

**Virginia Soil and Water Conservation Board  
Stormwater Management Technical Advisory Committee  
August 21, 2007  
Providence Forge, Virginia**

**Technical Advisory Committee Members Present**

Michelle Brickner, Fairfax County  
Alecia Daves-Johnson, Piedmont Soil and Water Conservation District  
Jack E. Frye, Department of Conservation and Recreation  
Shelby T. Hertzler, Rockingham County  
Lee Hill, Department of Conservation and Recreation  
William J. Johnston, City of Virginia Beach  
Joe Lerch, Chesapeake Bay Foundation  
Ved "Wade" Malhotra, City of Newport News  
R.T. "Roy" Mills, Virginia Department of Transportation  
Pat O'Hare, Home Builders Association of Virginia  
Jeff Perry, Henrico County  
David Rundgren, New River Valley PDC  
Alyson Sappington, Thomas Jefferson Soil and Water Conservation District

**Technical Advisory Committee Members Not Present**

Jerry W. Davis, Northern Neck PDC  
Kevin Haile, Loudoun County  
Bob Kerr, Kerr Environmental Services Corporation  
Reginald Parrish, U.S. Environmental Protection Agency  
Phil Schirmer, City of Roanoke  
Gerald Seeley, Jr., Department of Environmental Quality  
Ingrid Stenbjorn, Town of Ashland  
William H. Street, James River Association  
John Tippet, Friends of the Rappahannock

**Facilitator**

Judy Burtner, J. Burtner and Associates

**DCR Staff Present**

Joseph H. Maroon, Director  
C. Scott Crafton, Stormwater Compliance Specialist  
Ryan J. Brown, Assistant Director of Policy and Planning  
Christine Watlington, Policy, Planning and Budget Analyst  
David C. Dowling, Director of Policy, Planning and Budget  
Eric R. Capps, E&S Control and Construction Permitting Manager  
Jim Echols, Urban Programs Compliance Engineer

Michael R. Fletcher, Board and Constituent Services Liaison  
Kevin Landry, Stormwater Compliance Specialist  
Elizabeth Andrews, Office of the Attorney General

**Others Present**

Deva Borah, Woolpert, Inc.  
Barbara Brumbaugh, City of Chesapeake  
Mike Dieter, Hanover County  
Elizabeth Dietzman, Aqualaw  
David Hirschman, Center for Watershed Protection  
Norm Goulet, NRVC  
Gigi Meyer, Golder Associates Inc.  
Ann Saad, Saad Consultants, LLC  
Ridge Schuyler, The Nature Conservancy  
Laura Wheeling, HRPDC

Mr. Dowling opened the meeting. He welcomed members to what is expected to be the final meeting of the Technical Advisory Committee. He expressed appreciation for member input into this process.

Mr. Dowling said that DCR staff had worked to incorporate changes in the draft based on comments received.

Mr. Dowling welcomed DCR Director Joe Maroon to the meeting and deferred to Mr. Maroon for comment.

Mr. Maroon thanked members for their time and effort into the TAC process. He said that while the regulations were not yet perfect, there had been tremendous advancements from the original version. He said that while this was the last meeting of the TAC, it did not mean that the last of the comments have been received.

Mr. Maroon said that DCR staff had taken comments from the TAC and had done an admirable job of trying to address hundreds of questions along the way. He said that the hope was to get the regulations to a point where the TAC could support them.

Mr. Maroon said that DCR was trying to minimize differences. He noted that there would always be areas of disagreement. He said that he hoped members would see why DCR has chosen a particular route.

Mr. Maroon said there had been tremendous advancements in the area of stormwater management over the last three years. He said that, in 2004, that the programs at the state level were managed by three agencies and four state boards.

Mr. Maroon noted that stormwater management was both a federal and state requirement. He said that the issues dealt with by the TAC had moved to the forefront in recent years.

Mr. Maroon said that the Virginia Soil and Water Conservation Board would meet on September 20 and 21 in Richmond. He said that TAC members are welcome to attend and to speak during the public comment section of those meetings.

Mr. Maroon said that from experience, DCR recognizes that when regulations go out for public comment there remains a need to be flexible and to try to address concerns in the final product.

Mr. Maroon turned the meeting back to Mr. Dowling.

Mr. Dowling said that members were provided with a draft of the regulations dated August 20, 2007. A copy of this draft is included as Attachment #1. He said that for the purposes of the meeting, review would begin with Part II and then return to the definitions in Part I.

Mr. Dowling introduced Mr. David Hirschman from the Center for Watershed Protection. Mr. Hirschman was in attendance to address the recommendations of the CWP as well as to answer member questions.

Mr. Dowling turned the meeting over to Mr. Brown for a review of the draft regulations.

Mr. Brown began on Page 18 of the draft.

## **Part II Stormwater Management Program Technical Criteria**

### **4VAC50-60-40. Authority and applicability**

Mr. Brown read this section.

A member said that while the law speaks of the Board's authority to take action regarding state waters, the section regarding regulations did not use that term. The member said that when the term "state waters" is used, it gives the impression to citizens and homeowners that the regulations will deal with groundwater. This is not addressed in the regulations.

A member noted that the Part I definition of "state waters" read as follows:

"State waters" means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.

A member noted that ground water cannot be controlled.

Another member said that it appeared that the section was saying to protect state waters, but not saying that they be protected from a lack of infiltration. The member noted that it seemed to be specific to stormwater runoff.

A member said that it is healthy for citizens to be able to challenge government to see if enough is being done to protect groundwater.

A member of the audience said that regarding groundwater that there are some designs that return groundwater to the ground with no concern for cleaning the water. They are using the ground as the cleaning mechanism. He said the intent should be to protect groundwater from unmanaged runoff.

A member said that controlling volume is difficult. He said that he did not believe the regulations could meet both the groundwater and surface water conditions.

A member suggested leaving the specific definitions to the handbook. He suggested the regulations say “to the maximum extent practicable as allowed in the handbook.”

**4VAC5-60-50.**

This section was repealed.

**4VAC50-60-53.**

A member suggested the removal of the comma following the word “natural.”

**4VAC50-60-56.**

A member noted that there were references in the Erosion and Sediment control regarding channel erosion and that the requirements in the quantity section did not apply that linkage to erosion control.

Mr. Brown said that issue could be discussed under the water quantity section.

**4VAC50-60-63. Water Quality Criteria Requirements**

Under Section A, member suggested that the term “site” be replaced with “planning area.” The member noted that the planning area is defined but not used. The member said that the planning area is different from the site area.

Mr. Dowling read the definition of “site”:

“Site” means the land or water area where any facility or activity is physically located or conducted, a parcel of land being developed, or a designated planning area in which the land development project is located.

The member noted that if there is the option of using the parcel rather than the planning area, if that changes and the full parcel is used, the percent of impervious cover changes.

Mr. Hill said that there needed to be a master plan. The master plan must designate the planning area.

A member said that the percent of impervious cover could be greater based on the percentage of the whole parcel.

Mr. Hill said that on the master plan must delineate the plans for the parcels of a site and that there must be a stormwater management master plan for the planning area.

Mr. Hill gave the example that if 10 acres of a 100-acre site were developed, any future development of the remaining land would be considered redevelopment.

A member said that would create more tracking responsibilities for localities.

Mr. Maroon asked if members had suggested language to address this section.

A member suggested that this be left to the discretion of the local program authority.

Mr. Brown continued the review.

Under subsection A.2 a member said that there were fundamental concerns with using the two different discharge standards. The member said that the dividing line of 40% was problematic. If a subdivision was a 39% impervious, a developer could increase that to 41% and thereby lower the percentage requirement.

Mr. Hirschman said that it was important to think about the whole spectrum of impervious cover. He said the way that the technology table is structured when there is a shift from phosphorus to nitrogen the phosphorus requirement goes down and the nitrogen requirement goes up. He said that different BMPs have different capabilities of removing phosphorus.

Mr. Hirschman said that the rather than debating the numbers the discussion should be about getting the best possible BMP design. He said the number is a way to develop the appropriate BMP. He said that in the table there is a no incentive to go to a higher percentage of impervious cover.

A member said that in discussions DCR and CWP have made it clear that that the restrictions not be so stringent for infill and redevelopment.

A member said that in her locality there are certain restrictions regarding where facilities are located. There are stated numbers and set loading limits.

He said that the intent was to develop a system that would fit within the tributary strategies.

A member expressed concern that these were the numbers that would be used for calculations. He said that he believed engineers would understand that if the level of impervious was at 35% then the need was just to increase that to 41%.

Mr. Crafton said that the system and the technology table were based on relying on the phosphorus standard below 40% and the nitrogen standard above 40%. He said that in the table the aim was for BMP selection in the below 40% range to remove phosphorus removal and above 40% BMPs to meet the nitrogen requirement.

Mr. Crafton said that the thought was that phosphorus is the most important pollutant below 40%.

He asked if it would solve the problem if the regulations only stated a phosphorus standard below 40% and a nitrogen standard above 40%.

A member asked if this meant that below a 40% impervious cover the locality deals with phosphorus and above 40% the locality deals with nitrogen. He asked if that was assuming that the BMP for nitrogen would also handle phosphorus.

