

**NARRATIVE FACT SHEET**  
**VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP)**  
**COUNTY OF ARLINGTON MUNICIPAL SEPARATE STORM SEWER SYSTEM**  
**VSMP PERMIT NO. VA088579**  
**Prepared pursuant to 4VAC50-60-520**

The Virginia Soil and Water Conservation Board (Board) is considering the reissuance of a Virginia Stormwater Management Program (VSMP) Permit for Stormwater Discharges from the Municipal Separate Storm Sewer System (MS4) owned and operated by Arlington County (County). Regulations developed under the Virginia Stormwater Management Act (Act) (§10.1-603.1 et seq. of the Code of Virginia (Code) require that VSMP permits be effective for a fixed term not to exceed five years (§10.1-603.2:2 (B)). The State Water Control Board and Department of Environmental Quality (DEQ) issued the existing 5-year permit effective January 24, 2002, which expired on January 24, 2007 and has been administratively continued henceforth, thus necessitating the issuance of a new permit at this time.

Permit Number: VA088587

Name of Permittee: Arlington County

Facility Location: Arlington County, Virginia

Receiving Waters: There are 11 major watersheds: Gulf Branch, Donaldson Run, Potomac River (A), Windy Run, Spout Run, Colonial Village/Rocky Run, Potomac River (B), Four Mile Run (contains the following major streams: Lower Long Branch, Doctor's Branch, Lubber Run, and Upper Long Branch), Little Pimmit Run, Pimmit Run, and Roaches Run  
 Receiving waters are located within the following hydrologic units:

Hydrologic Unit Code (HUC)	HUC Name	Corresponding National Watershed Boundary Dataset 6 <sup>th</sup> Order Number	Estimated HUC Watershed Acreage in Jurisdiction
PL23	Potomac River-Nichols Run-Scott Run	020700081005	9
PL24	Potomac River-Pimmit Run	020700100103	8,431
PL25	Potomac River-Four Mile Run	020700100301	8,210
PL26	Cameron Run	020700100302	44

MS4 outfalls may discharge to tributaries of these water bodies and do not drain the entire HUC acreage. The authorized discharges covered by this permit include discharges from all County MS4 outfalls including existing outfalls as well as any new outfalls constructed during the life of this permit. All discharges covered under this permit eventually drain into the Potomac River and Chesapeake Bay model segmentsheds- POTTf-DC (approximately 8,530 acres that drain the County outside of the Four Mile Run Watershed) and POTTf-VA (approximately 8,335 acres that drain the Four Mile Run Watershed). The acreages identified in the Chesapeake Bay model segmentsheds do not represent the acreages regulated under this permit; instead it represents the approximate total acreage in the jurisdiction.

Discharge Type: Discharge from the County of Arlington's MS4 system.

This proposed permit action is tentative. On the basis of preliminary review and application of

lawful standards and regulations, the Board proposes to reissue this VSMP permit subject to certain conditions.

### **I. Public Comment and Procedures for Permit Issuance by the Board**

Publication: *Washington Examiner*  
Publication Dates: February 10, 2013 and February 17, 2013  
Comment Period: Start Date: February 10, 2013 End Date: March 29, 2013

Persons may comment in writing or by e-mail to the DCR on the proposed reissuance of the permit no later than 5:00 pm on March 29, 2013. Address all comments to the contact person listed below. Written or e-mail comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. A public hearing to receive comments on the draft individual permit will be held at 10:00 a.m. on Friday, March 22, 2013 at the Arlington County Government Office Building, 2100 Clarendon Blvd., Room 109, Arlington, VA 22201. Reasonable limits may be set upon the time allowed for oral statements. The submission of statements in writing is encouraged.

The Regulatory Coordinator  
Virginia Department of Conservation and Recreation  
203 Governor Street, Suite 302  
Richmond, Virginia 23219

A copy of the draft individual permit and permit fact sheet can be found at: [http://www.dcr.virginia.gov/laws\\_and\\_regulations/lr3c.shtml](http://www.dcr.virginia.gov/laws_and_regulations/lr3c.shtml). For additional information, including a copy of the Arlington draft individual permit and permit fact sheet, or to review copies of materials or applicable laws and regulations, contact Mr. David Dowling at (804) 786-2291 or at the address above.

Following the public hearing and comment period, the Board will make its determination regarding issuance of a final permit.

### **II. Facilities and Activities Subject to this Permit**

The permit authorizes point source discharges of stormwater runoff and certain non-stormwater discharges from the MS4 operated and owned by the County of Arlington. An MS4 is a conveyance or system of conveyances owned and/or operated by a public entity, which is designed or used to collect or convey stormwater runoff and is not part of a combined sewer system or publicly owned treatment works. This can include streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains that convey stormwater and ultimately discharge to receiving waters. The MS4 permit regulates the discharge from the municipally-owned or -operated storm sewer system and not the municipality itself.

This permit does not and is not intended to cover all stormwater discharges within the jurisdictional boundaries of the County. This permit covers solely discharges from municipal stormwater outfalls owned and operated by the County. Drainage from acreage that discharges into the MS4 is considered regulated acreage under this permit. Drainage from acreage that discharges to State waters through outfalls not owned and operated by the County are not considered part of the Arlington County MS4; and thus are not regulated under this permit.

The County's MS4 is potentially physically interconnected with other MS4s located within and

immediately adjacent to its jurisdictional boundaries. This includes the following large and medium Phase I MS4s that are covered by individual permits:

- Fairfax County (VA0088587)
- Prince William County (VA0088595)

The County MS4 may also be physically interconnected to the following small MS4s Phase II MS4s that are covered under the General Permit for the Discharge of Stormwater from Small MS4s:

- City of Alexandria (VAR040057)
- City of Falls Church (VAR040065)
- Department of Defense-Pentagon (VAR040103)
- U.S. Army-Fort Story (VAR040068)
- George Mason University (VAR040106)
- George Washington Memorial Parkway (VAR040111)
- Virginia Department of Transportation (VAR040115)

### **III. Type and Quantity of Discharge Authorized under Part I.A.**

The permit authorizes the discharge of stormwater runoff from the County's MS4 in accordance with the conditions established by this permit. MS4 discharges are, in general, to be composed only of stormwater runoff resulting from precipitation or snowmelt. Some incidental non-stormwater discharges are authorized provided these discharges have been determined to not be significant sources of pollutants by the permittee, the Virginia State Water Control Board or the Board. These non-stormwater sources include discharges from: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash water and discharges or flows from fire fighting.

