

Localities and Stormwater Management Programs

VACO Meeting 1/5/2014
Mike Flagg (Hanover County)



Stormwater...

Related Regulatory Mandates

- **Erosion & Sediment Control – Statewide**
- **Chesapeake Bay Preservation – Tidewater Localities**
- **Virginia Stormwater Management Program (VSMP)**
- **Construction General Permit – Statewide VSMP Implementation**
- **Municipal Separate Storm Sewer System (MS4) General Permit - Urbanized Areas**

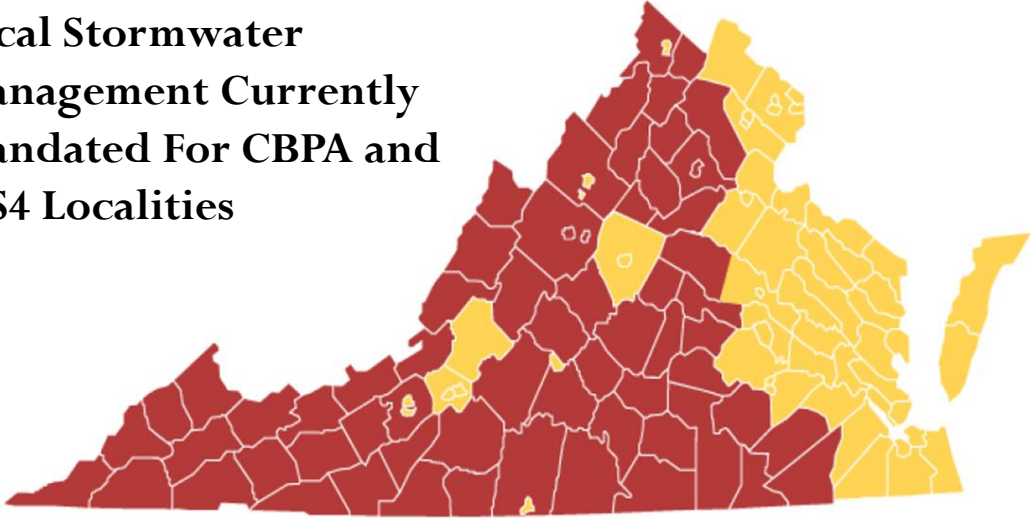



Stormwater Management


What's Changing...



Local Stormwater Management Currently Mandated For CBPA and MS4 Localities



 Chesapeake Bay Preservation Act localities and Municipal Separate Storm Sewer System (MS4) permitted localities

 Likely no stormwater program currently

Required Statewide Local Stormwater Management

- New/Enhanced Local Program
- New Quality Criteria
One standard statewide:
0.41 lbs/acre/yr
Runoff Reduction Method
- New Quantity Criteria
Energy Balance Method



Stormwater Management (Local Programs)

What's Changing...

- Shift from State to Local Program Implementation of Construction Site Permitting
 - Presented as “One Stop Shopping”
 - Local Implementation → Better Compliance → Improved Water Quality
 - Single Family Permit by rule
 - Grandfathering
- New Regulations - More Stringent Stormwater Criteria on New Development & Redevelopment
 - Runoff Reduction Method & Energy Balance
 - Equivalent local alternative for stream channel erosion
 - Alternative Inspection Programs
- Private Sector Trading)



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Program Application Required Elements

- Identify the Authority (DPW Director)
- Stormwater Management Ordinance
- Funding and Staffing Plan
- Process for Review & Approval of ESC and SWM Plans
- Policy/Procedure for Obtaining & Releasing Bonds
- Inspection Program & Certified Inspectors
- Procedures for Reporting & Recordkeeping
- BMP Design Criteria, Maintenance Requirements & Tracking
- Identify Applicable TMDLs
- Enforcement Program



Summary of Challenges

- New Complex Technical Criteria and Program Start Up
Many localities never implemented programs previously
- Heavy Degree of Overlap and Resulting Complexity
e.g. Cbay, MS4, E&S, Construction Permit, TMDLs
- Different Permitting Thresholds for Construction
VSMP: 1 acre, E&S 10,000 sq.ft., Cbay 2,500 sq.ft., Common Plan of Development
- Definitional Issues – Multiple Programs, inconsistent definitions
- Permitting Transition: DEQ to Localities for VSMP
- Training and Certification for E&S and SWM
- Inspections: E&S (2 weeks), SWM (quarterly), TMDL Conditions
- TMDL Special Conditions – Stricter Standards
- State Program Reviews and Compliance Audits
- Different Enforcement / Appeals / Penalties for various programs
- Reporting and Data Management (e-Permitting)
- BMP approval processes (VTAP)