Mr. Hirschman said that a removal of a pollutant could be addressed through a computation or through design specifications. He said that research shows that if sediment is being trapped, then phosphorus is as well. He noted that nitrogen was more soluble.

Mr. Hirschman said that it was his opinion that too much time was spent on numbers and not enough on design.

A member asked if the Chesapeake Bay program would have a problem with this approach.

Mr. Brown continued with Subsection A.3.

A member expressed concern that the numbers appeared to be selected at random.

Another member said that it did not appear that there had been enough work with the numbers. The member said there should be controls, but they should not be unreasonable.

A member of the audience suggested that it might be easier to solve issues regarding the technology approach for localities without a comprehensive plan.

Members expressed a desire to remove the numbers from the calculations.

A member said that the purpose of the regulations was to improve water quality and that this approach showed a good intent.

A member said that while the technology approach may not be perfect it was a good starting place.

Ms. Burtner asked if the TAC was agreeable to DCR taking another look at this section.

Mr. Maroon asked the rationale for the numbers being used.

Mr. Capps said the underlying rationale was to try to encourage redevelopment.

Mr. Hill said that the numbers were taken from the tributary strategy calculations.

Mr. Maroon asked if members felt the concept was okay, but that the numbers were problematic.

A member said there is a concern with redevelopment as it allows someone to put down pavement and get credit for removing nitrogen. He said the end effect is to have less pollution by installing more pavement.

A member suggested that on prior developed lands with existing impervious of 40% or greater that credit not be given for increasing the impervious.

A member said there needs to be a way to quantify what redevelopment is.

At this time the committee recessed for a break.

Ms. Burtner asked Mr. Dowling to summarize the previous conversation.

Mr. Dowling said that the two issues the group was leaning toward were adding the phrase "at the discretion of the local program," and that consideration should be given to moving the phosphorus number below 40 and the nitrogen number above 40.

Ms. Burtner asked for a show of cards regarding the phrase "at the discretion of the local government."

The majority of the members said they were either in favor of, or could accept this language.

On the second issue Ms. Burtner asked for a show of cards regarding moving the phosphorus standard below 40% and the nitrogen standard above 40%.

The majority of the members said they were either in favor of, or could accept this language.

Ms. Burtner asked about the redevelopment issue and the definition of prior development.

A member said that prior development should start with the percentage of impervious cover. The issue would be what percent.

Mr. Maroon asked if there was a commonly used definition for the percent of developed land.

A member noted that DCR had previously designed the standard at 16%.

Mr. Hill said that at 16% there are changes in the watershed. He said that was the average land cover in the Chesapeake Bay Act area.

Mr. Crafton said that when the Bay Act program began, 16% was the average impervious cover in the Chesapeake Bay Watershed.

A member suggested that rather than a percentage there be areas designated for redevelopment similar to the IDAs for local governments.

A member suggested leaving the percentage up to the locality.

Mr. Dowling said the language could allow for localities to have designated areas for urban development.

A member asked about the areas where DCR would be running the program.

Mr. Crafton asked if 40% remained the breakpoint and that everything below that amount was required to use the phosphorus standard if that would be a disincentive towards redevelopment.

Mr. Hill said that the language could be changed to say the intent is to reduce the post development load.

It was noted that would be consistent with the prior approach.

A member suggested removing the reference to prior development.

Mr. Brown moved on to Subsection A.4.

There were no suggested changes to the remainder of this section.

At this time the committee recessed for lunch.

Mr. Brown continued with Subsection B.

Mr. Brown noted that language regarding plan approval needed to be consistent.

Mr. Brown continued with Subsection C.

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A member asked how this section worked with the technology based approach.

Mr. Crafton said that at the beginning of the process, a BMP is applied to an area that has acreage. A certain portion of the load is removed.

Mr. Hirschman said that could be accomplished by calculating the load, but if there was a similar sized area, removal efficiencies could be used.

Mr. Brown moved on to Subsection D.

A member asked if the references to the handbook were for what is currently in the handbook or what will be added to the handbook.

Mr. Crafton said that the handbook revisions would incorporate the revisions in the regulations.

#### **4VAC50-60-65. Water Quality Compliance**

Mr. Brown read subsection A.

A member asked if the language could be changed to say the local program will require technology and/or the performance based criteria to be achieved.

Mr. Brown read subsection B.

Members indicated there was confusion regarding the technology based approach under this section.

Mr. Hill said that staff would again look at this section. A member said this might be a good section to refer to the handbook.

A member said it needs to be clear that the entire site does not need to be treated, but that the treatment cannot be limited to ten percent.

Ms. Burtner clarified that staff will review that section for clarity.

Mr. Brown continued with Subsection C.

There were no suggested changes to this section.

At this time the committee recessed for a break.

Following the break, Mr. Brown continued with the review of the draft.

#### **4VAC50-60-66 Water Quantity**

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A member questioned the references to BMPs addressing quality and quantity and the distinctions noted.

Mr. Crafton said the notes were to recognize not only the BMPs that treat water but also those that get the volume back into the ground. He noted that was different from LID credits.

A member asked if that would mean LID would be quality control.

Mr. Crafton said that when LID practices are applied to runoff equations, those kinds of things are self-crediting.

A member said that consideration should be given to BMPs that address the quality and quantity of stormwater runoff.

Mr. Hill suggested it would be best just to remove that notation.

Mr. Brown continued with Subsection B.

Mr. Dowling noted that there had been numerous discussions with the environmental community that not enough had been done with regard to the quantity side. He said that the last comment received suggested that the locality be given the opportunity to define what "as nearly as practicable" is.

A member expressed concern that the TAC was not familiar with the contents of the handbook.

Mr. Dowling explained that from the beginning the proposal was to develop the handbook and the regulations simultaneously. He said that process has not varied.

Mr. Dowling said that the final regulation would not move forward until the handbook and clearinghouse are substantially done or complete.

Mr. Dowling noted that if the regulations go to the Board in September, they would not be available for public review and comment for six to eight months after that. DCR will still have to compose the discussion packages as well as review the economic impact.

Mr. Dowling said that he did not anticipate the regulations becoming public before sometime in the spring.

A member said that there is a discomfort for the TAC in that there is not another time to fully comment. The member said the discomfort is with moving ahead and not knowing the content of the handbook.

Mr. Dowling said the process would continue to move forward. He said that one of the next steps is the development of checklists for BMP designs.

Mr. Brown continued with the review by reading Subsection C.

A member asked why geotechnical investigations were included.

A member suggested that the document could say as necessary by the plan reviewer.

#### **4VAC50-60-70. Stream channel erosion**

This section was repealed.

#### **4VAC50-60-73. Design storms**

A member noted that with the new atlas, the rainfalls have changed.

It was suggested that the reference to NRCS remain, but that NOAA be added.

#### **4VAC50-60-76. Linear Development Projects**

A member asked about the definition of linear development project.

It was noted that stream restoration might include channel restoration.

#### **4VAC50-60-80. Flooding**

This section was repealed.

#### **4VAC50-60-83. Stormwater management impoundment structures or facilities**

Under subsection E, a member asked how the area for geological study was defined.

Mr. Crafton said that the issue related to discharge into karst features.

#### **4VAC50-60-86. Riparian buffers**

A member asked how a stream could be used as an outfall during construction without disturbing the buffer.

Mr. Hill said that the Stormwater Management plan had to show that the developer was minimizing the impact.

A member said that riparian buffers should have LID credits but should not be a requirement.

A member said that by definition, a riparian buffer is adjacent to a perennial stream. The member asked if since there could be LID credit for a riparian buffer if that mean that there could be no LID credit for buffers on intermittent streams.

**4VAC50-60-90. Regional (watershed-wide) stormwater management plans**

This section was repealed.

**4VAC50-60-96. Comprehensive watershed stormwater management plan**

A member said that this section should be reviewed in light of the earlier discussion regarding technical criteria.

A member asked if all changes needed to be approved by the Board.

A member asked why state and federal programs do not have comply.

Mr. Crafton said it was an issue of authority. Local governments do not have authority over state lands. The state has no authority over federal lands.

A member said that it is best for the watershed if state and federal agencies comply with the comprehensive program.

Mr. Dowling said staff would review that section.

Mr. Dowling again thanked members for their participation. He said that DCR was aware there were issues to address.

Mr. Dowling said that, at this point, the intent would still be to take the regulations to the Board at their September meeting. He said that prior to that date another draft would be distributed to TAC members.

Mr. Dowling said that DCR would keep TAC members informed of the process.

The meeting was adjourned.

Attachment #1

## CHAPTER 60

# VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS

### Part I

#### 4VAC50-60-10. Definitions.

The following words and terms used in this chapter have the following meanings unless the context clearly indicates otherwise.

"Adequate channel" means a ~~channel~~ watercourse that will convey the designated frequency storm event without overtopping ~~the channel bank nor its banks or~~ causing erosive damage to the ~~channel-bed, or banks and overbank sections of the same.~~

"Administrator" means the Administrator of the United States Environmental Protection Agency or an authorized representative.