This permit also allows for non-stormwater discharges through the MS4 when those discharges are covered by a separate Virginia Pollutant Discharge Elimination System (VPDES) permit issued by DEQ or where DEQ has determined in writing that a discharge is not a significant source of pollutants and that a VPDES permit is not required. Notwithstanding, the County may require additional BMPs or activities be utilized by VPDES permitted facilities when those facilities discharge to its MS4 provided the County utilizes its delegated legal authorities.

This permit also allows the discharges of stormwater from regulated industrial activities, as defined at 9 VAC 25-31-10, through the MS4 provided authorization is obtained from DEQ by the industrial activity operator through a separate VPDES permit action. Similarly, this permit allows for discharges of stormwater from construction activities regulated under VSMP permitting regulations provided authorization is obtained by the construction activity operator through a separate VSMP permit action from the appropriate VSMP permitting authority.

Discharges resulting from spills into the MS4 are not authorized by this permit unless the discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage. This permit does not transfer liability for a spill itself from the

party(ies) responsible for the spill to the County MS4 nor relieve the party(ies) responsible for a spill from liability.

This permit does not regulate discharge categories that are excluded from obtaining permit coverage at 4 VAC 50-60-300 and from federal Clean Water Act (CWA) regulation. Any discharges of pollutant and / or acreage associated with excluded discharge categories is considered unregulated by this permit whether it discharges through the MS4 or directly to State waters.

#### **IV. Legal Basis for Permit Issuance**

The United States Environmental Protection Agency delegated the authority to implement Section 402 of the CWA to the Commonwealth of Virginia on March 31, 1975. The MS4 and construction stormwater permitting portions of Section 402 implementation were transferred to the Board and the DCR on January 29, 2005. The conditions of this permit are established in a manner consistent with the CWA and under the laws and regulations of the Commonwealth of Virginia.

Section 10.1-603.2:1. of the Virginia Stormwater Management Act authorizes the Board to issue, deny, amend, revoke, terminate, and enforce permits for the control of stormwater discharges from MS4s. It further directs the Board to “act to ensure the general health, safety and welfare of the citizens of the Commonwealth as well as protect the quality and quantity of state waters from the potential harm of unmanaged stormwater.”

Section 4VAC50-60-310 of the VSMP regulations requires the development and issuance of permits that include appropriate conditions. The Board applies its authority to establish appropriate permit conditions that further advance the County MS4 program in a manner consistent with the CWA and the Act.

#### **V. The Selection and Use of BMPs in Lieu of Numeric Effluent Limitations**

The Board has determined that the most economically and environmentally feasible method for MS4s to meet the requirements established by this permit is through the implementation of BMPs using an iterative process over a series of permit cycles. MS4 BMPs may consist of structural stormwater controls as well as ordinances, policies, procedures, planning and other programmatic efforts aimed at reducing pollutant loads that are designed with the ultimate compliance goal of meeting the requirements established by this permit.

Section 4 VAC 50-60-460 provides for the use of BMPs to control or abate the discharge of pollutants when numeric effluent limitations are infeasible. The Board finds that at this time numeric effluent limits are infeasible given current technologies and legal authority limitations. The determination of the appropriateness for establishing BMPs as permit conditions in lieu of numeric effluent limits is consistent with the Clean Water Act. § 40 CFR 122.44 (k) of the Code of Federal Regulations provides for the use of BMPs to control or abate the discharge of pollutants when numeric effluent limitations are infeasible or when authorized under section 402(p) of the Clean Water Act for the control of storm water discharges.

In selecting the BMP approach, the Board utilized the recommendations found in EPA’s Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits memorandum to develop a permit that requires the iterative implementation of BMPs. The iterative process allows the County the flexibility to select, implement,

evaluate and modify its scheme of BMPs to insure implementation of the most effective BMPs in reducing the discharge of pollutants.

This permit establishes conditions that refine the implementation of the County's long-term MS4 program in an iterative manner that represents reasonable further progress consistent with the water quality requirements established under the CWA. Conditions in this permit are generally in the form of comprehensive programs implemented on a system-wide basis to control sources of pollution rather than targeted treatment methods. At a local level, these types of programs consist of various components, including pollution prevention measures, management or removal techniques, stormwater monitoring, use of legal authority, and other appropriate means necessary to control the quality and quantity of stormwater discharged from the MS4.

In some instances, it may be appropriate for the County to consider and implement engineered permanent structural stormwater management facilities. However, the large number of MS4 outfall locations, the unavailability of land in highly developed areas and intermittent and varied discharge conditions, do not allow for the efficient use of large-scale design or for the use of 'end of pipe treatment'. Therefore, conditions in this permit stress the use of a source reduction and pollution prevention approaches for the reduction of pollutants in stormwater discharges. This approach is supported on the basis that the quality of stormwater discharge from the MS4 is dependent on the sources of pollutants that contribute to the system through runoff. Minimizing pollutant sources reduces the pollutant loading in MS4 discharges.

## **VI. Establishing Applicable Permit Conditions**

Section 402(p)(3)(B) of the CWA establishes the statutory permitting requirements for discharges from municipal storm sewers as the following:

*MS4 permits:*

- (i) may be issued on a system- or jurisdiction-wide basis;*
- (ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and*
- (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.*

This permit addresses each of the three statutory requirements established under the CWA in the following manners:

- (i) This permit is being issued on a system-wide basis. Authorization to discharge under this permit is being given to the County for all discharges from its MS4. Other MS4s located within the County are required to obtain separate authorization to discharge stormwater.*
- (ii) This permit requires the effective prohibition of non-stormwater discharges into the storm sewers. The authorization to discharge includes specific reference to authorized discharges and prohibits non-stormwater discharges and other CWA-regulated stormwater discharges into the MS4 unless separate authorization has been obtained by the discharger.*

- (iii) This permit requires controls to reduce the pollutants to the maximum extent practicable, including management practices, control techniques and system design and engineering methods, and includes other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

In 1999, the Ninth District Court of Appeals determined that MS4 permits need not require strict compliance with water quality standards, rather compliance was to be based upon the maximum extent practicable standard established in the CWA. The court further ruled that the permitting authority could, at its option, require compliance with water quality standards. Defenders of Wildlife vs. Browne 191 F.3d 1159 (9th Cir. 1999).

