Require Retrofitting of Stormwater Management Controls with Improved Stormwater Control Measures

- Consider stormwater requirements for already developed areas
- Make retrofitting structural stormwater controls mandatory for existing development where water quality impairments exist



Schedule



Summary

- Stormwater can have a significant impact on the Chesapeake Bay and its tributaries if not managed properly.
- The good news: There are a lot of options to improve stormwater management within the Chesapeake Bay watershed.
- Changes to the stormwater regulations will strengthen programs.



Photo Credit: NOAA's American Coastlines Collection. www.photolib.noaa.gov

Reminders:

- Submit written comments today in person or to www.regulations.gov, Docket ID No. EPA-HQ-OW-2009-0817 by December 7, 2010
- Stormwater Contact: Rachel Herbert
202-564-2649; herbert.rachel@epa.gov

www.epa.gov/npdes/stormwater/rulemaking

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