"Applicable standards and limitations" means all state, interstate, and federal standards and limitations to which a discharge or a related activity is subject under the Clean Water Act (CWA) (33 USC §1251 et seq.) and the Act, including effluent limitations, water quality standards, standards of performance, toxic effluent standards or prohibitions, best management practices, and standards for sewage sludge use or disposal under §§301, 302, 303, 304, 306, 307, 308, 403 and 405 of CWA.

"Approval authority" means the Virginia Soil and Water Conservation Board or their designee.

"Approved program" or "approved state" means a state or interstate program that has been approved or authorized by EPA under 40 CFR Part 123 (2000).

~~"Aquatic bench" means a 10 to 15 foot wide bench around the inside perimeter of a permanent pool that ranges in depth from zero to 12 inches. Vegetated with emergent plants, the bench augments pollutant removal, provides habitats, conceals trash and water level fluctuations, and enhances safety.~~

~~"Average land cover condition" means a measure of the average amount of impervious surfaces within a watershed, assumed to be 16%. Note that a locality may opt to calculate actual watershed specific values for the average land cover condition based upon 4VAC50-60-110.~~

"Average monthly discharge limitation" means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

"Average weekly discharge limitation" means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

"Best management practice (~~BMP~~)" or "BMP" means schedules of activities, prohibitions of practices, including both a structural or nonstructural practice,

maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

~~"Bioretention basin" means a water quality BMP engineered to filter the water quality volume through an engineered planting bed, consisting of a vegetated surface layer (vegetation, mulch, ground cover), planting soil, and sand bed, and into the in-situ material.~~

~~"Bioretention filter" means a bioretention basin with the addition of a sand filter collector pipe system beneath the planting bed.~~

"Board" means the Virginia Soil and Water Conservation Board.

"Buffer management plan" means a plan developed by a qualifying local program that outlines how riparian buffers adjacent to perennial streams or streams with a watershed area greater than 50 acres in size will be maintained, established, or both on development and redevelopment sites.

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

"Channel" means a natural or manmade waterway with defined bed and banks that conducts continuously or periodically flowing water.

~~"Constructed wetlands" means areas intentionally designed and created to emulate the water quality improvement function of wetlands for the primary purpose of removing pollutants from stormwater.~~

"Comprehensive stormwater management plan" means a plan, which may be integrated with other land use plans or regulations, that specifies how the water quality and quantity components of stormwater are to be managed on the basis of an entire watershed or a portion thereof. The plan may also provide for the remediation of erosion, flooding, and water quality and quantity problems caused by prior development.

"Construction activity" means any clearing, grading, or excavation associated with large construction activity or associated with small construction activity.

"Contiguous zone" means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone (37 FR 11906).

"Continuous discharge" means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

"Control measure" means any best management practice or other method used to prevent or reduce the discharge of pollutants to surface waters.

"Co-permittee" means a permittee to a VSMP permit that is only responsible for permit conditions relating to the discharge for which it is the operator.

"Clean Water Act" or "CWA" means the federal Clean Water Act (33 USC §1251 et seq.), formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, or any subsequent revisions thereto.

"CWA and regulations" means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. For the purposes of this chapter, it includes state program requirements.

"Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

"Department" means the Department of Conservation and Recreation.

"Development" means ~~a tract of land developed or to be developed as a unit under single ownership or unified control which is to be used for any business or industrial purpose or is to contain three or more residential dwelling units~~ land disturbance and the resulting landform associated with the construction of residential, commercial, industrial, institutional, recreation, transportation or utility facilities or structures.

"Direct discharge" means the discharge of a pollutant.

"Director" means the Director of the Department of Conservation and Recreation or his designee.

"Discharge," when used without qualification, means the discharge of a pollutant.

"Discharge of a pollutant" means:

1. Any addition of any pollutant or combination of pollutants to surface waters from any point source; or
2. Any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into surface waters from: surface runoff that is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any indirect discharger.

"Discharge Monitoring Report (DMR)" means the form supplied by the department, or an equivalent form developed by the permittee and approved by the board, for the reporting of self-monitoring results by permittees.

"Draft permit" means a document indicating the board's tentative decision to issue or deny, modify, revoke and reissue, terminate, or reissue a permit. A notice of intent to terminate a permit, and a notice of intent to deny a permit are types of draft permits. A denial of a request for modification, revocation and reissuance, or termination is not a draft permit. A proposed permit is not a draft permit.

"Effluent limitation" means any restriction imposed by the board on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into surface waters, the waters of the contiguous zone, or the ocean.

"Effluent limitations guidelines" means a regulation published by the administrator under §304(b) of the CWA to adopt or revise effluent limitations.

"Environmental Protection Agency (EPA)" means the United States Environmental Protection Agency.

"Event mean concentration" or "EMC" means the total mass load of a pollutant parameter divided by the total runoff water volume discharged during an individual storm event.

"Existing permit" means for the purposes of this chapter a permit issued by the permit-issuing authority and currently held by a permit applicant.

"Existing source" means any source that is not a new source or a new discharger.

"Facilities or equipment" means buildings, structures, process or production equipment or machinery that form a permanent part of a new source and that will be used in its operation, if these facilities or equipment are of such value as to represent a substantial commitment to construct. It excludes facilities or equipment used in connection with feasibility, engineering, and design studies regarding the new source or water pollution treatment for the new source.

"Facility or activity" means any VSMP point source or treatment works treating domestic sewage or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the VSMP program.

"Flooding" means a volume of water that is too great to be confined within the banks or walls of the stream, water body or conveyance system and that overflows onto adjacent lands, causing or threatening damage.

"General permit" means a VSMP permit authorizing a category of discharges under the CWA and the Act within a geographical area.

~~"Grassed swale" means an earthen conveyance system which is broad and shallow with erosion resistant grasses and check dams, engineered to remove pollutants from stormwater runoff by filtration through grass and infiltration into the soil.~~

"Hazardous substance" means any substance designated under the Code of Virginia and 40 CFR Part 116 (2000) pursuant to §311 of the CWA.

"Hydrologic Unit Code" or "HUC" means watershed units established in the most recent version of Virginia's 6<sup>th</sup> Order National Watershed Boundary Dataset.

"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to a VPDES or VSMP permit (other than the VSMP permit for discharges from the municipal separate storm sewer), discharges resulting from fire fighting activities, and discharges identified by and in compliance with 4VAC50-60-1220 C 2.

"Impervious cover" means a surface composed of any material that significantly impedes or prevents natural infiltration of water into soil. Impervious surfaces include, but are not limited to, roofs, buildings, streets, parking areas, and any concrete, asphalt, or compacted gravel surface.

"Incorporated place" means a city, town, township, or village that is incorporated under the Code of Virginia.

"Indian country" means (i) all land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; (ii) all dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (iii) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.



~~"Individual control strategy" means a final VSMP permit with supporting documentation showing that effluent limits are consistent with an approved wasteload allocation or other documentation that shows that applicable water quality standards will be met not later than three years after the individual control strategy is established.~~

~~"Infiltration facility" means a stormwater management facility that temporarily impounds runoff and discharges it via infiltration through the surrounding soil. While an infiltration facility may also be equipped with an outlet structure to discharge impounded runoff, such discharge is normally reserved for overflow and other emergency conditions. Since an infiltration facility impounds runoff only temporarily, it is normally dry during nonrainfall periods. Infiltration basin, infiltration trench, infiltration dry well, and porous pavement shall be considered infiltration facilities.~~

"Inspection" means an on-site review of the project's compliance with the permit, the local stormwater management program, and any applicable design criteria, or an on-site review to obtain information or conduct surveys or investigations necessary in the enforcement of the Act and this chapter.

"Interstate agency" means an agency of two or more states established by or under an agreement or compact approved by Congress, or any other agency of two or more states having substantial powers or duties pertaining to the control of pollution as determined and approved by the administrator under the CWA and regulations.

"Karst features" means sinkholes, sinking and losing streams, caves, large flow springs, and other such landscape features found in karst areas.

"Land disturbance" or "land-disturbing activity" means a manmade change to the land surface that potentially changes its runoff characteristics including any clearing, grading, or excavation associated with a construction activity regulated pursuant to the federal Clean Water Act, the Act, and this chapter.

"Large construction activity" means construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than five acres of total land area. Large construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more.

"Large municipal separate storm sewer system" means all municipal separate storm sewers that are either:

1. Located in an incorporated place with a population of 250,000 or more as determined by the latest decennial census by the Bureau of Census (40 CFR Part 122 Appendix F (2000));
2. Located in the counties listed in 40 CFR Part 122 Appendix H (2000), except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties;
3. Owned or operated by a municipality other than those described in subdivision 1 or 2 of this definition and that are designated by the board as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under subdivision 1 or 2 of this definition. In making this determination the board may consider the following factors:
  - a. Physical interconnections between the municipal separate storm sewers;

- b. The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in subdivision 1 of this definition;
  - c. The quantity and nature of pollutants discharged to surface waters;
  - d. The nature of the receiving waters; and
  - e. Other relevant factors.
4. The board may, upon petition, designate as a large municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a stormwater management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in this definition.