EPA Region III sent a June 26, 2006 letter to the Department detailing EPA's expectation that MS4 discharges protect the water quality and to satisfy the appropriate water quality requirements of the CWA. This letter stated:

*"[T]oday's rule specifies that the 'compliance target' for the design and implementation of municipal storm water control programs is 'to reduce pollutants to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the CWA. The first component, reductions to the MEP, would be realized through implementation of the six minimum measures. The second component, to protect water quality, reflects the overall design objective for municipal programs based on CWA section 402(p) (6). The third component, to implement other applicable water quality requirements of the CWA, recognizes the Agency's specific determination under CWA section 402(p) (3) (B) (iii) of the need to achieve reasonable further progress toward attainment of water quality standards according to the iterative [Best Management Practices] process, as well as the determination that State or EPA officials who establish TMDLs could allocate waste loads to MS4s, as they would to other point sources." 64 F.R. 68722, 68753-54 (emphases added).*

*Although this language is included in the Preamble to the Phase II Rule, it applies to medium and large MS4s as well [Id. At 68754]. As a result, it is clear that EPA intends all municipal dischargers to achieve both technology-based and water quality-based limits. Because WQS are generally more stringent than technology-based standards, the former will generally serve as the minimum floor for discharges. Therefore, the plain statutory language coupled with EPA's own background document on the Phase II Storm Water Rule require that Phase I MS4 permittees comply with both WQS and the MEP Standard, so that discharges must achieve the more stringent limitation.*

This permit clearly defines the expectations of the County in meeting each of the components discussed above.

The first component, reductions to the maximum extent practicable, will be realized through implementation of the iterative MS4 Program, as defined in the permit. The second component, to protect water quality, reflects the overall design objective of the MS4 Program based on the 'compliance targets' established by the permit. The third component, to implement other applicable water quality requirements of the CWA is met by the requirement to address TMDL wasteload allocations through the development and implementation of TMDL Action Plans for pollutants of concern identified in

approved TMDLs.

Under this permit, the permittee will develop TMDL Action Plans within 24-months of permit issuance for all TMDLs in which an approved TMDL allocated the permittee's MS4 a wasteload for a pollutant of concern prior to the time of permit issuance (Attachment A of the permit).

In addition, this permit requires that the permittee also develop TMDL Action Plans for any wasteload for a pollutant of concern allocated in an approved TMDL during the permit cycle provided the impaired water was included on the 2012 303(d)/305(b) list.

Impaired receiving waters and associated TMDLs are found in Attachment 3 of this fact sheet.

### **Other Considerations Taken Into Account During Permit Development**

#### Consistency with State or Local Law or Regulation

Section 4 VAC 50-60-320 provides that a VSMP permit cannot infringe on any state or local law or regulations. This is consistent with federal language found at 40 CFR 122.5 (c). Although the County may not have ownership of the acreage discharged into receiving waters through its MS4, it can use its legal authority to control the pollutant contributions in a manner consistent with the appropriate legal authority has been granted by the Commonwealth of Virginia and has been established by local ordinance.

As this permit only regulates the discharge of municipal stormwater and not the municipality, the permit cannot infringe on other state or local laws such as those pertaining to land use and zoning, which are clearly defined by provisions of other Federal, State or Local Code. However, a municipality may choose to utilize authorities provided under Code of Virginia to implement mechanisms necessary to meet conditions established by the permit. EPA recognized these limitations, specifically those regarding land use, in its Phase II Stormwater Regulations in the Federal Register Vol. 222. Page 68762 that, "Land use planning is within the authority of local governments and disagrees that, the implication of [the Phase II rule] dictates any such land use decisions."

This permit recognizes that the County may utilize its legal authorities beyond that required by regulation, but is also intended to be consistent with existing state law or regulation.

#### Utilization of Existing Authorities

Virginia considers counties as "arms" or instruments of the State. Under the Dillon Rule, the Board cannot issue a permit that gives authorities to political subdivisions that have not been conferred to them either expressly, or by necessary implication, by Code. "In determining the validity of a local government's exercise of legislative authority, Virginia follows the Dillon Rule of strict construction that provides "municipal corporations have only those powers expressly granted, those necessarily or fairly implied from expressly granted powers, and those that are essential and indispensable" and its corollary that "[t]he powers of county boards of supervisors are fixed by statute and are limited to those powers conferred expressly or by necessary implication." Therefore, to have the power to act in a certain area, local governments must have express enabling legislation or authority that is necessarily implied from enabling legislation." Opinion of the Attorney General to the Hon. Richard P. Bell, 2010 Va. AG S-32 (10-045) [citations omitted].

Regulations found at 4 VAC 50-60-380 specify what MS4 operators are required to include in the original permit application and do not provide minimum standards for individual program implementation. These regulations are based on the current existing federal regulations found at 40 CFR 122.26.

Since neither state nor federal regulations exist that establish minimum standards for MS4 discharges, the Board has relied on existing statutes and regulations adopted by the Virginia General Assembly and the Board to establish minimum standards for certain program elements. For example, as condition of the permit, the County must at a minimum comply with permit conditions regarding the Virginia Erosion and Sediment Control Law (§ 10.1-560 et. seq.) and Regulations (4VAC50-50-30 et. seq.), Virginia Stormwater Management Act and the VSMP regulations. These Codes and regulations are under the regulatory oversight of the Board.

This permit was careful not to include inflexible or overly prescriptive retrofit requirements in this permit that may extend beyond the Board's or County's legal authority to require and implement, which could make it impossible for the County to conform to the permit conditions.

#### Requirement Not to Cause Injury or Infringe on Private Property Rights.

Section 4 VAC 50-60-320 states that a permit does not authorize any injury to persons or property or invasion of other private rights. In addition, a permit cannot convey any property rights of any sort, or any exclusive privilege.

The MS4 Program involves the development and implementation of comprehensive programs that address stormwater management and source reduction/pollution prevention for a variety of land use activities including: residential, commercial, industrial, institutional and construction areas. As such, the Board developed this permit within the confines of law.

