

Briefing on Total Maximum Daily Loads

Environmental Quality Advisory Council

Department of Public Works and Environmental Services
Working for You!



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Agenda

- Regulatory Background
- Virginia's Continuing Planning Process
- MS4 Permit Overview
- TMDLs in the 2015 MS4 Permit
- Potential Stormwater Management Projects



Regulatory Background – Federal

- 1972 Clean Water Act (CWA) requires states to:
 - Establish water quality standards (WQS)
 - Monitor surface waters
 - Assess surface waters every two years
 - List waters that do not meet WQS as impaired
 - Establish priorities for scheduling development of Total Maximum Daily Loads (TMDLs) for impaired waters
 - Develop pollutant-specific TMDLs for impaired waters
- 1992 EPA issued regulations currently governing the TMDL program
 - Implementation through existing pollution reduction regulations and voluntary strategies

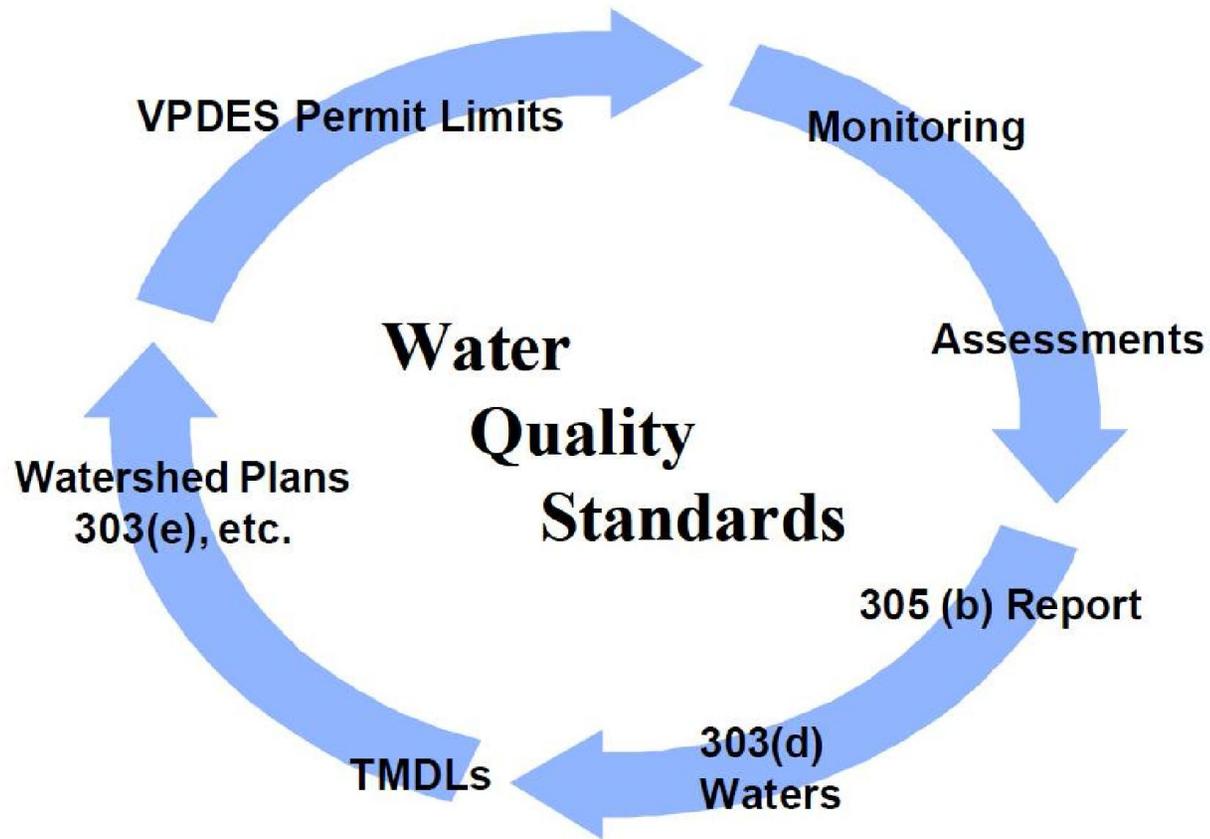


Regulatory Background – Virginia

- 1997 Virginia Water Quality Monitoring, Information and Restoration Act (WQMIRA) also requires:
 - List waters that do not meet WQS as impaired
 - Develop pollutant-specific TMDLs for impaired waters
 - Develop Implementation Plans for the TMDLs
- 1999 Consent Decree
 - American Canoe Association, American Littoral Society for failure to comply with TMDL provisions of CWA in Virginia