"Linear development project" means a land-disturbing activity that is linear in nature such as, but not limited to, (i) the construction of electric and telephone utility lines, and natural gas pipelines; (ii) construction of tracks, rights-of-way, bridges, communication facilities and other related structures of a railroad company; ~~and~~ (iii) highway construction projects; and (iv) construction of stormwater channels. Private subdivision roads or streets and stream restoration activities shall not be considered linear development projects.

"Local stormwater management program" or "local program" means ~~a statement of the various methods employed by a locality or the Department to manage the quality and quantity of runoff resulting from land-disturbing activities and shall include such items as local ordinances, permit requirements, policies and guidelines, technical materials, plan review, inspection, enforcement, and evaluation consistent with the Act and this chapter. The ordinance shall include provisions to require the control of after-development stormwater runoff rate of flow, the proper maintenance of stormwater management facilities, and minimum administrative procedures.~~

"Locality" means a county, city, or town.

"Low Impact Development" or "LID" means a design strategy with the goal of maintaining or replicating the pre-development hydrologic regime through the use of design techniques to create a functionally equivalent hydrologic site design. Hydrologic functions of storage, infiltration and ground water recharge, as well as the volume and frequency of discharges are maintained through the use of integrated and distributed micro-scale stormwater retention and detention areas, reduction of impervious surfaces, and the lengthening of runoff flow paths and flow time. Other strategies include the preservation/protection of environmentally sensitive site features such as riparian buffers, wetlands, steep slopes, valuable (mature) trees, flood plains, woodlands, and highly permeable soils.

"Major facility" means any VSMP facility or activity classified as such by the regional administrator in conjunction with the board.

"Major modification" means, for the purposes of this chapter, the modification or amendment of an existing permit before its expiration that is not a minor modification as defined in this regulation.

"Major municipal separate storm sewer outfall (or major outfall)" means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for

municipal separate storm sewers that receive stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), with an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of two acres or more).

"Manmade" means constructed by man.

"Maximum daily discharge limitation" means the highest allowable daily discharge.

"Medium municipal separate storm sewer system" means all municipal separate storm sewers that are either:

1. Located in an incorporated place with a population of 100,000 or more but less than 250,000 as determined by the latest decennial census by the Bureau of Census (40 CFR Part 122 Appendix G (2000));

2. Located in the counties listed in 40 CFR Part 122 Appendix I (2000), except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties;

3. Owned or operated by a municipality other than those described in subdivision 1 or 2 of this definition and that are designated by the board as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under subdivision 1 or 2 of this definition. In making this determination the board may consider the following factors:

- a. Physical interconnections between the municipal separate storm sewers;
- b. The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in subdivision 1 of this definition;
- c. The quantity and nature of pollutants discharged to surface waters;
- d. The nature of the receiving waters; or
- e. Other relevant factors.

4. The board may, upon petition, designate as a medium municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a stormwater management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in subdivisions 1, 2 and 3 of this definition.

"Minor modification" means, for the purposes of this chapter, minor modification or amendment of an existing permit before its expiration as specified in 4VAC50-60-640. Minor modification for the purposes of this chapter also means other modifications and amendments not requiring extensive review and evaluation including, but not limited to, changes in EPA promulgated test protocols, increasing monitoring frequency requirements, changes in sampling locations, and changes to compliance dates within the overall compliance schedules. A minor permit modification or amendment does not substantially alter permit conditions, substantially increase or decrease the amount of surface water impacts, increase the size of the operation, or reduce the capacity of the facility to protect human health or the environment.

"Municipal separate storm sewer" means a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system, including roads with

drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains:

1. Owned or operated by a federal, state, city, town, county, district, association, or other public body, created by or pursuant to state law, having jurisdiction or delegated authority for erosion and sediment control and stormwater management, or a designated and approved management agency under §208 of the CWA that discharges to surface waters;

2. Designed or used for collecting or conveying stormwater;

3. That is not a combined sewer; and

4. That is not part of a publicly owned treatment works.

"Municipal separate storm sewer system" or "MS4" means all separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems or designated under 4VAC50-60-380 A 1.

"Municipal Separate Storm Sewer System Management Program" means a management program covering the duration of a permit for a municipal separate storm sewer system that includes a comprehensive planning process that involves public participation and intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable, using management practices, control techniques, and system, design and engineering methods, and such other provisions that are appropriate.

"Municipality" means a city, town, county, district, association, or other public body created by or under state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under §208 of the CWA.

"National Pollutant Discharge Elimination System (~~NPDES~~)" or "NPDES" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under §§307, 402, 318, and 405 of the CWA. The term includes an approved program.

"New discharger" means any building, structure, facility, or installation:

1. From which there is or may be a discharge of pollutants;

2. That did not commence the discharge of pollutants at a particular site prior to August 13, 1979;

3. Which is not a new source; and

4. Which has never received a finally effective VPDES or VSMP permit for discharges at that site.

This definition includes an indirect discharger that commences discharging into surface waters after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a site for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979.

"New permit" means, for the purposes of this chapter, a permit issued by the permit-issuing authority to a permit applicant that does not currently hold and has never held a permit of that type, for that activity, at that location.

"New source," means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

1. After promulgation of standards of performance under §306 of the CWA that are applicable to such source; or
2. After proposal of standards of performance in accordance with §306 of the CWA that are applicable to such source, but only if the standards are promulgated in accordance with §306 of the CWA within 120 days of their proposal.

"Nonpoint source pollution" means pollution such as sediment, nitrogen and phosphorous, hydrocarbons, heavy metals, and toxics whose sources cannot be pinpointed but rather are washed from the land surface in a diffuse manner by stormwater runoff.

"Nonpoint source pollutant runoff load" or "pollutant discharge" means the average amount of a particular pollutant measured in pounds per year, delivered in a diffuse manner by stormwater runoff.

"Operator" means the owner or operator of any facility or activity subject to regulation under the VSMP program. In the context of stormwater associated with a large or small construction activity, operator means any person associated with a construction project that meets either of the following two criteria: (i) the person has direct operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications or (ii) the person has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a stormwater pollution prevention plan for the site or other permit conditions (i.e., they are authorized to direct workers at a site to carry out activities required by the stormwater pollution prevention plan or comply with other permit conditions).

"Outfall" means, when used in reference to municipal separate storm sewers, a point source at the point where a municipal separate storm sewer discharges to surface waters and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other surface waters and are used to convey surface waters.

"Overburden" means any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil or similar naturally occurring surface materials that are not disturbed by mining operations.

"Owner" means the Commonwealth or any of its political subdivisions including, but not limited to, sanitation district commissions and authorities, and any public or private institution, corporation, association, firm or company organized or existing under the laws of this or any other state or country, or any officer or agency of the United States, or any person or group of persons acting individually or as a group that owns, operates, charters, rents, or otherwise exercises control over or is responsible for any actual or potential discharge of sewage, industrial wastes, or other wastes to state waters, or any facility or operation that has the capability to alter the physical, chemical, or biological properties of state waters in contravention of §62.1-44.5 of the Code of Virginia, the Act and this chapter.

"Percent impervious" means the impervious area within the site divided by the area of the site multiplied by 100.

"Perennial stream" means, for the purposes of this chapter, a body of water that flows in a well defined natural or manmade channel year-round during a year of normal

precipitation, where the water table is generally located above the streambed for most of the year and groundwater is the primary source for stream flow. This includes, but is not limited to streams, estuaries, and tidal embayments and may include drainage ditches or channels constructed in wetlands or from former natural drainageways, which convey perennial flow. Lakes and ponds, through which a perennial stream flows, are a part of the perennial stream. A perennial stream exhibits the typical biological, hydrological, and physical characteristics commonly associated with the continuous conveyance of water. This definition shall not include roadside drainage ditches in public rights-of-way or easements.

"Permit" means an approval issued by the permit-issuing authority for the initiation of a land-disturbing activity or for stormwater discharges from an MS4. Permit does not include any permit that has not yet been the subject of final permit-issuing authority action, such as a draft permit or a proposed permit.

"Permit-issuing authority" means the board, the department, or a locality with a qualifying local program ~~that is delegated authority authorized by the board to issue, deny, revoke, terminate, or amend stormwater permits under the provisions of the Act and this chapter.~~

"Permittee" means the person or locality to which the permit is issued, including any operator whose construction site is covered under a construction general permit.

"Person" means any individual, corporation, partnership, firm, association, ~~joint venture, public or private or municipal corporation, trust, estate, state, municipality, commission, board, public or private institution, utility, cooperative, county, city, town or other political subdivision of the Commonwealth, any a state, governmental body, any interstate or governmental body or any other legal entity.~~

"Planning area" means a designated portion of the parcel on which the land development project is located. Planning areas shall be established by delineation on a master plan. Once established, planning areas shall be applied consistently for all future projects. In addition to the delineation on the master plan for the parcel, a stormwater master plan is required for the planning area.

"Point source" means any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant" means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 USC §2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

1. Sewage from vessels; or
2. Water, gas, or other material that is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well if the well used either to facilitate production or for disposal purposes is

approved by the board and if the board determines that the injection or disposal will not result in the degradation of ground or surface water resources.

