

# Virginia Stormwater Management Program (VSMP) Regulations



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# We want a Clean Environment

We all want and need a clean environment and we must do what is necessary to ensure the protection of our streams and rivers and connected ecosystems.



Problems associated with uncontrolled development are well documented and we need standards that protect against these impacts.

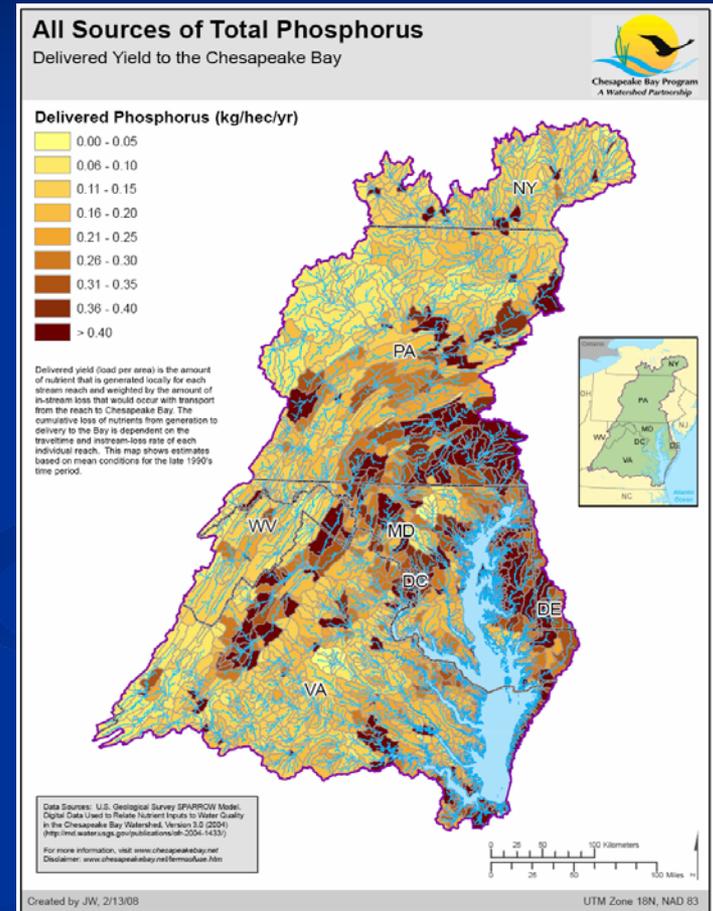
# State Stormwater Regulations

- MS-4 Regulations (Next 5 years, TMDL for Nutrients to BAY)
- VSMP Stormwater Management Program Permit (Set the Standards)
- Amend General Permit for Discharges of Stormwater from Construction Activities Amend Fees (Statewide)

A number of new state mandates for Stormwater Management affect local governments in various ways. These mandates have operated in some instances for many years under a system of “Technical Requirements” for “Water Quality” and “Water Quantity”..... **That system is about to change dramatically with new Technical Requirements and Establishment of State and Locally Administered Programs (Statewide).**

# Why the Change ?

- Environmental Advocacy Groups are dissatisfied with current regulatory progress.
- Changing federal positions on the effects of urban stormwater runoff.
- Chesapeake Bay Clean Up – Tributary Strategy Commitments.