Potential Solutions

- Relationships – Build a Strong “Co-Regulator” Relationship (DEQ-Localities)
 - a) Localities need collaborative environment for building well-run programs
 - b) Localities need State reviews/ audits to be supportive (avoid inconsistency and conflict)
 - c) Localities need practical, efficient, consistent answers to program questions
- Phasing and Program Evolution (Big Picture First, Risk Based Approach)
 - a) Perhaps DEQ can issue staged expectations but localities recognize everything is important
 - b) Establish basic elements – Administration, Ordinances, Plan Reviews, Inspections
 - c) Evolution of enhanced / special conditions TMDLs
 - d) Strong State DEQ presence and intervention with EPA
 - e) Clean straight forward audits based on established expectations



Priorities for Collaboration w/ DEQ

- Resolve regulation of “Common Plan of Development”
e.g. VSMP Permitting of overall development, E&S permit on single family sites
- Program Development and Implementation
- Clean up hearings and appeals
- Streamline Certification and Training
- BMP Credit and approval processes (VTAP)



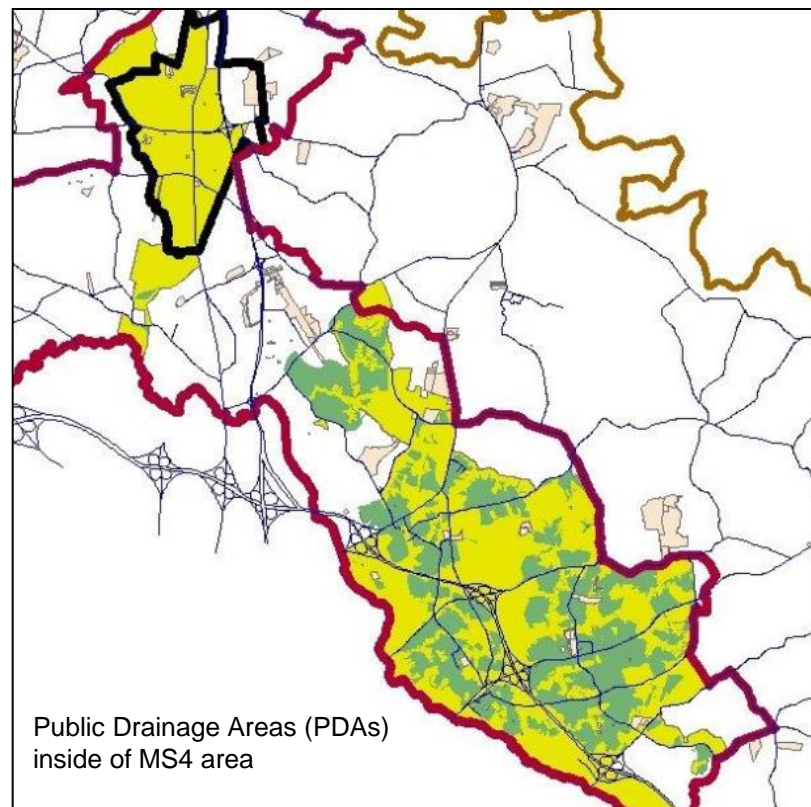
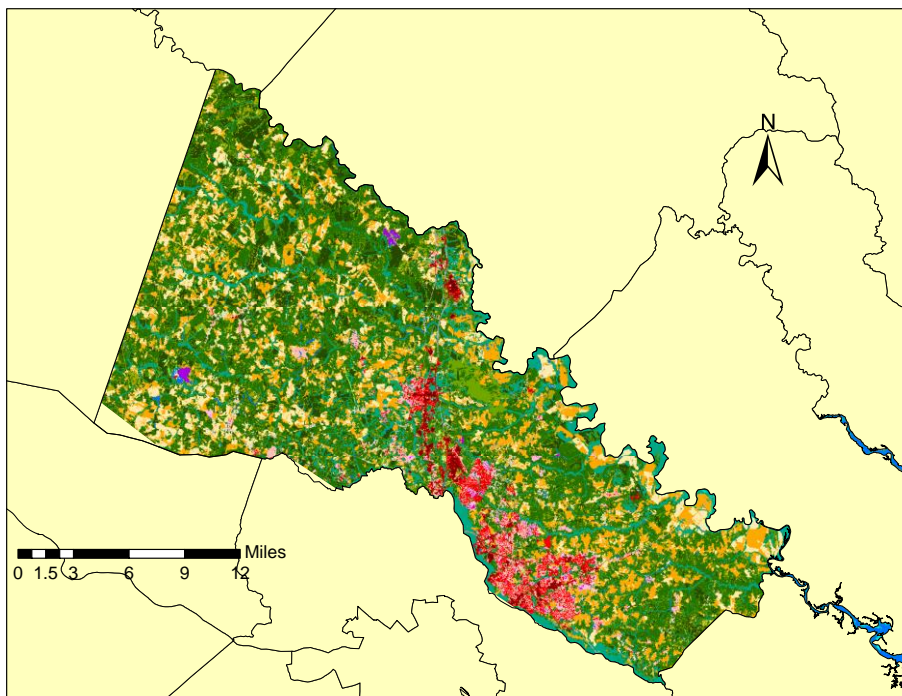
Municipal Separate Storm Sewer System (MS4) General Permit – Urbanized Areas