"Pollution" means such alteration of the physical, chemical or biological properties of any state waters as will or is likely to create a nuisance or render such waters (a) harmful or detrimental or injurious to the public health, safety or welfare, or to the health of animals, fish or aquatic life; (b) unsuitable with reasonable treatment for use as present or possible future sources of public water supply; or (c) unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses, provided that (i) an alteration of the physical, chemical, or biological property of state waters, or a discharge or deposit of sewage, industrial wastes or other wastes to state waters by any owner which by itself is not sufficient to cause pollution, but which, in combination with such alteration of or discharge or deposit to state waters by other owners, is sufficient to cause pollution; (ii) the discharge of untreated sewage by any owner into state waters; and (iii) contributing to the contravention of standards of water quality duly established by the State Water Control Board, are "pollution" for the terms and purposes of this chapter.

"Post-development" refers to conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land.

"Pre-development" refers to the conditions that exist at the time that plans for the land development of a tract of land are approved by the plan approval authority. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first item being approved or permitted shall establish pre-development conditions.

"Prior developed lands" means land that has been previously disturbed for development.

"Privately owned treatment works (~~PVOTW~~)" or "PVOTW" means any device or system that is (i) used to treat wastes from any facility whose operator is not the operator of the treatment works and (ii) not a POTW.

"Proposed permit" means a VSMP permit prepared after the close of the public comment period (and, when applicable, any public hearing and administrative appeals) that is sent to EPA for review before final issuance. A proposed permit is not a draft permit.

"Publicly owned treatment works (~~POTW~~)" or "POTW" means a treatment works as defined by §212 of the CWA that is owned by a state or municipality (as defined by §502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW treatment plant. The term also means the municipality as defined in §502(4) of the CWA, that has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

"Qualifying local stormwater management program" or "qualifying local program" means a local program that is administered by a locality that has been authorized by the board to issue coverage under the VSMP General Permit for Discharges of Stormwater from Construction Activities (4 VAC 50-60-1170).

"Recommencing discharger" means a source that recommences discharge after terminating operations.

"Regional administrator" means the Regional Administrator of Region III of the Environmental Protection Agency or the authorized representative of the regional administrator.

~~"Regional (watershed wide) stormwater management facility" or "regional facility" means a facility or series of facilities designed to control stormwater runoff from a specific watershed, although only portions of the watershed may experience land development.~~

~~"Regional (watershed wide) stormwater management plan" or "regional plan" means a document containing material describing how runoff from open space, existing development and future planned development areas within a watershed will be controlled by coordinated design and implementation of regional stormwater management facilities.~~

"Revoked permit" means, for the purposes of this chapter, an existing permit that is terminated by the board before its expiration.

"Riparian buffer" means an area of trees, shrubs, grasses, or a combination thereof, that is (i) at least thirty-five feet in width, (ii) adjacent to perennial streams, (iii) managed to maintain the integrity of those stream channels and shorelines, and (iv) reduces the effects of upland sources of pollution through the infiltration of runoff and filtering of pollutants. A managed lawn does not constitute a riparian buffer. The riparian buffer is measured landward (horizontal distance) from the top of the stream bank at bankfull elevation on both sides of the stream.

"Runoff coefficient" means the fraction of total rainfall that will appear at a conveyance as runoff.

"Runoff" or "stormwater runoff" means that portion of precipitation that is discharged across the land surface or through conveyances to one or more waterways.

"Runoff characteristics" include, but are not limited to velocity, peak flow rate, volume, and time of concentration, and their influence on channel morphology such as sinuosity, channel cross-sectional area, and channel slope.

~~"Sand filter" means a contained bed of sand that acts to filter the first flush of runoff. The runoff is then collected beneath the sand bed and conveyed to an adequate discharge point or infiltrated into the in-situ soils.~~

"Schedule of compliance" means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the Act, the CWA and regulations.

"Secretary" means the Secretary of the Army, acting through the Chief of Engineers.

"Severe property damage" means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

~~"Shallow marsh" means a zone within a stormwater extended detention basin that exists from the surface of the normal pool to a depth of six to 18 inches, and has a large surface area and, therefore, requires a reliable source of baseflow, groundwater supply, or~~



~~a sizeable drainage area, to maintain the desired water surface elevations to support emergent vegetation.~~

"Significant materials" means, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under §101(14) of CERCLA (42 USC §9601(14)); any chemical the facility is required to report pursuant to §313 of Title III of SARA (42 USC §11023); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

"Single jurisdiction" means, for the purposes of this chapter, a single county or city. The term county includes incorporated towns which are part of the county.

"Site" means the land or water area where any facility or activity is physically located or conducted, a parcel of land being developed, or a designated planning area in which the land development project is located.

"Site hydrology" means the movement of water on and off the site as determined by parameters including, but not limited to, soil types, soil permeability, vegetative cover, seasonal water tables, slopes, and impervious cover.

"Small construction activity" means:

1. Construction activities including clearing, grading, and excavating that results in land disturbance of equal to or greater than one acre, or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act, and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. The board may waive the otherwise applicable requirements in a general permit for a stormwater discharge from construction activities that disturb less than five acres where stormwater controls are not needed based on a "total maximum daily load" (TMDL) approved or established by EPA that addresses the pollutant(s) of concern or, for nonimpaired waters that do not require TMDLs, an equivalent analysis that determines allocations for small construction sites for the pollutant(s) of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. For the purpose of this subdivision, the pollutant(s) of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the board that the construction activity will take place, and stormwater discharges will occur, within the drainage area addressed by the TMDL or equivalent analysis.

2. Any other construction activity designated by the either the board or the EPA regional administrator, based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to surface waters.

"Small municipal separate storm sewer system" or "small MS4" means all separate storm sewers that are (i) owned or operated by the United States, a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under §208 of the CWA that discharges to surface waters and (ii) not defined as "large" or "medium" municipal separate storm sewer systems or designated under 4VAC50-60-380 A 1. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highway and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

"Source" means any building, structure, facility, or installation from which there is or may be a discharge of pollutants.

"State" means the Commonwealth of Virginia.

"State/EPA agreement" means an agreement between the regional administrator and the state that coordinates EPA and state activities, responsibilities and programs including those under the CWA and the Act.

"State project" means any land development project that is undertaken by any state agency, board, commission, authority or any branch of state government, including state-supported institutions of higher learning.

"State Water Control Law" means Chapter 3.1 (§62.1-44.2 et seq.) of Title 62.1 of the Code of Virginia.

"State waters" means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.

"Stormwater" means precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

~~"Stormwater detention basin" or "detention basin" means a stormwater management facility that temporarily impounds runoff and discharges it through a hydraulic outlet structure to a downstream conveyance system. While a certain amount of outflow may also occur via infiltration through the surrounding soil, such amounts are negligible when compared to the outlet structure discharge rates and are, therefore, not considered in the facility's design. Since a detention facility impounds runoff only temporarily, it is normally dry during nonrainfall periods.~~

"Stormwater discharge associated with construction activity" means a discharge of pollutants in stormwater runoff from areas where land-disturbing activities (e.g., clearing, grading, or excavation); construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck washout, fueling); or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

"Stormwater discharge associated with large construction activity" means the discharge of stormwater from large construction activities.

"Stormwater discharge associated with small construction activity" means the discharge of stormwater from small construction activities.

~~"Stormwater extended detention basin" or "extended detention basin" means a stormwater management facility that temporarily impounds runoff and discharges it through a hydraulic outlet structure over a specified period of time to a downstream conveyance system for the purpose of water quality enhancement or stream channel erosion control. While a certain amount of outflow may also occur via infiltration through the surrounding soil, such amounts are negligible when compared to the outlet structure discharge rates and, therefore, are not considered in the facility's design. Since an extended detention basin impounds runoff only temporarily, it is normally dry during nonrainfall periods.~~

~~"Stormwater extended detention basin enhanced" or "extended detention basin enhanced" means an extended detention basin modified to increase pollutant removal by providing a shallow marsh in the lower stage of the basin.~~

"Stormwater management facility" means a device that controls stormwater runoff and changes the characteristics of that runoff including, but not limited to, the quantity and quality, the period of release or the velocity of flow.

"Stormwater management plan" means a document(s) containing material for describing how existing runoff characteristics will be maintained by a land-disturbing activity and methods for complying with the requirements of the local program or this chapter.

"Stormwater Management Program" means a program established by a locality that is consistent with the requirements of the Virginia Stormwater Management Act, this chapter and associated guidance documents.

"Stormwater management standards" means the minimum criteria for stormwater management programs and land-disturbing activities as set out in Part II of these regulations.

"Stormwater Pollution Prevention Plan" (SWPPP) or "~~plan~~ SWPPP" means a document that is prepared in accordance with good engineering practices and that identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the construction site or its associated land-disturbing activities. In addition the document shall describe and ensure the implementation of best management practices, and shall include, but not be limited to the inclusion of, or the incorporation by reference of, an erosion and sediment control plan, a post-construction stormwater management plan, a spill prevention control and countermeasure (SPCC) plan, and other practices that will be used to reduce pollutants in stormwater discharges from land-disturbing activities and to assure compliance with the terms and conditions of this chapter. All plans incorporated by reference into the SWPPP shall be enforceable under the permit issued.