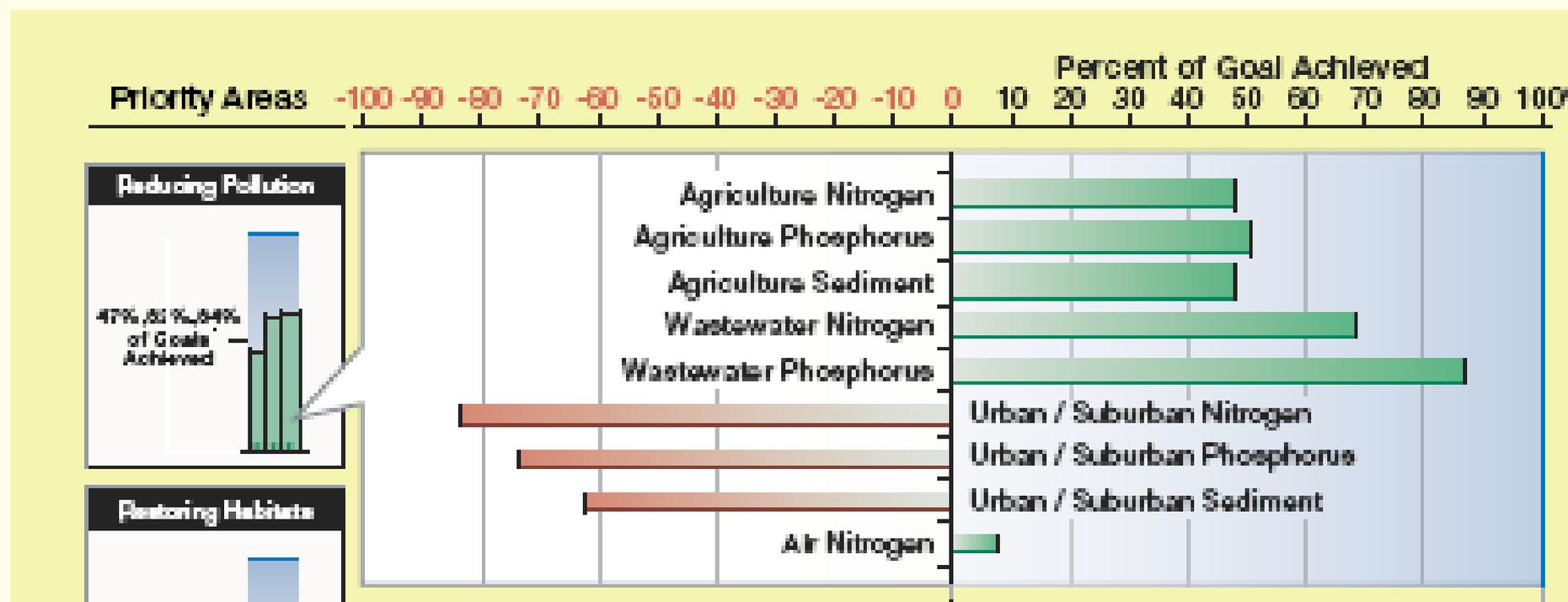




# Water Quality

## 2007 Ches. Bay Progress Assessment

### SUMMARY: 2007 BAY RESTORATION EFFORTS



Some jurisdictions may be underreporting existing stormwater management practices.

# New State Stormwater Regulations

The state Department of Conservation and Recreation is proposing a new standard of 0.28 lb/ac/yr. phosphorus down from 0.45 lb/ac/yr. (38 percent increase in the standard. DERIVED FROM CBWM LOAD for site specific application state wide.

Increasing treatment volume amounts 100 – 150 % including treatment for pervious grass and managed areas (doubles the size)

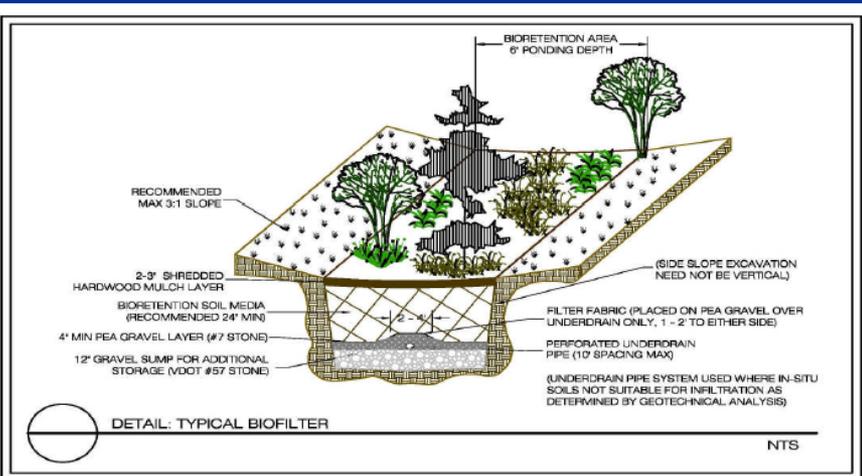
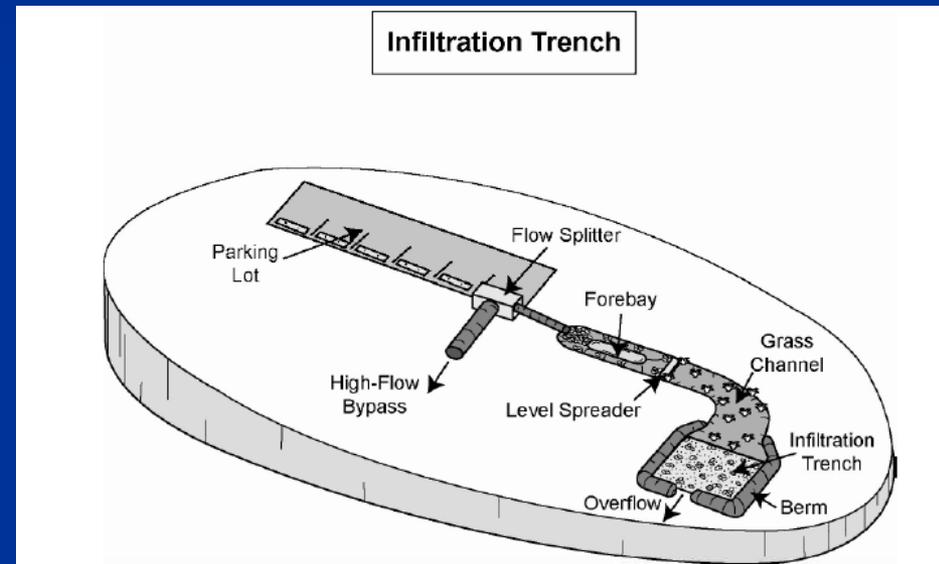