#### Permit Flexibility

During its regulatory action to establish the Phase I Stormwater Regulations, EPA provided guidance to the approach it expected states to take when implementing the regulations. "EPA and the States will strive to achieve environmental results in a cost effective manner by placing high priority on pollution prevention activities, and by targeting activities based on reducing risk from particular harmful pollutants and/or discharges to high value waters" (Federal Register, Vol. 55, No. 222, November 16, 1990, Page 47994).

To this end, the board recognizes that, in most instances, the County is best suited to determine the specificity, design and targeting of the comprehensive stormwater management programs to address priorities in a cost effective manner. As such, the permit provides flexibility for the County while still establishing specific, enforceable permit conditions in accordance with applicable laws and regulations. This promotes the identification, targeting and control of stormwater pollutant sources in an appropriate manner given the available control alternatives.

#### **VII. Maximum Extent Practicable Through Use of an Iterative MS4 Program**

The permit defines the minimum requirements of the MS4 Program, which include components to address stormwater management through existing structural and source controls, new and significant redevelopment, roadways, retrofitting, pesticide, herbicide and fertilizer applications, illicit discharges and illegal disposal, spill prevention and response, industrial and high risk runoff, construction site runoff, storm sewer infrastructure management, county facilities, public education, training, water quality screening, TMDL action plans and a Chesapeake Bay TMDL action plan. Additional provisions of the permit require that adequate and appropriate legal



authorities and financial assurances be maintained throughout the permit cycle to administer the program and that the County assess the progress of its program both in program implementation and its effects on pollutant load reduction.

The comprehensive MS4 Program developed by the County is designed to work with citizen needs over time to address the quality of stormwater discharges and in coordination with permit requirements and state and federal environmental regulations. Information regarding the County MS4 Program is available at <http://www.arlingtonva.us/departments/EnvironmentalServices/epo/page73582.aspx>

This permit establishes the annual report as the mechanism for maintaining an updated MS4 Program Plan. The expectation established by this permit is that any person could review the most recent annual report and gain a thorough understanding of the permittee's program. The first annual report is to be updated to include the items necessary for compliance with this permit and must be placed on the permittee's website within 30-days of submittal to the Department.

### **VIII. Special Conditions and Changes from the 2002 Permit**

#### **Roles and Responsibilities**

This permit requires that the permittee clearly define how it divides the responsibilities to ensure compliance. By defining who is responsible for which conditions of the permit, management of the overall program is streamlined and staff is made aware of their responsibilities.

#### **Resources**

The 2002 permit stipulated that the permittee provide adequate resources to implement the activities under the Stormwater Management Program, to the maximum extent practicable. This permit stipulates that the permittee provide adequate resources to implement the requirements of this permit.

The reasons for this modification are:

1. The term 'maximum extent practicable' or MEP has a specific meaning in MS4 statutory language. MEP is the statutory compliance effort required to meet the CWA for the reduction of pollutants and should not be applied to any funding requirements.
2. The permit is the tool used under the CWA to establish conditions that the permittee must meet. Compliance is determined based on the permit. Thus, it is more appropriate to require that the permittee provide adequate funding to meet the conditions of the permit.

#### **Construction Site Runoff**

This permit establishes that the permittee operate a local erosion and sediment control program that is consistent with the Virginia Erosion and Sediment Control Law and attendant regulations as the minimum standard. This permit also incorporates the reduced regulatory size threshold to comply with the Chesapeake Bay Preservation Act requirements.

As a result, the permittee's program will address land disturbing activities 10,000 square feet and greater. By referencing the state regulatory requirements, the permit is consistent with state standards for plans review, establishes a site inspection schedule and staff training. Consistency and compliance with state statute and regulation is determined by routine DCR program review. During this review, DCR conducts a thorough program review, which includes review of the plan review process, compliance evaluation, inspection procedures and program administration. If the permittee's program is found not to be consistent with the requirements, the Board may direct compliance actions through an agreed upon Compliance Action Agreement (CAA). The CAA establishes the time schedule for the program to re-attain consistency with the State requirements.

This permit also requires that the permittee continue implementation of a more restrictive program that requires erosion and sediment controls on land disturbing activities 2,500 square feet and greater where the permittee has determined additional water quality protection is warranted under the Chesapeake Bay Preservation Act. The permit also authorizes the ability for the permittee to require more stringent erosion and sediment controls where it finds necessary, provided the requirements are consistent with the authorizing statute.

Under this permit, the permittee must implement procedures to ensure that separate VSMP authorization has been obtained by large and small construction activities and requires that the permittee treat pollutant discharge other than sediment as an illicit discharge.

#### Post Construction Runoff from Areas of New Development and Development on Previously Developed Lands

This permit continues to implement the Commonwealth's iterative strategy to address the impacts of stormwater runoff from urbanization. Since 1988, total phosphorus has been Virginia's keystone pollutant used to determine water quality design requirements as a result of new and redevelopment. Phosphorus was chosen by Virginia to allow consistent application of performance based water quality criteria. It was also selected because it exhibits some of the characteristics of particulate pollutants, as well as those of soluble pollutants, making it a good indicator of urban pollutants in general.

In 1988, the Commonwealth passed the Chesapeake Bay Preservation Act (CBPA) requiring localities in Tidewater Virginia, including Arlington, to implement water quality protection programs for new development and redevelopment on certain lands designated by the locality. Regulations under the CBPA statute established an average land cover condition equivalent to 16% impervious cover with corresponding phosphorus loading rates of 0.45 lbs./ac/yr for new impervious acres and a 10% reduction in the existing load for prior developed lands. The 0.45 lbs./ac/yr design criteria was developed as a relative phosphorus rate equivalent to the discharge from forest cover, pasture land, conservation tillage and conventional tillage for lands in the Chesapeake Bay watershed as published in Virginia's Chesapeake Bay Initiatives: First Annual Progress report (September 1985).

The average land cover condition determined the regulatory level of stormwater control implementation. As a result, post construction runoff from lands designated under these regulations and implemented by local post development ordinances such as that of the permittee were designed to ensure no increase in the phosphorus load as developed equivalent to 1985 average land use from undeveloped lands.