 - All waters listed in 1998 must have TMDLs by 2010
 - Waters listed in subsequent biennial assessments must have TMDLs within 12 years
 - If Virginia fails to establish TMDLs, EPA will step in
- Department of Environmental Quality (DEQ) leads TMDL development



Virginia's Continuing Planning Process



Water Quality Standards

- Set by states and approved by EPA
- Must have at least three components:
 1. Designated uses – in Virginia there are six:
 - Aquatic life
 - Wildlife
 - Recreation
 - Drinking water supply
 - Fish consumption
 - Shellfish
 1. Water quality criteria to protect designated uses
 - Can be numeric or narrative
 2. Anti-degradation policy – in Virginia there are three tiers:
 - Tier I: Maintain and protect existing uses
 - Tier II: Protect waters that are better than WQS
 - Tier III: No new, additional or increased pollution to exceptional waters
- Must be updated every 3 years

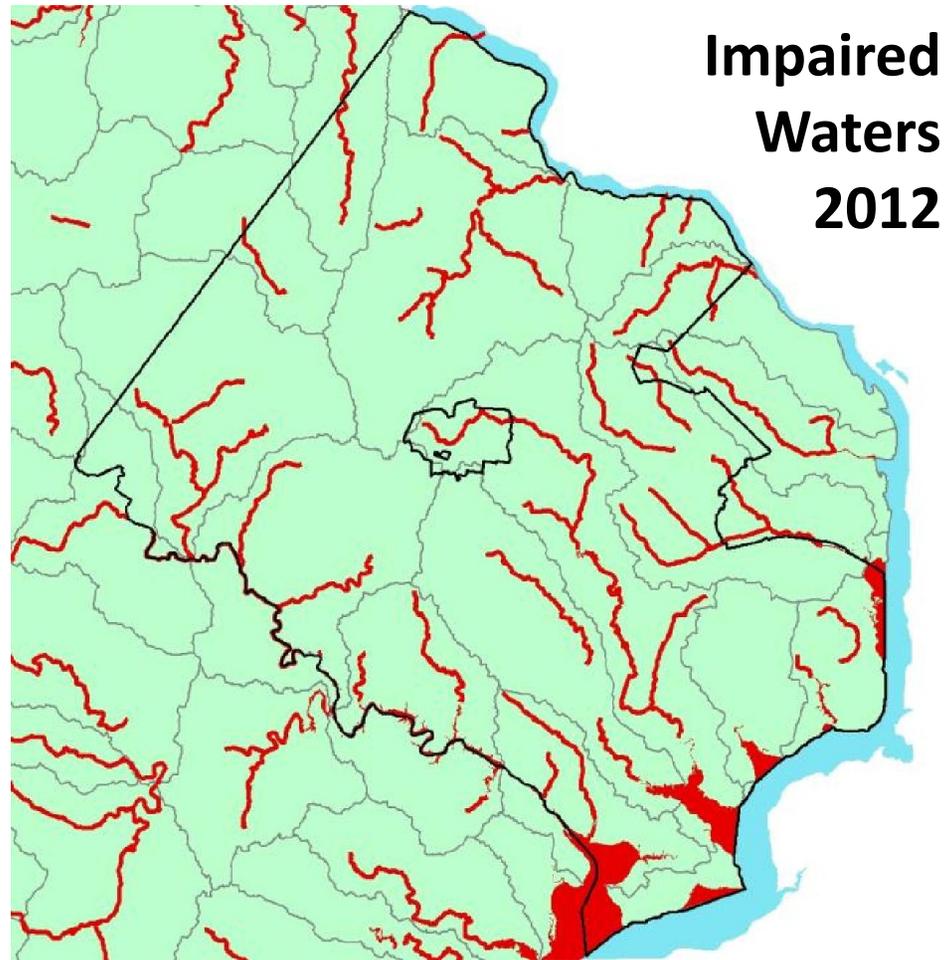


Monitoring and Assessment

- DEQ Water Quality Monitoring Programs
 - Annual Water Quality Monitoring Plan
 - Biological
 - Probabilistic
 - Surface Water
 - Fish Tissue
- DEQ Conducts Biennial Water Quality Assessments
 - Guidance Manual developed for each assessment
 - Five year assessment window
 - January 1, 2007 through December 31, 2012 for 2014 Assessment
- Identify impaired waters
 - 305(b)/303(d) Water Quality Assessment Integrated Report