Figure 1. Bioretention Detail



Lowering efficiency values for BMPs  
Bioretention 1, reduced from 70+ to 55 %  
for Total Phosphorus  
Removals for redevelopment are doubled.

# Summary of New \$ Cost Concerns \$ over the proposed Technical Criteria

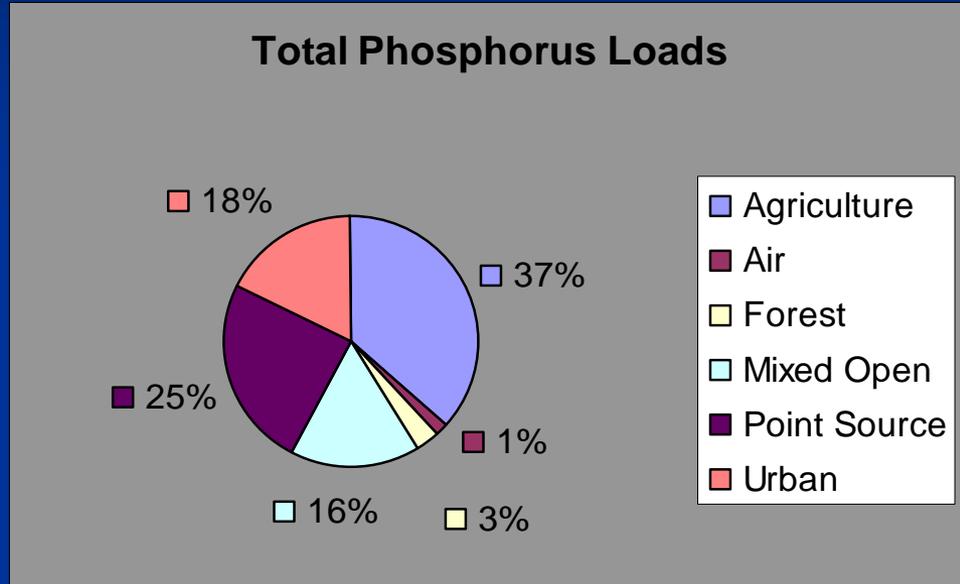
- In 2005 the Secretary of Natural Resources as part of the Chesapeake Bay Nutrient and Sediment Reduction Strategy report to citizens established 7.5 billion cost estimate for implementing “Urban BMP’s” in the Virginia’s Bay Watershed. (2005 before this proposed regulation)- These rules will significantly affect the cost of new development. \$6320 / urban acre. Hanover County \$221 million. (At 0.68 lb/ac/yr)
- Total urban represents approx. 17 % of nutrient and 8 % of sediment load and 75 percent of the estimated cost of clean up are assigned to urban prior to this change.
- Significant 1 time capital cost increases for projects as a result of these proposed new standards (3 – 20 fold cost increases possible above the 7.5 billion dollar estimate).
  - Design example for residential setting could go from \$1200 per lot to \$23000 per residential lot. (Design Example)
  - School project from Frederick County, current standard on 15 acre site (7 BMPs at \$175,000) vs. new proposal (17 BMPs at \$530,000)
- Substantial increases in engineering design cost for site design.
- Increases in construction inspection and quality assurance cost.
- Increases in long term maintenance and inspection cost. (Owner and Locality)

# Summary of Local Government Concerns

- Significant new mandated cost. 7.5 Billion before the changed standard. Maybe 3 or more times that with 0.28 lb/ac/yr. standard
- Will affect local land-use plans and may encourage sprawl. (driven by lower densities)
- Can our communities sustain the “**Gold Standard**” that DCR has proposed. \$221 million for Hanover before the new standards.
- Will there be a beneficial impact to the resource.