In 1998, the separate Virginia Stormwater Management Regulations were amended to reflect

the continued evolution in the definition and role of stormwater. The technical criteria established as part of the amendment addressed, not only water quality but stream channel erosion and flooding, as well, in order to address the *hydrologic stability* of downstream receiving water based on peak discharge rate. The 1998 regulatory modifications applied not only to localities in Tidewater Virginia, such as the permittee, but also to voluntary stormwater programs adopted throughout the state.

In 2004, the Virginia General Assembly transferred the NPDES municipal and construction stormwater permitting authority to DCR and mandated that DCR develop minimum post construction stormwater management regulations for MS4 localities that, among other conditions, require that post construction stormwater management regulations (1) maintain an after-development runoff rate of flow and characteristics that replicate, as nearly as practicable, the existing predevelopment runoff characteristics and site hydrology, or (2) improve upon the contributing share of the existing predevelopment runoff characteristics and site hydrology if stream channel erosion or localized flooding is an existing predevelopment condition. As well, the regulations encourage low impact development designs, regional and watershed approaches, and nonstructural means for controlling stormwater. In addition, as a result of legislative action, post development design criteria became mandatory for all regulated land disturbing activities under state regulation. The design criteria were implemented in conjunction with the General Permit for Stormwater Discharges from Construction Activities (CGP). However, regulations that detailed the requirements for MS4 localities did not become final until September 2011 after significant public participation and comment.

This permit requires the permittee to consistently implement the 2011 stormwater regulations. In order to coordinate implementation efforts between MS4 localities and the State, the regulation designates a start date consistent with reissuance of the CGP, expected to be effective July 1, 2014. Under this permit, the permittee is required to update its ordinances and procedures to be consistent with the regulations. Local plan review, inspection and enforcement is mandated through these regulations and will ensure that erosion and sediment control plans and post development stormwater management plans are reviewed and approved by the permittee prior CGP coverage being granted by the Commonwealth. Additionally, as a result of implementation of these regulations through ordinance, the permittee will have the responsibility to ensure implementation of construction activities' stormwater pollution prevention plans and the federal Effluent Limitation Guidelines for construction activities. Before the permittee implements its program, it must submit its implementation plan to the Board for approval as specified by the regulations.

Effective with the permittee's implementation of the 2011 stormwater regulations, the mechanism by which it determines post development runoff compliance will completely change. Water quality design calculations will no longer be based simply upon pre- and post-development pollutant loads from the first ½-inch of runoff from impervious surfaces and the reductions based on an average cover land condition. Instead, post development water quality design will be based on the concept of runoff volume reduction from the first 1-inch of rainfall on the entire site. The new Virginia Runoff Reduction Method compliance calculation procedure categorizes site land covers as either: (1) forest and open space, (2) managed turf and disturbed areas, or (3) impervious surfaces. The new phosphorus load threshold is 0.41 lb/ac/yr, corresponding to an average watershed imperviousness of 10% (based on the Center for Watershed protection's Modified Impervious Cover Model). The equivalent phosphorus load was based on discussions regarding the impact of impervious cover on and required protections for local receiving waters. The water quality design criteria is based on the 60% forest cover, 30% managed turf, and 10% impervious cover, incorporating all three land cover conditions now

being addressed in the new methodology.

In addition, the water quality protection requirements for redevelopment have been modified.

The previous regulations required that the phosphorus load from the site as previously developed must be reduced by 10% after redevelopment. The modified regulations include two different requirements depending on the amount of land disturbance. If the area of disturbance is greater than or equal to one acre, the original phosphorus load must be reduced 20%. If the disturbed area is less than one acre, the original load must be reduced 10%

It is not appropriate to compare the water quality design criteria based on average land cover and the runoff reduction design criteria because the method of calculation, the design event and the method of compliance are different. One does not equate to the other.

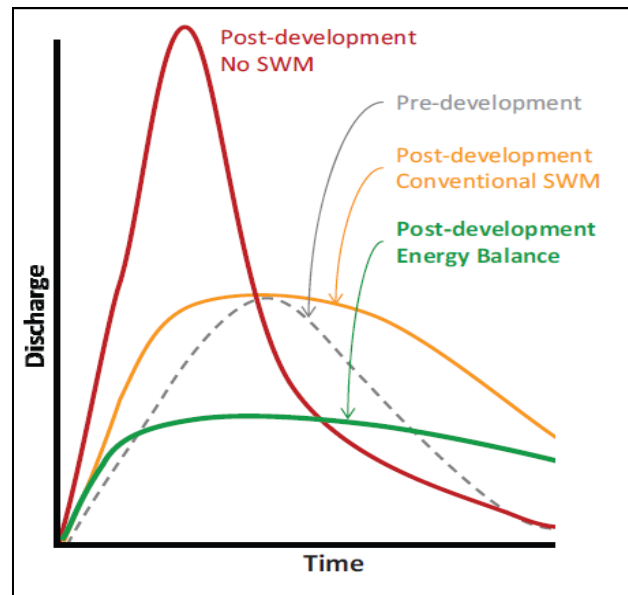


Figure 1: Varying hydrographs based on level of stormwater quantity controls

The 2011 regulation modifications also change the methodology that the permittee uses to determine required runoff quantity control.

Effective with implementation under this permit, the permittee will review quantity control based on volume-based hydrology or "energy balance" rather than just peak discharge rates. The principal of energy balance is that the product of the pre-development peak flow rate and runoff volume should be proportional to the same product for the post-development condition. For natural channels, the regulations also call for an improvement factor. As a result, the discharge hydrographs from the water quantity designs approved by the permittee will resemble those found in Figure 1 for Post-development Energy Balance and will not just be based on peak rate discharges.

The 2011 modified regulations also address grandfathering of future projects that have already initiated preliminary designs and/or have received local zoning or other approvals based on the older design criteria. Projects that have a currently valid proffered conditional zoning plan, preliminary or final subdivision plat, preliminary or final site plan or zoning with a plan of development, or any document determined by the locality as equivalent thereto and approved by a locality prior to July 1, 2012 but that does not obtain a CGP by July 1, 2014 may complete design and construction using the previous design criteria, provided the construction is completed by July 1, 2019. As a condition of this permit, the permittee must identify those projects that are authorized by the regulation to use the older design criteria.