- Understanding Modeling for your locality
including relationships to other sources
- Delineate regulated areas to minimize permit exposure
- MOU's with other agencies, Schools, Towns, SWCD's, VDOT?
- Inventory treatment opportunities
- Understand BMP Credit and treatment approval (DEQ: TMDL Accounting Guidance)





TMDLs – MS4 Permit Capital Burden



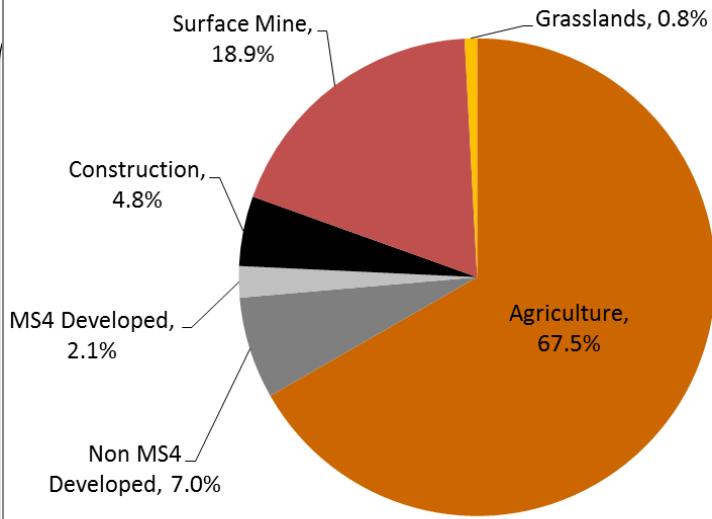
PDA = 8,800 acres
MS4 = Approx. 27,000 acres
County Total = Approx. 303,000 acres
Suburban Service Area = Approx. 67,000 acres



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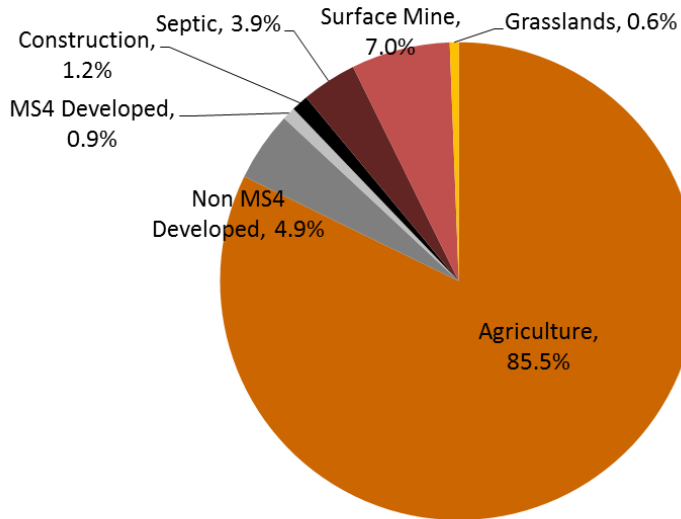
Modeling is used to predict response in the monitored parameter

Hanover Phosphorus Reduction Goal (38,206 lbs.) By Sector



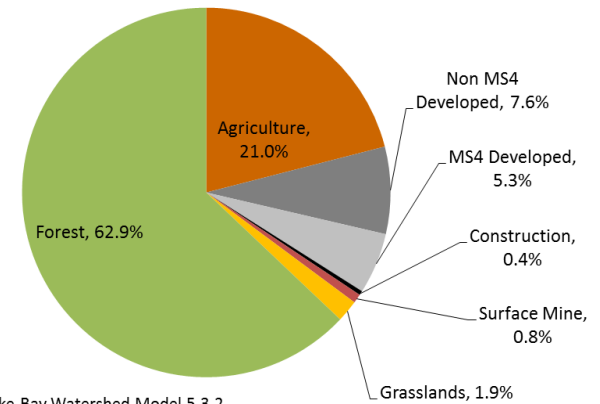
Source: Chesapeake Bay Watershed Model 5.3.2