# Water Quality

## 2004 Tributary Strategies



# Let's Talk Land Use



Hanover County is a little over 300,000 acres  
175,000 – 196,000 acres Forest, 58 – 65 %  
19,000 – 32,000 acres Pasture, 6 – 11 %  
50,000 – 67,000 acres Cropland, 17 – 22 %  
16,000 – 23,000 acres Urban Land, 5 – 8 %  
County Data Sets  
CBWM – 35,000 12 %

In 2003, new development increased impervious surfaces in Hanover by 97 acres.

At that time, Hanover had about 5032 acres of impervious development.

This is about a 2 percent growth in impervious surface.

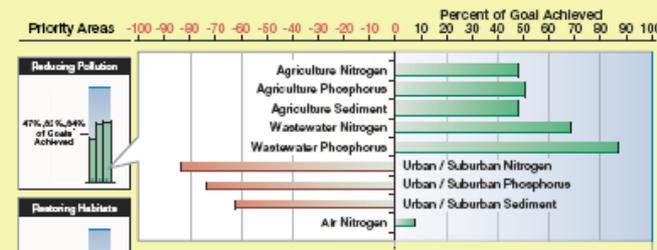
0.03 percent change in total land area.



# Not taking credit for accomplishments in CBWM

- Land use data for Hanover is variable and overstates the “Urban” portion.
- Progress on pollution control is understated. 2003 CBWM reported 72 acres of BMPs,
- Hanover’s records show about 3500 acres under various BMP’s. 15 %
- By 2007 this was 5900 acres or 25 %
- In “Tidewater Virginia” localities such as Hanover are required to provide significant 100 ft buffers around all perennial streams. The CBWM does not account for reductions associated with these buffers (or 2007 Buffer Policy Changes) Our analysis shows potentially large reductions in Urban pollution if the buffers are managed correctly.

SUMMARY: 2007 BAY RESTORATION EFFORTS



# Chesapeake Bay Watershed Model

February 20, 2008 Scientific and Technical  
Advisory Committee Review – “We believe that  
it is inappropriate to use the existing CBWM  
county and subwatershed data sets **for local-scale  
modeling applications**”

**Bottom-line: Data just  
not good enough for  
that use.**

## **Chesapeake Bay Watershed Model Phase V Review**

**February 20, 2008**

Lawrence Band<sup>1</sup>, Theo Dillaha<sup>2</sup>, Christopher Duffy<sup>3</sup>,  
Kenneth Reckhow<sup>4</sup>, Claire Welty<sup>5</sup>

<sup>1</sup>University of North Carolina Chapel Hill, <sup>2</sup>Virginia Tech, <sup>3</sup>Pennsylvania State  
University, <sup>4</sup>Duke University, <sup>5</sup>University of Maryland Baltimore County

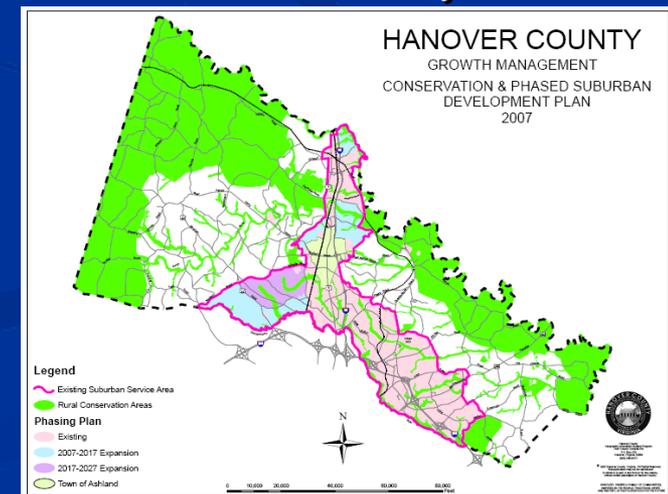


**STAC Publication 08-003**

# Are we missing the forest for the trees ?

- We need to do more to treat urban stormwater runoff, but we need to make sure this rule change will result in a cost effective and meaningful change in the resource. (Billions of dollars at stake)
- If Total Urban is 17-20 percent of the pollution problem. Is it logical to spend 75 percent of the clean-up funds or 3 or more times that amount. The cost are inconceivable. (Billions) / 100s of Millions / locality

Are we actually promoting sprawl with a disproportionate burden on compact development?



**We need to enforce existing rules adequately (DCR reports only 70 % compliance w/ E&S) this is up from 20-30 % in the last several years.**



Hanover County Planning Commission has denied after the fact CBAY buffer exception requests resulting in the required removal of valuable structures from protected areas.