Biennial Water Quality Assessments

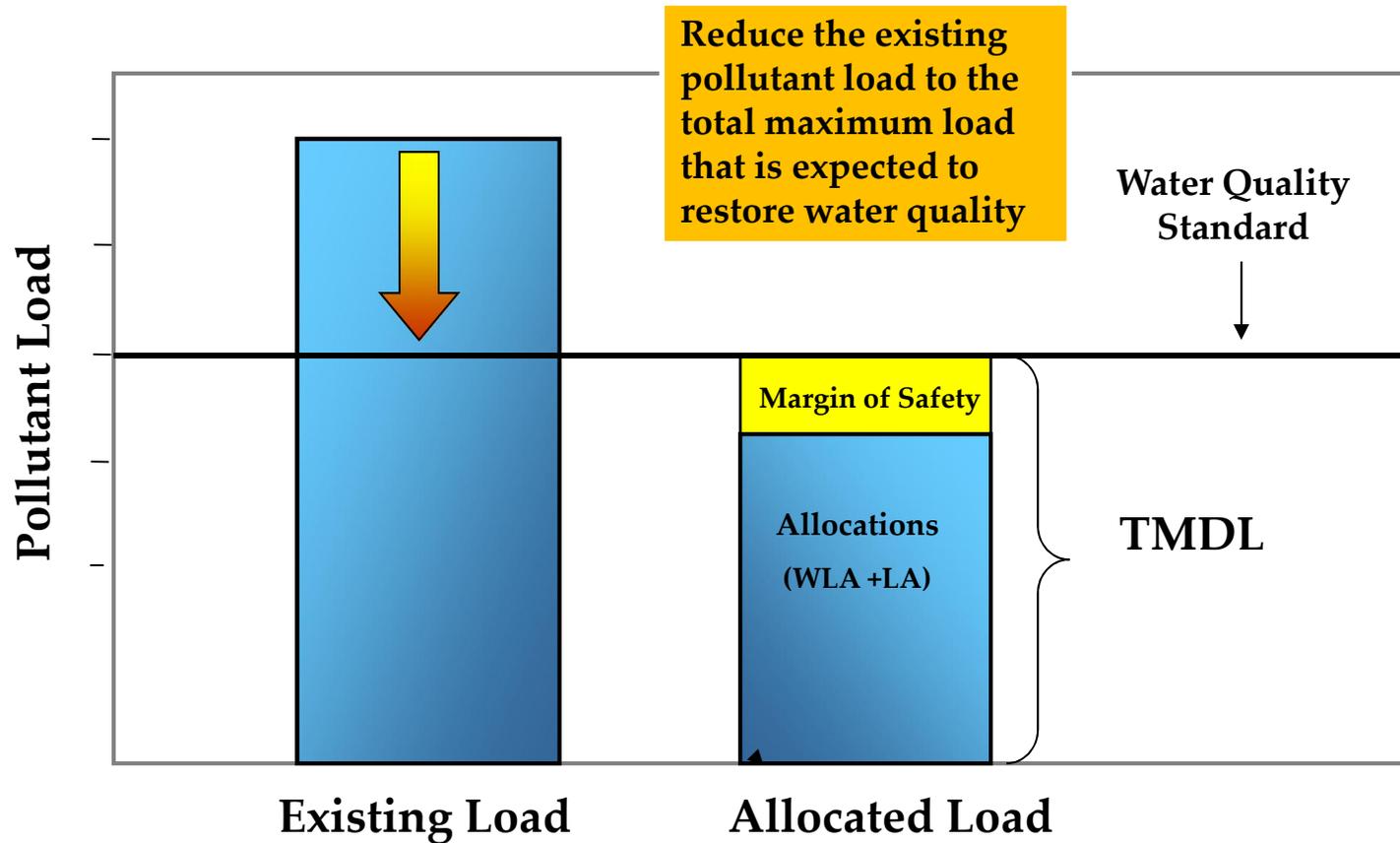


TMDL Development

- A TMDL is a Pollution Budget
 - Amount of a pollutant that a surface water can assimilate and still meet WQS
 - Must be developed for each impaired water
 - Pollutant-specific
- $TMDL = \text{Sum of WLAs} + \text{Sum of LAs} + \text{MOS}$
 - WLA = Wasteload Allocation (regulatory implementation through permits)
 - LA = Load Allocation (voluntary implementation)
 - MOS = Margin of Safety (accounts for uncertainty)



TMDL Development (cont'd)