At the time of this permit's expiration, the permittee will have to:

- 1) Continue implementation of the its current program to control stormwater runoff from new development and redevelopment of prior developed sites in a manner compliant with the current design criteria

- 2) Update and modify its program to implement the new design criteria and compliance methodology on a schedule established by statutory and regulatory actions. The expected completion date for this is July 1, 2014. However, the exact date is outside of the permittee's control. As such, it is not appropriate to put the date into the permit.
- 3) Inspect permanent stormwater controls to verify long-term maintenance.

#### Retrofitting on Prior Developed Lands

The permittee has completed a series of water quality retrofit studies for its major watersheds in which potential retrofit opportunities were identified. The permittee has also developed a prioritized list of stream restoration projects.

This permit requires that the permittee:

- 1) Implement a minimum of seven retrofit projects from the completed retrofit studies;
- 2) Plant a minimum of 2,000 trees during the permit cycle on County parkland and County-owned rights-of-way;
- 3) Implement a program to distribute a minimum of 2,000 trees to private property owner to plan;
- 4) Continue to implement its StormwaterWise Landscapes program to encourage voluntary retrofit on private properties; and,
- 5) Report on continued stream restoration projects completed as a result of the prioritized list of stream restoration projects.

#### Roadways

This permit introduces minimum numeric expectations by requiring the permittee to sweep a minimum of 25,000 lane miles during this permit cycle. The permittee has previously reported both the number of passes and estimated lane miles for both commercial and residential areas. However, the permittee has modified its methodologies to improve the estimate of the actual number of lane miles swept during this permit cycle.

This permit also requires the permittee to develop protocols for county road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.

Finally, this permit requires the permittee to keep deicing materials covered from precipitation until application.

#### Pesticides, Herbicides and Fertilizers

This permit establishes a development schedule so that within five years of permit issuance, turf and landscape nutrient management plans will be implemented on all permittee owned and operated lands where nutrients are placed on more than one-acre of contiguous land. Virginia regulation, 4 VAC 5-15-10 defines a "nutrient management plan" as a plan "prepared by a Virginia certified nutrient management planner to manage the amount, placement, timing, and

application of manure, fertilizer, biosolids, or other materials containing plant nutrients in order to reduce nutrient loss to the environment and to produce crops.” DCR has a Turf and Landscape Nutrient Management Planning category in its nutrient management program. These requirements are expected to be followed by the certified nutrient management planner. Additional information regarding turf and landscape nutrient management plans can be found at [http://www.dcr.virginia.gov/stormwater\\_management/nmplnr.shtml#forturf](http://www.dcr.virginia.gov/stormwater_management/nmplnr.shtml#forturf)

The permit also authorizes regulation of fertilizers in accordance with authorizing State statute if the permittee determines that such a source control is necessary to prevent any further degradation to water resources, to address TMDL requirements, to protect exceptional state waters, or to address specific existing water pollution and are regulated in accordance with §10.1-603.7.

The permit also complies with State statute by restricting the use of materials containing nutrients as deicing agents and restricting the use of cleaning agents containing phosphorus.

#### Illicit Discharges and Improper Disposal

This permit requires the permittee to inspect a minimum of 300,000 linear feet of sanitary sewer during this permit cycle to minimize the infiltration of sanitary sewage into the MS4.

This permit also defines non-sediment discharges at construction site activities as illicit discharges under this permit and requires implementation of appropriate pollution controls. There are no other major changes in this permit for Illicit Discharges and Improper Disposal programs.

#### Spill Prevention and Response

This permit requires the permittee to continue coordination efforts with the Fire Department and other County staff to prevent spills and when unpreventable, provide the proper response. There are no changes to the requirements in this permit.

#### Industrial and High Risk Runoff

This permit places emphasis on the visual inspection of industrial and high risk outfalls at their discharge into the MS4 as a means of identifying potential sources of pollutants. The permit builds upon the Commonwealth’s VPDES permitting program and requires the permittee to work in coordination with the regulatory agency that oversees industrial stormwater permitting.

This permit also identifies major automotive facilities as commercial establishments that contribute significant pollutant loadings to the MS4 and requires that outfalls from these establishments be inspected and control measures implemented as necessary.

#### Storm Sewer Infrastructure Management

This permit requires that the permittee inspect a minimum of 5,000 catch basins during this permit cycle and conduct maintenance as necessary. In addition, this permit establishes a minimum threshold for inspection of storm sewer by requiring that 425,000 linear feet of system be inspected over the life of this permit.

This permit builds on the existing programs by requiring continued infrastructure reinvestment

and rehabilitation and specifies that the permittee develop a plan for repair or replacement for stormwater outfalls. The permittee conducted a county-wide stream assessment that included evaluating outfall conditions and ranking each on a severity scale between one and five with one being in the best condition and five being the worst condition. Thirty-five outfalls scored a 4 or 5 on the severity scale, which is less than 10% of all outfalls county-wide. Of the 35 outfalls:

- 2 are located on federal government property and therefore are not MS4 outfalls;
- 13 of the outfalls are located on public lands and are being addressed through comprehensive master planning priorities in the adopted Capital Improvement Plan in conjunction with the permittee's long-term stream restoration program; and
- 20 are located on private property or in public drainage easements that require access through private property. Access by other directions is physically limited due to steep wooded stream valleys which may incur environmental damage if the permittee used this route of access.

The permittee will be focusing efforts to repair 3 of the 20 outfalls located on private property or requiring access through private property through the planned Windy Run and Donaldson Run stream restoration projects. The permittee will use their efforts to repair these 3 outfalls as a pilot study to explore how to overcome access issues and conduct maintenance where barriers are encountered, both legally and physically. As part of the pilot study, the permittee will document which efforts were successful or unsuccessful in gaining access to the outfalls. The study will be incorporated into future stream restoration efforts. Additionally, the permit requires the permittee to summarize the access constraints for the remaining outfalls and identify strategies to perform necessary maintenance.

Another new condition established under this permit is that the permittee is required to identify the number of outfalls that it owns or operates and the accompanying impervious and pervious acres served for each watershed.

The discharge of materials and contaminated flush water resulting from stormwater maintenance is specifically identified as not authorized under this permit.