Hanover Nitrogen Reduction Goal (533,567 lbs.) By Sector



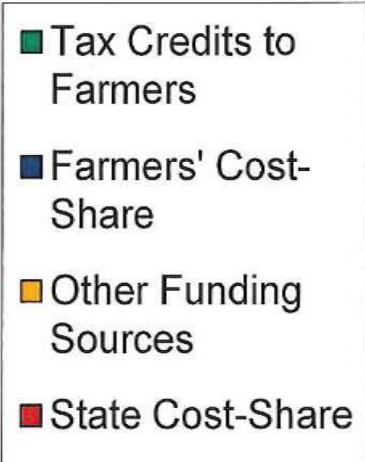
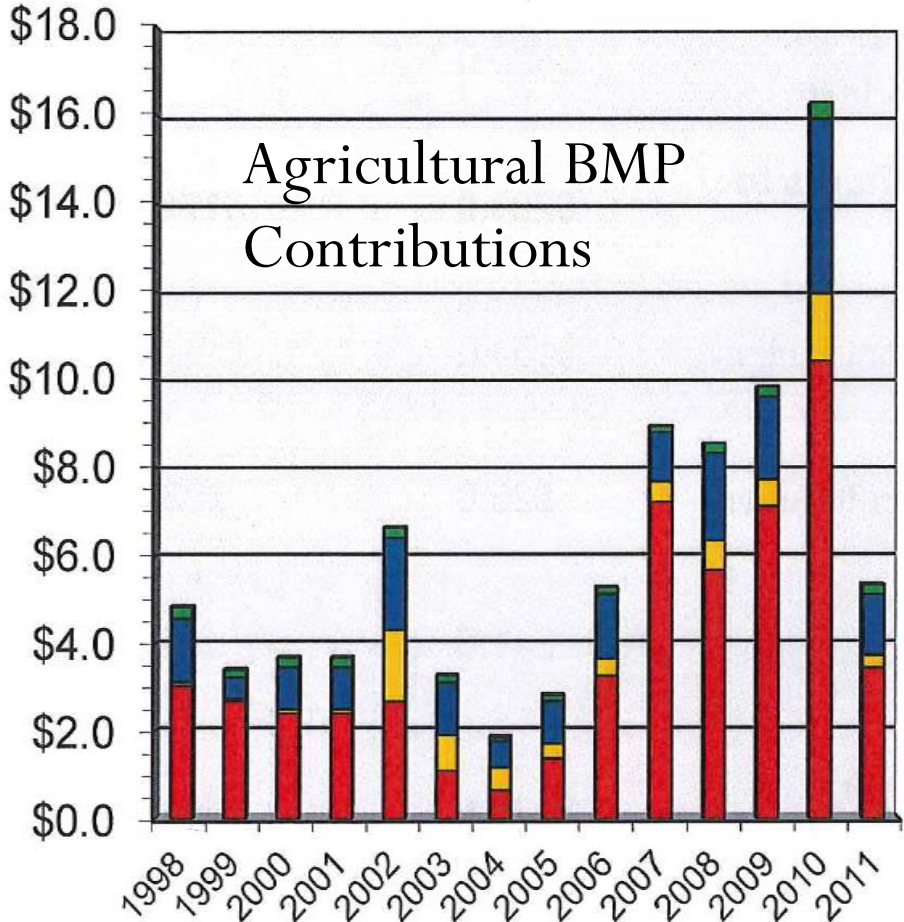
Source: Chesapeake Bay Watershed Model 5.3.2

Hanover Land Use



Source: Chesapeake Bay Watershed Model 5.3.2





DCR Estimates to Meet Bay TMDL Goal (\$M)