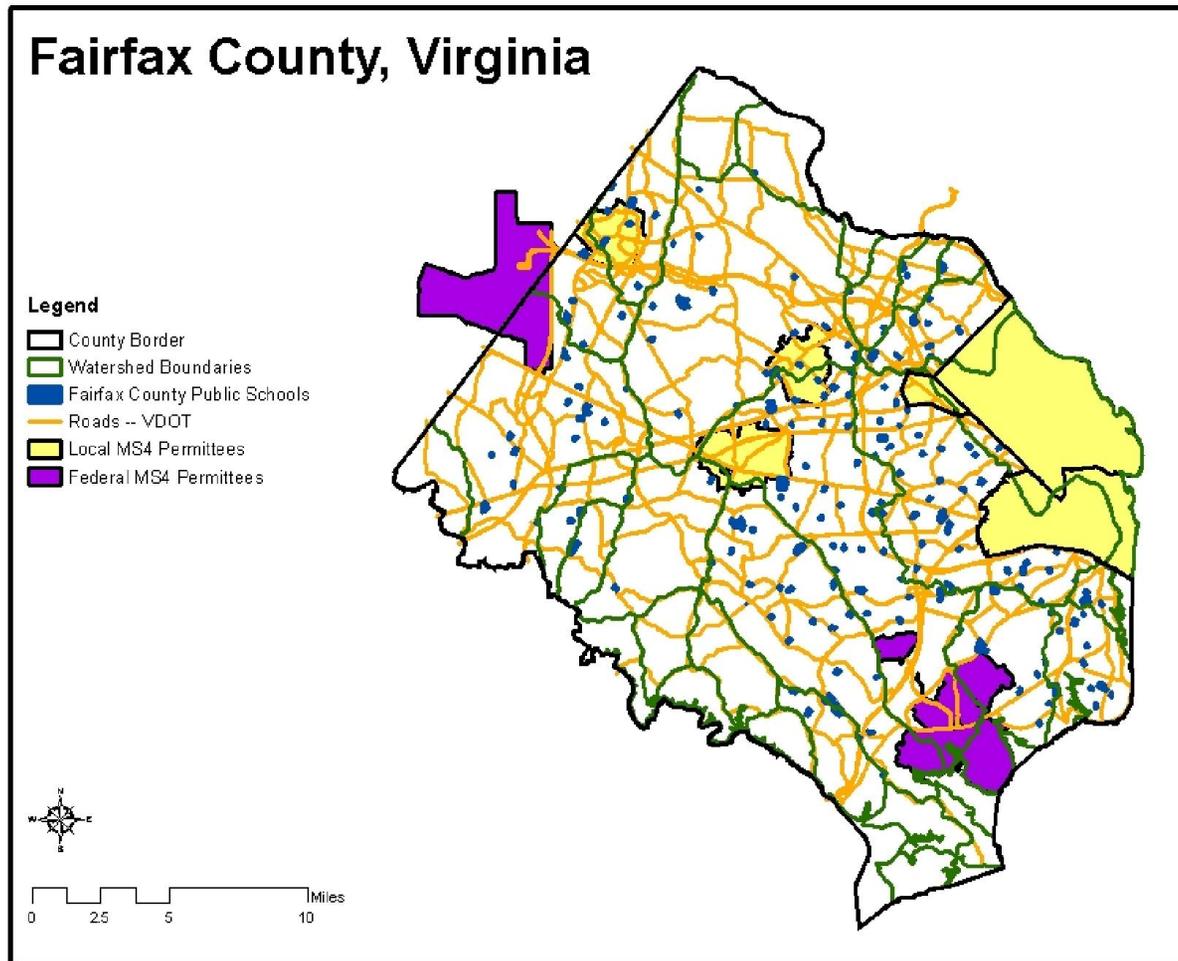


MS4 Permit Overview

- Permit Issued to Fairfax County
 - Compliance coordinated by Stormwater Management
- Authorizes Specific Discharges from the MS4 to Waters of the State/U.S.
 - Outfall-based
- Requires Development and Implementation of an MS4 Program to:
 - Reduce the contamination of stormwater runoff
 - Prohibit illicit discharges



MS4 Permit Overview – Interconnected MS4s



MS4 Permit Structure

- Discharges Authorized Under Permit
 - Administrative requirements
- Stormwater Management
 - Planning
 - MS4 Program implementation
- Monitoring Requirements
- TMDL Action Plan & Implementation
 - Chesapeake Bay TMDL
 - Other TMDLs
- Annual Reporting
- Definitions

Permit No.: VA0088587
 Effective Date:
 Expiration Date: [5 years after effective date]

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA STORMWATER MANAGEMENT PROGRAM AND THE VIRGINIA STORMWATER MANAGEMENT ACT

Pursuant to the Clean Water Act as amended and the Virginia Stormwater Management Act and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this state permit.

Permittee: Fairfax County
 Facility Name: Fairfax County Municipal Separate Storm Sewer System
 County Location: Fairfax County is 413.15 square miles in area and is bordered by the Potomac River to the East, the city of Alexandria and the county of Arlington to the North, the county of Loudoun to the West, and the county of Prince William to the South.