#### County Facilities

This permit contains a new section that addresses discharges specifically from County facilities. This section pertains specifically to those facilities owned and operated by the county. The conditions established in this permit require the utilization of good housekeeping practices, the discharge prohibition of vehicle wash water, wastewater, purposeful dumping of yard waste and grass clippings and the application for separate permit coverage for all facilities regulated under the VPDES industrial stormwater program.

This permit also requires the development and implementation of individual stormwater pollution prevention plans for any high-priority county facilities as well as the evaluation of all county facilities with greater than two-acres of impervious surface for potential retrofit opportunities.

#### Public Education

This permit places additional emphasis on public education and outreach that will enhance the

permittee's existing programs. This permit also encourages transparency of the permittee's efforts by requiring that the permit, annual reports and the most current MS4 Program Plan be made available for public review.

### Training

This permit expands on the existing training requirements and establishes a new section that defines the staff training requirements. This permit requires specified training for appropriate staff in identification of illicit discharges, good housekeeping and pollution prevention, erosion and sediment control plans review and inspection, spill response and pesticide application.

### Water Quality Screening Programs

New in this permit is the requirement for the permittee to develop and implement wet weather screening plans for the Shirlington commercial district and the South Four Mile Run Industrial District.

### TMDL Action Plans other than the Chesapeake Bay TMDL

The 2002 permit does not address TMDLs. This permit requires that the permittee develop TMDL Action Plans for watersheds within 24-months of permit issuance where a wasteload for a pollutant of concern has been allocated to the permit at the time of permit issuance. It also requires that the permittee develop additional TMDL Action Plans for TMDLs established during the permit cycle for impaired waters listed on the 2012 303(d)/305(b) list when a wasteload for a pollutant of concern has been allocated to the MS4 in an approved TMDL. TMDL Action Plans may be implemented in multiple phases over more than one permit cycle using the adaptive iterative approach provided adequate progress is made to reduce pollutant discharges in a manner that is consistent with the assumptions and requirements of the applicable TMDL wasteload allocations. Progress will be demonstrated by representative and adequate monitoring or other methods (e.g. modeling). Demonstration of compliance with the TMDL WLA assumes that the permittee is not causing or contributing to violations of the water quality standards.

This permit establishes and Action Plan development schedule and requires

- 1) Defined content be included in the Action Plan;
- 2) Public participation and comment during development of the Action Plan;
- 3) Implementation of the Action Plan; and,
- 4) Evaluation of the Action Plan

For TMDL Action Plans other than the Chesapeake Bay Action Plan, adequate progress is measured during this permit cycle as development and implementation of the TMDL Action Plans. This is in contrast to the requirements of the Chesapeake Bay Action Plan for which permit requirements for MS4s were established in Virginia's Chesapeake Bay Watershed Implementation Plan.



## Chesapeake Bay TMDL Action Plan

This permit is designed to strengthen the permittee's MS4 program in order to protect all surface waters. As a result, by implementing the main body of the permit, the permittee will provide increased protection to the Chesapeake Bay in a manner consistent with Virginia's Phase I and II Watershed Implementation Plan commitments accepted by EPA.

### *Control of Transitional Loads and Accounting for Growth from New Development*

Implementation of the Erosion & Sediment Control (ESC), the revised Stormwater Management Regulations and the Chesapeake Bay Preservation Act are three key vehicles that the permit uses to address nutrient and sediment loadings during construction and post-construction. Further, these regulatory programs represent a framework that will provide the State and EPA with reasonable assurance that the pollutant reductions necessary to address the Chesapeake Bay TMDL will be met.

The permit requires that the County's erosion and sediment control program remain consistent and compliant with the Virginia Erosion and Sediment Control Law and its attendant regulations. Doing so ensures appropriate plan review by certified plan reviewers and implementation of a set inspection schedule consistent with State regulation for all regulated land disturbing activities regulated under the Law. Beyond that, this permit requires the permittee to develop and implement an erosion and sediment control outfall monitoring program to evaluate the effectiveness of the County's program and to identify and propose solutions to any observed issues.

Implementation of the requirements for the control of post-construction runoff from new and redevelopment, this permit implements the Commonwealth's strategies for addressing future growth.

The new statewide DCR stormwater management regulations will address the sediment and nutrient loads and stormwater quantity issues with new development and redevelopment over the entire Chesapeake Bay watershed as described in this fact sheet regarding Post Construction Runoff from Areas of New Development and Significant Redevelopment. County ordinance has established the average land cover condition as 16%, which is equivalent to the Chesapeake Bay watershed land use as described above. As a result, no additional offsets are required for the permittee to address new growth for grandfathered projects or to offset an increased load as a result of new development between July 1, 2009 and June 30, 2014.

### *Nutrient Management Planning*

The permit requires the County to implement turf and landscape nutrient management plans on County lands where nutrients are applied. Nutrient management plans are designed to insure that the appropriate amounts of nutrients are applied to maintain a healthy vegetative cover that is necessary both for the filtration and infiltration of stormwater runoff. A general 5% reduction in baseline application is a simplistic approach that does not address the needs of the vegetation nor represents a sound scientific approach.

### *Pollutant of Concern Loadings from Existing Sources*

This permit requires the permittee to reduce the pollutant loadings for the pollutants of concern from existing sources as part of its Chesapeake Bay Action Plan in a manner consistent with

Virginia's Chesapeake Bay Watershed Implementation Plan (WIP). Existing sources are defined as pervious and impervious urban lands developed prior to July 1, 2009. Calculations are based on an average tributary loading rate.

In summary, Virginia committed to require MS4 operators such as the permittee to

- 1) Implement sufficient BMPs on existing developed lands to achieve nutrient and sediment reductions equivalent to Level 2 (L2) scoping run reductions. The L2 scoping run is reductions beyond the 2009 progress loads and beyond nutrient urban management reductions.
  - a. L2 implementation equates to the following average load reduction from impervious regulated acres:
    - i. 9 percent of nitrogen loads;
    - ii. 16 percent of phosphorus loads; and,
    - iii. 20 percent of sediment loads from impervious regulated acres.
  - b. L2 implementation equates to the following average load reduction from pervious regulated acres
    - i. 6 percent of nitrogen loads;
    - ii. 7.25 percent of phosphorus loads; and,
    - iii. 8.75 percent sediment loads.
- 2) Implement the necessary reductions to meet the L2 implementation levels within three full permit cycles (15 years). In the Phase I and II WIP and Chesapeake Bay TMDL the Commonwealth committed to uses a phased approach for MS4 affording MS4 permittees three full five year permit cycles to implement necessary reductions. As currently stated in the WIP the phased reductions are as follows:
  - a. 5% of the necessary reductions no later than the end the first permit term;
  - b. 35% of the necessary reductions in the second permit term (totaling at least 40% of the necessary reductions no later than the end of the second permit term); and
  - c. 60% of the necessary reductions from the third permit term (totaling 100% of the necessary reductions no later than the end of the third permit term).