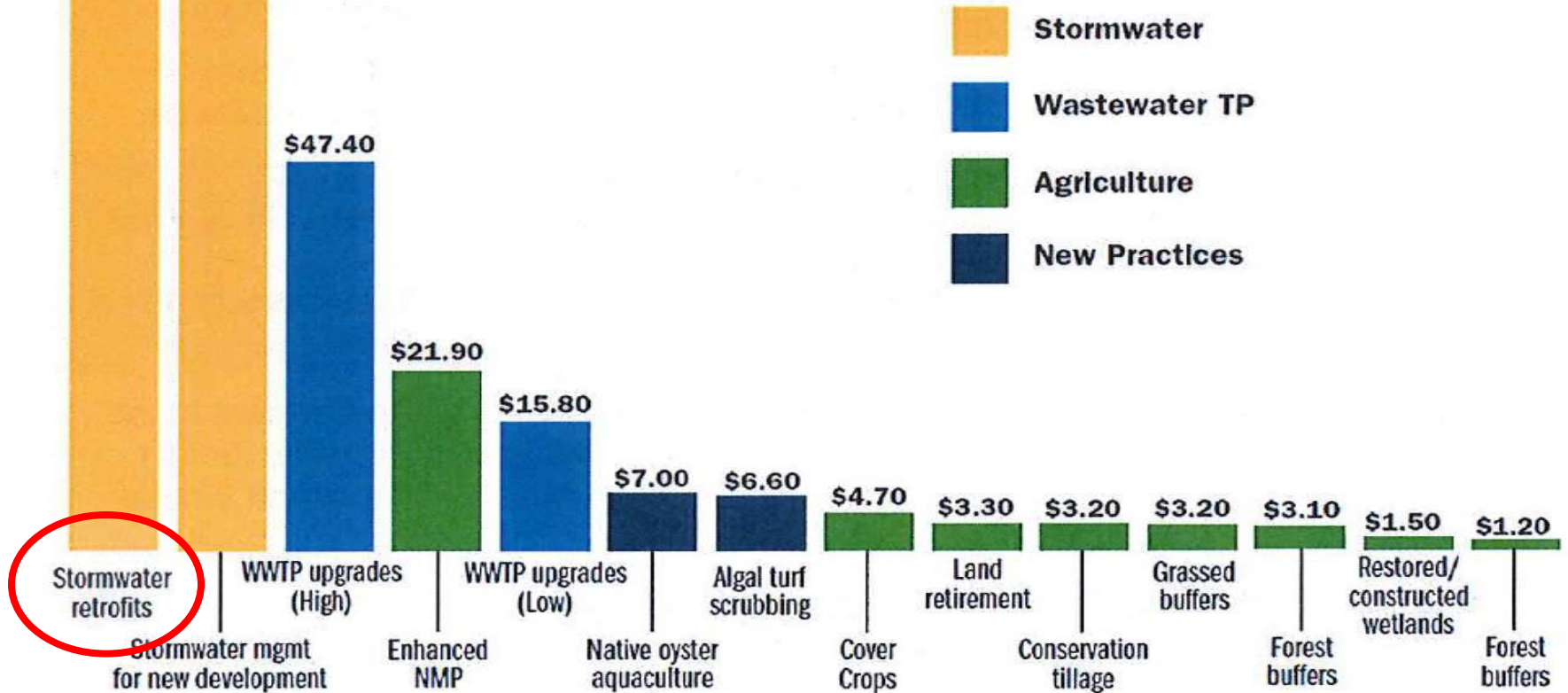
| Fiscal Year | State Share | Farmer's Share * | Total | |
|-------------|-------------|------------------|--------|---------|
| 2012 | \$36.9** | 29.2 | \$14.4 | \$52.3 |
| 2013 | \$39.8 | 22.8 | \$15.4 | \$55.3 |
| 2014 | \$42.4 | | \$16.5 | \$58.9 |
| 2015 | \$47.5 | | \$18.4 | \$65.9 |
| 2016 | \$58.3 | | \$22.6 | \$80.9 |
| 2017 | \$60.2 | | \$23.4 | \$83.6 |
| 2018*** | \$65.8 | | \$25.5 | \$91.3 |
| Total | \$350.9 | \$136.5 | | \$487.4 |

* Farmer's share calculated on historical average of a 28 percent cost-share; actual match varies by type of BMP.

** Amount included in Chapter 890 (2011 Appropriations Act).

*** Will be revised in accordance with Phase III WIP.

Relative Per-Pound Costs of Reducing Nitrogen Pollution in the Chesapeake Bay Region



Source: World Resources Institute

January 2010





Stormwater Retrofit Project Example

Washington Henry Elementary

LEVEL SPREADER - VEG FILTER STRIP
TREATED AREA= 5.21 AC
LENGTH= 52 FT
BUFFER WIDTH= 35 FT
PHOSPHORUS REMOVED= 1.95 LBS



WET POND
TREATED AREA= 3.84 AC
VOLUME= 8,259 CF
DEPTH=6 FT
PHOSPHORUS REMOVED= 2.59 LBS



Existing Channel Erosion Problems



Implementing practices: balancing cost with community good.



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Conversion of existing facilities for higher removal credit.



Implementing practices: balancing cost with community good.



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Contact Information & Questions

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