The owner is authorized to discharge from municipal-owned storm sewer outfalls to the surface waters in the following watersheds:

Watersheds:	Stormwater from Fairfax County discharges into twenty-two 6 th order hydrologic units: Horsepen Run (PL18), Sugarland Run (PL21), Difficult Run (PL22), Potomac River-Nichols Run-Scott Run (PL23), Potomac River-Pimmit Run (PL24), Potomac River-Fourmile Run (PL25), Cameron Run (PL26), Dogue Creek (PL27), Potomac River-Little Hunting Creek (PL28), Pohick Creek (PL29), Accotink Creek (PL30), (Upper Bull Run (PL42), Middle Bull Run (PL44), Cub Run (PL45), Lower Bull Run (PL46), Occoquan River/Occoquan Reservoir (PL47), Occoquan River-Belmont Bay (PL48), Potomac River-Occoquan Bay (PL50)
Receiving Streams:	There are 15 major streams: Accotink Creek, Bull Run, Cameron Run (Hunting Creek), Cub Run, Difficult Run, Dogue Creek, Four Mile Run, Horsepen Run, Little Hunting Creek, Little Rocky Run, Occoquan River, Pimmit run, Pohick creek, Popes Head Creek, Sugarland Run, and various other minor streams. Individual outfall from the storm sewer may discharge to tributaries of these water bodies.
River Basin:	Potomac
Sections:	6, 7, 7a, 7b, 8, 8c, 9
Classes:	II, III
Special Standards:	b, g, y & PWS