Conditions of future permits will be consistent with the TMDL or WIP conditions in place at the time of those permit re-issuances.

- 3) Implement sufficient practices during the first permit cycle so as achieve a reduction in the loading rate equivalent to 5% of the difference between the 2009 progress load and the L2 implementation levels. The permittee shall also review its authorities and adopt and modify the necessary ordinances as well as develop its resources in order to implement the necessary reductions, e.g., develop design protocols, operation and maintenance programs, site plan review criteria, inspection standards, and tracking systems during this first permit cycle.
- 4) Implementation of the remaining necessary reductions over the remaining two permit cycles.

The permittee is required by this permit to identify the acreages for both the pervious and impervious urban land uses as of June 30, 2009. This will allow the permittee to calculate the existing source loads discharged as of 2009 using Table 3 by multiplying the existing acreage by the Edge of Stream loading rates. Using Table 4, the permittee will calculate the total load reductions required to meet 5% reductions during this term of the permit by multiplying the existing acreage by the reduced load rates.

The permittee is allowed to adjust the levels of reduction between pervious and impervious land uses within their service area and Chesapeake Bay segment level, provided the total pollutant load reduction is met. For example, the permittee could implement a 5% nitrogen load reduction on impervious land uses by implementing a reduction strategy sufficiently greater than 6% nitrogen load reduction on pervious land uses provided the total loads from both land uses are met. This permit also authorizes the permittee to participate in the Nutrient Credit Exchange Program as provided by law.

Compliance with reduction in loading rate will be measured based on the total reductions required as determined by calculations defined by Tables 3 and 4 in the permit and the reported implementation of BMPs. Additionally, the permittee should use the Watershed Model Phase 5.3.2, or some other tool or methodology that is approved by the department as consistent with the assumptions of the Bay TMDL in order to demonstrate compliance with the reductions. It is DCR's intention to develop additional guidance to address acceptable methods for permittees to demonstrate progress with the Chesapeake Bay TMDL.

Finally, since 4 VAC 50-60-610 provides legal authority for the Board to open, modify and reissue this permit, this permit includes language providing notification that it may be opened and modified. DCR will consider recommending to the Board reopening the permit upon request when an applicable TMDL has been adopted by the Virginia Water

#### *Additional Protections Provided the Chesapeake Bay by this Permit*

This permit requires that the permittee continue to identify and eliminate illicit discharges and illegal dumping. The elimination of these illicit discharges reduces the amount of sediment and nutrients discharged through the MS4. For example, using concentrations for the typical pollutant concentrations in untreated medium strength domestic wastewater, published in Wastewater Engineering Treatment and Reuse, Fourth Edition, the elimination of sanitary inflow into the MS4 will remove an estimated 6 lbs. of total suspended solids, 0.33 lbs. of total nitrogen and 0.06 lbs. of total phosphorus per 1,000 gallons of domestic wastewater from entry into the MS4. This permit does not regulate discharges from sanitary sewer treatment plants or their associated infrastructure or discharges from septic systems. Failed and failing sewer lines and septic tanks will be regulated under the appropriate Code and regulations. The permittee will continue to identify these discharges and report them to the appropriate regulatory authorities.

This permit requires continued implementation street sweeping and stormwater infrastructure maintenance. If the permittee chooses to utilize street sweeping and other infrastructure maintenance as a mechanism for reduction, it will need to describe this effort in its Chesapeake Bay Action Plan.

### **IX. Monitoring Requirements (Part I. C.)**

#### Watershed Monitoring

This permit proposes elimination of the existing watershed monitoring program at the request of the permittee. The permittee has stated that the program is too limited in geographic extent and collection frequency to be of value for establishing a water quality baseline and evaluating the effectiveness of programs across the jurisdictional boundary. The permittee proposes to continue targeted monitoring efforts that are complementary to ongoing programs.

#### Four Mile Run Bacteriological Monitoring

This permit requires the continuance of the on-going bacteria monitoring program in the Four Mile Run watershed. This includes analyses of results from monthly monitoring of eleven locations in the watershed using the Coliscan EasyGel method.

#### Biological Stream Monitoring

This permit requires the continuance of biological stream monitoring at nine sites across the jurisdiction in order for use in determining the long term effectiveness of the permittee's stormwater program.

#### Floatables Monitoring

This permit requires the continuance of annual surveys to document the effectiveness of litter control programs.

#### Structural and Source Controls Compliance Monitoring and Tracking

This permit requires maintenance of stormwater management facility tracking data and the monitoring of private stormwater management facilities maintenance. This monitoring program is designed to ensure that maintenance is being conducted on privately owned stormwater management facilities.

### **X. Reporting Requirements**

Compliance with this permit will be evaluated on the basis of program progress and results over the reporting periods throughout the life of the permit. This permit refines the reporting requirements to more specifically monitor the effectiveness of the MS4 Program. Given the large number of variables regarding municipal stormwater, it is impractical to expect a chemical monitoring program to demonstrate pollutant load reductions or ambient water quality improvements resulting from MS4 Program implementation during a single permit term. Similarly, it is not possible to evaluate pollutant load reductions, ambient water quality improvements or the overall effectiveness of the program by utilizing only the effectiveness indicators found in this permit.

Reports are to be submitted on an annual basis and to be aligned with the County's fiscal year. The County is required to maintain an MS4 Program Plan that details the County's program and progress including all annual reports and is available for public review.

As appropriate, the Board may specify additional requirements or compliance schedules in order to achieve the level of implementation and progress deemed necessary by the Board to achieve water quality protection and meet the intent of the MS4 permitting program.