~~"Stormwater retention basin" or "retention basin" means a stormwater management facility that includes a permanent impoundment, or normal pool of water, for the purpose of enhancing water quality and, therefore, is normally wet, even during nonrainfall periods. Storm runoff inflows may be temporarily stored above this permanent impoundment for the purpose of reducing flooding, or stream channel erosion.~~

~~"Stormwater retention basin I" or "retention basin I" means a retention basin with the volume of the permanent pool equal to three times the water quality volume.~~

~~"Stormwater retention basin II" or "retention basin II" means a retention basin with the volume of the permanent pool equal to four times the water quality volume.~~

~~"Stormwater retention basin III" or "retention basin III" means a retention basin with the volume of the permanent pool equal to four times the water quality volume with the addition of an aquatic bench.~~

"Subdivision" means the same as defined in §15.2-2201 of the Code of Virginia.

"Surface waters" means:

1. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
  - a. That are or could be used by interstate or foreign travelers for recreational or other purposes;
  - b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - c. That are used or could be used for industrial purposes by industries in interstate commerce.
4. All impoundments of waters otherwise defined as surface waters under this definition;
5. Tributaries of waters identified in subdivisions 1 through 4 of this definition;
6. The territorial sea; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in subdivisions 1 through 6 of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA and the law, are not surface waters. Surface waters do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other agency, for the purposes of the Clean Water Act, the final authority regarding the Clean Water Act jurisdiction remains with the EPA.

"Total dissolved solids" means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR Part 136 (2000).

"Toxic pollutant" means any pollutant listed as toxic under §307(a)(1) of the CWA or, in the case of sludge use or disposal practices, any pollutant identified in regulations implementing §405(d) of the CWA.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

"Variance" means any mechanism or provision under §301 or §316 of the CWA or under 40 CFR Part 125 (2000), or in the applicable effluent limitations guidelines that allows modification to or waiver of the generally applicable effluent limitation

requirements or time deadlines of the CWA. This includes provisions that allow the establishment of alternative limitations based on fundamentally different factors or on §301(c), §301(g), §301(h), §301(i), or §316(a) of the CWA.

~~"Vegetated filter strip" means a densely vegetated section of land engineered to accept runoff as overland sheet flow from upstream development. It shall adopt any natural vegetated form, from grassy meadow to small forest. The vegetative cover facilitates pollutant removal through filtration, sediment deposition, infiltration and absorption, and is dedicated for that purpose.~~

"Virginia Pollutant Discharge Elimination System (VPDES) permit" or "VPDES permit" means a document issued by the State Water Control Board pursuant to the State Water Control Law authorizing, under prescribed conditions, the potential or actual discharge of pollutants from a point source to surface waters and the use or disposal of sewage sludge.

"Virginia Stormwater Management Act" or "Act" means Article 1.1 (§ 10.1-603.1 et seq.) of Chapter 6 of Title 10.1 of the Code of Virginia.

"Virginia Stormwater BMP Clearinghouse website" means a website that contains detailed design standards and specifications for BMPs that may be used in Virginia to comply with requirements of the Virginia Stormwater Management Act and associated regulations and that is jointly created by the Department and the Virginia Water Resources Research Center subject to advice from a permanent stakeholder advisory committee.

"Virginia Stormwater Management Handbook" means a collection of pertinent information that provides general guidance for compliance with the Virginia Stormwater Management Act and associated regulations and is developed by the Department with advice from a stakeholder advisory committee.

"Virginia Stormwater Management Program (VSMP)" means the Virginia program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing requirements pursuant to the federal Clean Water Act, the Virginia Stormwater Management Act, this chapter, and associated guidance documents.

"Virginia Stormwater Management Program (VSMP) permit" means a document issued by the permit-issuing authority pursuant to the Virginia Stormwater Management Act and this chapter authorizing, under prescribed conditions, the potential or actual discharge of pollutants from a point source to surface waters. Under the approved state program, a VSMP permit is equivalent to a NPDES permit.

"VSMP application" or "application" means the standard form or forms, including any additions, revisions or modifications to the forms, approved by the administrator and the board for applying for a VSMP permit.

"Water quality volume" means the volume equal to the first 1/2 inch of runoff multiplied by the impervious surface of the land development project.

"Watershed" means a defined land area drained by a river or stream, karst system, or system of connecting rivers or streams such that all surface water within the area flows through a single outlet. In karst areas, the karst feature to which the water drains may be considered the single outlet for the watershed.

"Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal

circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

"Whole effluent toxicity" means the aggregate toxic effect of an effluent measured directly by a toxicity test.

#### **4VAC50-60-20. Purposes.**

The purposes of this chapter are to provide a framework for the administration, implementation and enforcement of the Act and to delineate the procedures and requirements to be followed in connection with VSMP permits issued by the ~~board~~ Board or its designee pursuant to the Clean Water Act and the Virginia Stormwater Management Act, while at the same time providing flexibility for innovative solutions to stormwater management issues. The chapter shall also establish the Board's procedures for the authorization of a qualifying local program, Board and Department oversight authorities for an authorized qualifying local program, the Board's procedures for utilization by the Department in administering a local program in localities where no qualifying local program is authorized, and the components of a stormwater management program including but not limited to stormwater management standards.

#### **4VAC50-60-30. Applicability.**

This chapter is applicable to:

1. Every private, local, state, or federal entity that establishes a stormwater management program or a MS4 Program;
- ~~2.~~ 2. The Department in its oversight of locally administered programs or in its administration of a local program;
- ~~3.~~ 3. Every state agency project regulated under the Act and this chapter; and
- ~~4.~~ 4. Every land-disturbing activity regulated under § 10.1-603.8 of the Code of Virginia unless otherwise exempted in 10.1-603.8 subsection B.

## **Part II Stormwater Management Program Technical Criteria**

### **4VAC50-60-40. Authority and applicability.**

~~This part specifies technical criteria for every stormwater management program and land disturbing activity.~~

Pursuant to the Virginia Stormwater Management Act, § 10.1-603.2 et seq. of the Code of Virginia, the Board is required to take actions ensuring the general health, safety and welfare of the citizens of the Commonwealth as well as protecting the quality and quantity of state waters from the potential harm of unmanaged stormwater. In addition to other authority granted to the Board under the Stormwater Management Act, the Board is authorized pursuant to §§ 10.1-603.2:1 and 10.1-603.4 to adopt regulations that specify minimum technical criteria for stormwater management programs in Virginia, to establish statewide standards for stormwater management from land disturbing activities, and to protect properties, the quality and quantity of state waters, the physical integrity of stream channels, and other natural resources.

In accordance with the Board's authority, this part establishes the minimum technical criteria and stormwater management standards that shall be employed by a local or state-administered stormwater management program or state agency to protect the quality and quantity of state waters from the potential harm of unmanaged stormwater runoff resulting from land disturbing activities.

### **4VAC50-60-50. General. Repeal**

### **4VAC50-60-53. General Requirements**

The natural, physical, chemical, biological and hydrologic characteristics and the water quality and quantity of the receiving state waters shall be maintained, protected, or improved. Objectives include, but are not limited to, supporting state designated uses and water quality standards.

### **4VAC50-60-56. Applicability of other laws and regulations**

Land disturbing activities shall comply with all applicable laws and regulations related to stormwater management, including but not limited to the CWA, Virginia Stormwater Management Act, Virginia Erosion and Sediment Control Law and the Chesapeake Bay Preservation Act except as provided in § 10.1-603.3 subsection I and all applicable regulations adopted in accordance with those laws. Nothing in this chapter shall be construed as limiting the applicability of other laws and regulations or the rights of other federal agencies, state agencies, or local governments to impose more stringent technical criteria or other requirements as allowed by law.

### **4VAC50-60-60. Water quality. Repeal**

### **4VAC50-60-63. Water Quality Criteria Requirements**

A. In order to protect the quality of state waters and to control nonpoint source pollution, the following minimum technical criteria and statewide standards for stormwater management shall be applied to land disturbing activities:

1. Where a site completely drains to one Hydrologic Unit Code, new development projects and projects occurring on prior developed lands that result in the total percent impervious cover of a site being less than or equal to 40% shall implement BMPs selected and designed to achieve a post-development pollutant load from the site that does not exceed 0.28 pounds of total phosphorus per acre per year and 3.00 pounds of total nitrogen per acre per year.

2. Where a site completely drains to one Hydrologic Unit Code, new development projects that result in the total percent impervious cover of a site being greater than 40% shall implement BMPs selected and designed to achieve a post-development pollutant load from the site that does not exceed 0.45 pounds of total phosphorus per acre per year and 2.68 pounds of total nitrogen per acre per year.

3. Where a site completely drains to one Hydrologic Unit Code, projects occurring on prior developed lands that result in the total percent impervious cover of a site being greater than 40% shall implement BMPs selected and designed to achieve a reduction of total nitrogen of at least 28% below the total nitrogen load that existed on the site prior to the project. However, under no circumstance shall the total nitrogen load be required to be reduced to below 2.68 pounds per acre per year.

4. Where a site drains to more than one Hydrologic Unit Code, the pollutant load reduction requirements shall be applied independently to each Hydrologic Unit Code.