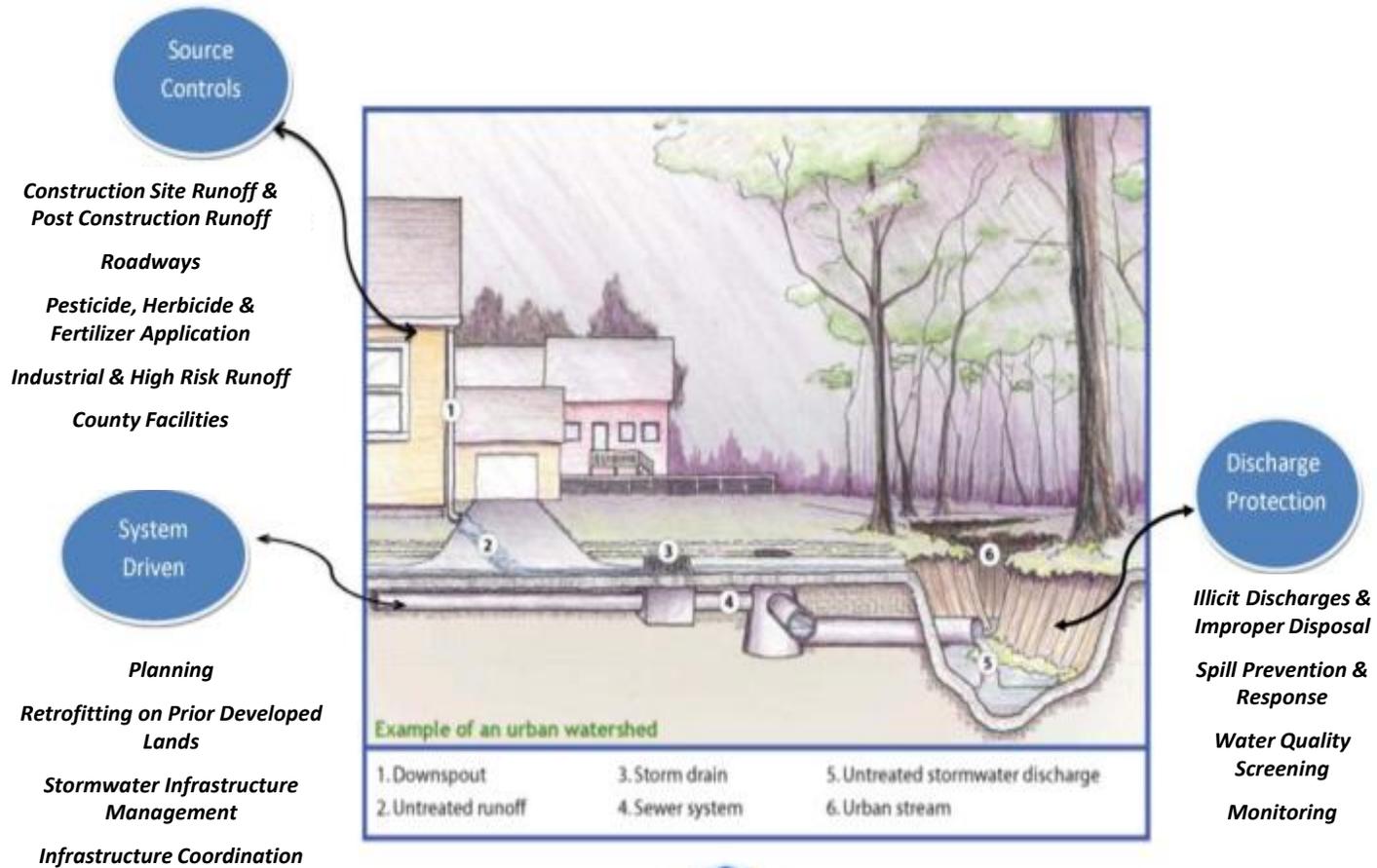
The authorized discharge shall be in accordance with this cover page, Part I – Authorization, Effluent Limitations and Monitoring Requirements and Part II – Conditions Applicable To All VSMP MS4 Permits, as set forth herein.

 Director, Department of Environmental Quality

 Date



MS4 Program Elements



Training  TMDLs
Public Education



TMDLs in the 2015 MS4 Permit

- Level of effort required for compliance with TMDLs is the biggest unknown in the new generation of permits
 - Compliance with requirements of permit constitutes adequate progress towards complying with applicable TMDL wasteload allocations
 - Permit is consistent with Chesapeake Bay TMDL and Virginia Phase I and II WIPs to meet the Level 2 (L2) scoping run for existing developed lands
 - Approved TMDLs as of permit effective date included in Attachment A
 - TMDL Action Plans may be implemented in multiple phases over more than one permit cycle using adaptive iterative approach
- Coordination with other MS4s is encouraged
 - Infrastructure coordination with VDOT
 - Agreements in place with Towns of Vienna and Herndon
 - Working towards Memorandum of Understanding with FCPS

Approved TMDLs (Appendix A)