**t in CBWM)**

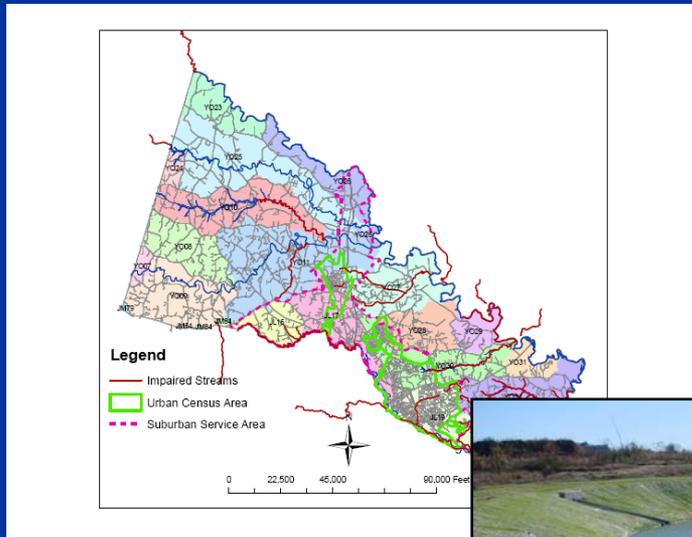
Hanover County has had over 18 suits resulting in more that \$70,000 in fines over the last several years for failure to comply with E&S laws.

Settlements have included training requirements for contractors.



# We need to give existing rules MS-4, etc. a chance to be implemented and implement the tributary strategies (deal with the bigger portion of the problem “total urban”)

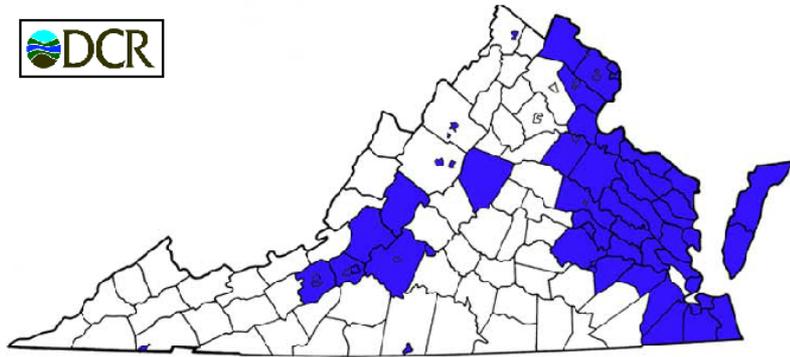
We are currently updating programs and looking for new ways to improve our positive impact on our environment.



Identifying specific water quality impairments and implementing new strategies to fix the problems. Required iterative approach.

We need to implement the existing rules across the state as required. (Track the actual progress)

**Localities required to establish local stormwater management program**



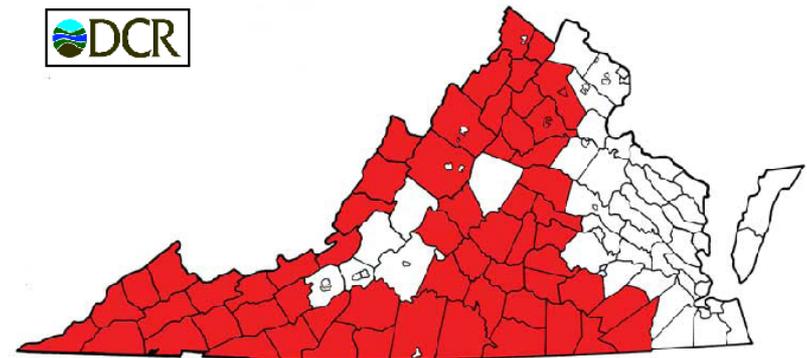
Localities have to adopt.



Localities can adopt  
or DCR will.



**Localities which may adopt local stormwater programs and required to notify DCR of intention**



**In absence of local stormwater programs, DCR will administer stormwater requirements for locality.**

# Summary

Before we do something that could be very damaging to Virginia's economy, with uncertain outcomes, consider an alternative recommended by many local government, engineering, interest and industry leaders.



- Focus initially on establishment and startup of local programs statewide by adopting amendments to Part 1 Definitions/Purpose/ Applicability, Part III A-D Local Programs / Administration , and Part XIII Fees, and
- Use Existing VSMP Technical Criteria, Part II
- Allow further time for the development of the Part II Technical Criteria - adopt only after extensive economic and effectiveness analysis are complete. (Gold Standard) / (More is Better?) Really??????