5. In addition to the above requirements, if a land disturbing activity discharges stormwater to a segment of a state water that has been designated as impaired by the 303(d) Impaired Waters List and a TMDL wasteload allocation for that segment has been established by the Commonwealth and approved by the United States Environmental Protection Agency, additional control measures shall be implemented as necessary to be consistent with any phosphorus and nitrogen requirements of the TMDL implementation plan.

6. Total nitrogen and total phosphorus loads shall be calculated using methodologies provided in the Virginia Stormwater Management Handbook or another methodology that is demonstrated to achieve equivalent results and is approved by the Board.

7. Pursuant to §10.1-603.4, the Board is authorized to establish minimum design criteria for measures to control nonpoint source pollution. In order to address periodic modifications due to continuing advances in types of control measures and engineering methods, such design criteria guidance is set forth in the Virginia Stormwater Management Handbook and on the Virginia Stormwater BMP Clearinghouse website. The Board shall provide for stakeholder input and review prior to the adoption of any design criteria guidance and establish a procedure for advising local governments when such design criteria guidance has been adopted.

B. If a comprehensive watershed stormwater management plan has been adopted pursuant to 4VAC50-60-96 for the watershed within which a project is located, then the local program may allow off-site controls in accordance with the plan to achieve the post-development pollutant load water quality technical criteria set out in subsection A. Such off-site controls shall achieve the required pollutant reductions either completely off-site in accordance with the plan or in a combination of on-site and off-site controls.



C. Where no plan exists pursuant to subsection B, off-site controls may be used to meet the post-development pollutant load water quality technical criteria set out in subsection A provided:

1. The local program allows for off-site controls;
2. The applicant demonstrates to the satisfaction of the local program that offsite reductions equal to or greater than those that would otherwise be required for the site are achieved;
3. The development's runoff will not result in flooding or channel erosion impacts downstream of the site or any off-site treatment area; and
4. Off-site controls must be located within the same Hydrologic Unit Code or the adjacent downstream Hydrologic Unit Code to the land disturbing site, and
5. The right to utilize the off-site control area has been obtained and maintenance agreements for the stormwater management facilities have been established pursuant to 4VAC50-60-108.

Alternatively, the local program may choose to implement the provisions of this subsection through an exception granted pursuant to 4VAC50-60-122 or 4VAC50-60-148 in order to implement off-site treatment.

D. The percent of imperviousness may be adjusted through implementation of LID practices, allowing for an adjusted pollution removal rate requirement. Should the adjusted removal rate requirement resulting from implementation of LID practices be less than 25%, no additional stormwater management facilities shall be required.

The method to be utilized for crediting LID practices toward impervious area adjustments is set out in the Virginia Stormwater Management Handbook. The local program may limit the use of LID practices set out in the Virginia Stormwater Management Handbook and the Virginia Stormwater BMP Clearinghouse website. Subsequent to the original program submittal, a locality shall report any LID practices that are disallowed in writing to the Department.

#### **4VAC50-60-65. Water Quality Compliance**

A. Technology-based criteria set out in subsection B shall be utilized to achieve compliance with the water quality criteria requirements set out in 4VAC 50-60-63 subsection A unless the performance-based approach is otherwise approved by the local program based on conditions requiring the need for specific computations.

Additionally, where a TMDL wasteload allocation for phosphorus or nitrogen has been established by the Commonwealth and approved by the EPA for a segment of a state water where a land disturbing activity is discharging, the performance-based criteria shall be utilized to incorporate measures and controls that are consistent with the assumptions and requirements of such TMDL and to meet the water quality criteria requirements set out in 4VAC 50-60-63 subsection A.

B. Technology-based criteria. For land-disturbing activities, the post-development pollutant load from the site shall be treated by an appropriate BMP(s) as specified in Table 1 below. Additional BMPs available from the Virginia Stormwater BMP Clearinghouse website may be utilized to achieve the target nutrient pollutant removal requirements. The selected BMP(s) shall be located, designed, and maintained to perform at the target pollutant removal requirement specified in Table 1 below. Design standards and specifications for the BMPs in Table 1 that meet the required target

pollutant removal requirement will be provided on the Virginia Stormwater BMP Clearinghouse website.

Table 1

Land Use Category and Post-Development Impervious Cover Range	Pollutant Removal Rate Required for Total Phosphorus (TP) and Total Nitrogen (TN)	Acceptable BMPs (Preferred volume reduction BMPs with asterisks) <sup>1</sup>	Acceptable BMPs that can be used to meet pollutant removal requirement WHEN COMBINED WITH LID CREDITS <sup>2</sup> (Preferred volume reduction BMPs with asterisks) <sup>1</sup>
<b>LOW IMPERVIOUS (less than or equal to 40% impervious cover):</b>			
Low Impervious #1 I = 0 - 10%	TP = 20%	1. Good Rural Site Design Principles (no structural BMPs required)	N/A
		2. Extended Detention	N/A
Low Impervious #2 I = 11 - 15%	TP = 40%	1. Infiltration #1 *	1. Extended Detention
		2. Bioretention #1 *	
		3. Wetland #1	
		4. Wet Pond #1	
Low Impervious #3 I = 16 - 20%	TP = 50%	1. Infiltration #1 *	1. Extended Detention
		2. Bioretention #1 *	
		3. Wetland #1	
		4. Wet Pond #1	
Low Impervious #4 I = 21 - 25%	TP = 60%	1. Infiltration #1 *	1. Bioretention #1 *
		2. Bioretention #2 *	2. Wetland #1
		3. Wetland #2	3. Wet Pond #1
		4. Wet Pond #2	4. Extended Detention
Low Impervious #5 I = 26 - 30%	TP = 65%	1. Infiltration #1 *	1. Bioretention #1 *
		2. Bioretention #2 *	2. Wetland #1
		3. Wetland #2	3. Wet Pond #1
		4. Wet Pond #2	
		5. Filtering Practice #1	
Low Impervious #6 I = 31 - 40%	TP = 70%	1. Infiltration #1 *	1. Bioretention #1 *
		2. Bioretention #2 *	2. Wetland #1
		3. Wetland #2	3. Wet Pond #1
		4. Wet Pond #2	4. Filtering Practice #1
		5. Filtering Practice #2	

HIGH IMPERVIOUS (greater than 40% impervious cover):			
High Impervious #1 I = 41 - 50%	TN = 45%	1. Infiltration #1 *	1. Wetland #1
		2. Bioretention #2 *	2. Wet Pond #1
		3. Wetland #2	3. Filtering Practice #1
		4. Wet Pond #2	
		5. Filtering Practice #2	
High Impervious #2 I = 51 - 60%	TN = 55%	1. Infiltration #2 *	1. Infiltration #1 *
		2. Bioretention #2 *	2. Bioretention #1 *
		3. Wetland #2	3. Wet Pond #1 or #2
		4. Filtering Practice #2	4. Filtering Practice #1
High Impervious #3 I = 61 - 75%	TN = 60%	1. Infiltration #2 *	1. Infiltration #1 *
		2. Bioretention #2 *	2. Bioretention #1 *
		3. Wetland #2	3. Wet Pond #2
			4. Filtering Practice #2
High Impervious #4 I > 75%	TN = 70%	1. Infiltration #2 *	1. Infiltration #1 *
			2. Bioretention #2 *
			3. Wetland #2
			4. Wet Pond #2
			5. Filtering Practice #2
<p>1. Descriptions of these BMPs may be found on the Virginia Stormwater BMP Clearinghouse website. Additional BMPs and pollutant removal efficiencies located within the Virginia Stormwater BMP Clearinghouse website may be utilized to achieve the target nutrient pollutant removal, if approved for use under the local program.</p> <p>2. LID Credits reduce the site's "adjusted impervious cover" and result in an "adjusted pollutant removal requirement," which is less stringent than the removal rates listed in the Table for the various land use categories/ impervious cover ranges. The different BMPs listed as acceptable for use with LID Credits will require varying levels of LID Credit application. BMPs with lower pollutant removal efficiencies will require more ambitious application of LID Credits to achieve overall site compliance. BMPs with higher pollutant removal efficiencies may only require a modest application of LID Credits.</p>			

C. Performance-based criteria may be utilized to achieve compliance with the water quality criteria requirements set out in 4VAC 50-60-63 subsection A if approved by the local program based on conditions requiring the need for specific computations or where a TMDL wasteload allocation for phosphorus or nitrogen has been established by the Commonwealth and approved by the EPA for a segment of a state water to which a land disturbing activity is discharging.

1. For land-disturbing activities, the calculated post-development nonpoint source pollutant runoff load shall be compared to the applicable water quality requirement identified in 4 VAC 50-60-63 subsection A based upon the post-development total percent impervious cover of a the site. A BMP(s) shall be located, designed, and

maintained to effectively reduce the pollutant load to the required level. Pollutant load calculations shall be performed in accordance with the Simple Method and Event Mean Concentrations set out in the Virginia Stormwater Management Handbook or another methodology that is demonstrated to achieve equivalent results and is approved by the Board.