- 25 WLAs have been assigned to Fairfax County's MS4
 - Each one is pollutant- and stream segment-specific
- Bacteria:
 - Sugarland Run
 - Mine Run
 - Pimmit Run
 - Difficult Run
 - Four Mile Run
 - Hunting Creek
 - Cameron Run
 - Holmes Run
 - Accotink Creek
 - Bull Run
 - Pope's Head Creek
- Sediment:
 - Difficult Run
 - Bull Run
 - Pope's Head Creek
- PCBs:
 - Portions of Tidal Potomac
- Nitrogen, Phosphorus and Sediment:
 - 3 Chesapeake Bay Segments
 - POTTF_DC
 - POTTF_MD
 - POTTF_VA



Chesapeake Bay TMDL Action Plan

- Requirements spelled out in Part I.D.1.b of MS4 permit and in DEQ Chesapeake Bay TMDL Special Condition Guidance (5/18/15)
- Develop Phased Chesapeake Bay TMDL Action Plan by 3/31/17
 - Review current MS4 Program Plan and existing legal authorities
 - Identify any new or modified legal authorities needed
 - Identify means and methods to address discharges from new sources
 - Estimate annual POC loads discharged as of 6/30/09
 - Determine POC load reductions required in first permit cycle
 - Identify means, methods and schedule to achieve required reductions
 - Offset loads from sources initiating construction 7/1/09 to 6/30/14
 - Offset loads from grandfathered projects
 - List future projects and associated acreage that qualify as grandfathered
 - Estimate cost to implement required reductions
 - Provide opportunity for public comment
 - List comments received and any modifications made to draft action plan

Chesapeake Bay TMDL Action Plan (cont'd)

- Eligible BMPs and Credit Opportunities (“means and methods”)
 - Structural BMPs: 3 Methodologies
 - VA Stormwater Clearinghouse BMPs
 - Chesapeake Bay Program Retrofit Curves/Equations
 - Chesapeake Bay Program Established Efficiencies
 - Land Use Change
 - Urban Stream Restoration: 5 Methodologies
 - Interim approved removal rates
 - Prevented sediment during storm flow
 - Instream and riparian nutrient processing during base flow
 - Floodplain reconnection volume
 - Dry channel regenerative stormwater conveyance
 - Urban Nutrient Management
 - Nutrient trading
 - Redevelopment



Other TMDL Action Plans

- Develop TMDL Action Plans to address pollutants identified in WLAs approved prior to permit effective date by 3/31/17
 - Effective and enforceable upon written notification from DEQ
 - Incorporated by reference into permit
- TMDL Action Plan Content
 - List applicable legal authorities
 - List applicable management practices implemented beyond permit requirements
 - Enhance public education and employee training
 - Assess all significant sources of pollutant(s) from county facilities of concern
 - Assess action plan effectiveness in reducing pollutant(s) using monitoring results or modeling tools
 - Solicit public input and consider public comments prior to submittal to DEQ

TMDL Action Plan Schedules

- Chesapeake Bay TMDL Action Plan (Nitrogen, Phosphorus and Sediment)
 - Pollutant Loading Analysis: August 2015 – July 2016
 - Draft Action Plan: August 2016
 - Final Draft Action Plan: October 2016
 - Public Comment Period: October – December 2016
 - Final Action Plan: February 2017
- Other TMDL Action Plans (Bacteria, Sediment and PCBs)
 - Pollutant Loading Analysis: March 2016 – June 2016
 - Draft Action Plan: August 2016
 - Final Draft Action Plan: October 2016
 - Public Comment Period: November 2016
 - Final Action Plan: January 2017



Potential Stormwater Management Projects

- MS4 Permit Part I.B.1. Planning
 - “No later than 12-months after the effective date of this state permit, the permittee shall submit to the Department a summary of potential stormwater management projects which may be selected from the permittee’s watershed management plans to be completed during the term of the permit.”
 - List of potential projects submitted to DEQ on 3/31/16 includes:
 - 45 Stream Restoration
 - 22 Pond Retrofit
 - 19 Dry Swale
 - 14 Outfall Restoration
 - 11 Bioretention
 - 11 Permeable Pavement
 - 9 Constructed Wetland
 - 9 Infiltration
 - 9 LID Site Retrofit
 - 6 Filterra
 - 4 Land Use Change
 - 2 Tree Plantings



Additional Information

For additional information, please contact

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