2. For the purposes of subdivision 1, BMPs selected must be contained within Table 1 of subsection B of this section or within the Virginia Stormwater BMP Clearinghouse website.

3. BMPs selected for sites containing a level of impervious cover that is greater than 40% shall utilize only BMPs specified for categories of greater than 40% impervious cover in Table 1 of subsection B of this section or practices listed for the specified categories on the Virginia Stormwater BMP Clearinghouse website.

#### **4VAC 50-60-66 Water Quantity**

In order to protect state waters from the potential harms of unmanaged quantities of stormwater runoff, the following technical criteria and statewide standards for stormwater management shall apply to land disturbing activities:

A. Properties and state waters receiving stormwater runoff from any land-disturbing activity shall be protected from sediment deposition, erosion and damage due to changes in runoff rate of flow and hydrologic characteristics, including but not limited to, changes in volume, velocity, frequency, duration, and peak flow rate of stormwater runoff in accordance with the minimum water quantity standards set out in this section and the guidance found in the Virginia Stormwater Management Handbook. Consideration should be given to BMPs that address the quality and quantity of stormwater runoff.

B. Pursuant to §10.1-603.4 subsection 7, a local program shall require that land disturbing activities:

1. Maintain post-development runoff rate of flow and runoff characteristics that replicate, as nearly as practicable, the existing predevelopment runoff characteristics and site hydrology. A local program may develop rules that are approved by the Board for making this determination.

2. If stream channel erosion or localized flooding exists at the site prior to the proposed land disturbing activity, the project shall improve to the extent practicable upon the contributing share of the existing predevelopment runoff characteristics and site hydrology consistent with guidance found in the Virginia Stormwater Management Handbook.

C. For the purposes of determining compliance with subsection B, a local program shall require the following:

1. Pre-development runoff characteristics and site hydrology shall be verified by physical surveys, geotechnical investigations, and calculations that are consistent with good engineering practices that are acceptable to the local program authority.

2. Flooding and channel erosion impacts to receiving streams due to land-disturbing activities shall be calculated for each point of discharge from the land disturbance and such calculations shall include any runoff from the balance of the watershed which also contributes to that point of discharge. Flooding and channel erosion impacts shall be evaluated taking the entire upstream watershed into account, including the modifications from the planned land disturbance. Good engineering practices and calculations shall be

used to demonstrate post development runoff characteristics and site hydrology, and flooding and channel erosion impacts.

3. For purposes of computing predevelopment runoff, all pervious lands in the site shall be assumed prior to development to be in good condition (if the lands are pastures, lawns, or parks), with good cover (if the lands are woods), or with conservation treatment (if the lands are cultivated); regardless of conditions existing at the time of computation. Predevelopment runoff calculations utilizing other land cover values may be utilized where stream channel erosion or localized flooding at the site does not exist provided that it is demonstrated to and approved by the local program authority that actual site conditions warrant such considerations.

D. Notwithstanding the requirements of subsection C, any land disturbing activity shall be deemed to have satisfied the requirements of subsection B if the practices implemented on the site are designed to:

1. Detain the water quality volume and to release it over 48 hours;
2. Detain and release over a 24-hour period the expected rainfall resulting from the one year, 24 hour storm; and
3. Reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming that it was in good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition.

Such land disturbing activity shall further be exempt from any flow rate capacity and velocity requirements for natural or manmade channels as defined in any other section of this regulation.

E. The percent of imperviousness may be adjusted through implementation of LID practices, allowing for an adjusted runoff volume reduction. The method to be utilized for crediting LID practices toward impervious area adjustments is set out in the Virginia Stormwater Management Handbook. The local program may limit the use of LID practices set out in the Virginia Stormwater Management Handbook and the Virginia Stormwater BMP Clearinghouse website. LID practices allowed by the locality shall be reported to the Board when altered from the original program submittal.

#### **4VAC50-60-70. Stream channel erosion. Repeal**

#### **4VAC50-60-73. Design Storms**

For the purposes of this chapter, unless otherwise specified, the specified design storms shall be defined as the 2 and 10-year 24-hour storms using the site-specific rainfall distribution recommended by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS). The local program may allow for the use of the Modified Rational (critical storm duration) Method pursuant to guidance provided in the Virginia Stormwater Management Handbook.

#### **4VAC50-60-76. Linear development projects**

Unless exempt pursuant to §10.1-603.8 subsection B, linear development projects shall control post-development stormwater runoff in accordance with a site-specific

stormwater management plan or a comprehensive watershed stormwater management plan developed in accordance with these regulations.

**4VAC50-60-80. Flooding.** Repeal

**4VAC50-60-83. Stormwater management impoundment structures or facilities**

A. Construction of stormwater management impoundment structures or facilities within tidal or nontidal wetlands and perennial streams ~~should be avoided~~ is prohibited unless ~~the~~ allowed by the local program and all required permits are obtained.

B. Construction of stormwater management impoundment structures or facilities within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain should be avoided. When this is demonstrated to be unavoidable, all stormwater management facility construction shall be in compliance with all applicable requirements under the National Flood Insurance Program, 44 CFR Part 59 and local floodplain ordinances.

C. Stormwater management impoundment structures that are not covered by the Impounding Structure Regulations (4VAC50-20) shall be engineered for structural integrity and spillway design for the 100-year storm event. In no case shall the design standard be less than the 100-year storm event for any stormwater management impoundment structure.

D. Construction of stormwater management impoundment structures or facilities may occur in karst areas only after a geological study of the area has been conducted to determine the presence or absence of karst features that may be impacted by stormwater runoff and BMP placement.

E. Discharge of stormwater runoff to a karst feature shall meet the water quality criteria set out in 4 VAC 50-60-63 and the water quantity criteria set out in 4 VAC 50-60-66. Permanent stormwater management impoundment structures or facilities shall only be constructed in karst features after completion of a geotechnical investigation that identifies any necessary modifications to the BMP to ensure its structural integrity and maintain its water quality and quantity efficiencies per guidance in the Virginia Stormwater Management Handbook. The person responsible for the land disturbing activity is encouraged to screen for known existence of heritage resources in the karst features. Capture of impounded water by subsurface solution channels, either through soil piping or catastrophic collapse such as sinkhole formation shall be considered a BMP failure and shall be subject to repair as required by a BMP maintenance agreement. Improved sinkholes shall be registered with EPA if required by federal law and shall be included in the SWPPP.

**4VAC50-60-86. Riparian Buffers**

A. In areas not subject to the Chesapeake Bay Preservation Act (§10.1-2100 et seq.) and its attendant regulations, a local program shall require on development and redevelopment sites that riparian buffers defined pursuant to this Chapter, adjacent to perennial streams, be maintained during and following the land disturbing activity. If no such riparian buffers are existing at the time of the land disturbing activity, then riparian buffers shall be established.

If a local program desires to vary the riparian buffer requirement, a local program may develop a riparian buffer plan that adequately protects water quality and quantity and that includes riparian protection strategies for the maintenance of existing buffers and the establishment of new buffers. The local program shall submit the riparian buffer plan to the Board for approval.

B. Additions to required riparian buffers or improvements in land cover to existing riparian buffers statewide may be eligible for LID credits if allowed by the local program.

C. Exceptions to this buffer requirement may be considered by the local program as necessary in accordance with guidance provided in the Virginia Stormwater Management Handbook. Riparian buffers shall not be required in approved areas associated with linear development project perennial stream crossings, in those approved areas associated with other local program approved private subdivision road or street crossings, or in approved areas in accordance with the riparian buffer plan.

**4VAC50-60-90. Regional (watershed-wide) stormwater management plans.** Repeal

**4VAC50-60-93. Stormwater Management Plan Development**

A. A stormwater management plan for a land disturbing activity shall apply these stormwater management technical criteria to the entire land disturbing activity.

B. Individual lots or planned phases of developments shall not be considered separate land-disturbing activities, but rather the entire development shall be considered a single land disturbing activity.

C. The stormwater management plan shall consider all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff.

**4VAC50-60-96. Comprehensive watershed stormwater management plans**

A. Localities may develop comprehensive watershed stormwater management plans to be approved by the Board that meet the water quality requirements, quantity requirements, or both of this chapter. Such plans shall ensure that offsite reductions equal to or greater than those that would be required on each contributing land disturbing site are achieved within the same Hydrologic Unit Code or the adjacent downstream Hydrologic Unit Code, as identified in Virginia's 6<sup>th</sup> Order National Watershed Boundary Dataset (version 2), or within Hydrologic Unit Codes approved by the Board, pursuant to guidance provided in the Virginia Stormwater Management Handbook. State and federal agencies intending to develop large tracts of land may develop or participate in comprehensive watershed stormwater management plans where practicable. The local program shall document nutrient reductions achieved during the plan's implementation. If land uses or the percent of imperviousness upon which the plan was based change or if any other amendments are deemed necessary by the local program, the local program shall provide plan amendments to the Board for review and approval.

B. If the local program allows for a pro rata fee in accordance with §15.2-2243 of the Code of Virginia, then the reductions required for a site by this chapter may be achieved by the payment of a pro rata fee sufficient to fund improvements necessary to adequately achieve those requirements in accordance with that section of the Code and this chapter.

