

Virginia Soil and Water Conservation Board
Stormwater Management Regulations Technical Advisory Committee (TAC)
Tuesday, May 22, 2007
Science Museum of Virginia
Richmond, Virginia

Technical Advisory Committee Members Present

Michelle Brickner, Fairfax County
Jack Frye, Department of Conservation and Recreation
Kevin Haille, Loudoun County
Shelby T. Hertzler, Rockingham County
Lee Hill, Department of Conservation and Recreation
Alecia-Daves Johnson, Piedmont Soil and Water Conservation District
William J. Johnston, City of Virginia Beach
Bob Kerr, Kerr Environmental Services Corporation
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
Reginald Parrish, U.S. Environmental Protection Agency
Jeff Perry, Henrico County
David Rundgren, New River Valley PDC
Alyson Sappington, Thomas Jefferson Soil and Water Conservation District
Gerald Seeley, Jr., Department of Environmental Quality
Ingrid Stenbjorn, Town of Ashland
William H. Street, James River Association
John Tippett, Friends of the Rappahannock

Technical Advisory Committee Members Not Present

Michael E. Doczi, Michael E. Doczi & Associates, PLLC
Jerry W. Davis, Northern Neck PDC
Phil Schirmer, City of Roanoke
Burton R. Tuxford, II, Virginia Department of Environmental Quality

Facilitator

Judy Burton, J. Burtner and Associates

DCR Staff

Ryan J. Brown, Assistant Director of Policy and Planning
Eric R. Capps, E&S Control and Construction Permitting Manager
C. Scott Crafton, Stormwater Compliance Specialist
David C. Dowling, Director of Policy, Planning and Budget

Jim Echols, Urban Programs Compliance Engineer
Michael R. Fletcher, Board and Constituent Services Liaison
Carrie Hileman, Policy and Planning Intern
John Mlinarcik, Shenandoah Watershed Office
Christine Watlington, Policy, Planning and Budget Analyst
Elizabeth Andrews, Office of the Attorney General

Others Present

Tom Schueler, Center for Watershed Protection
Dave Hirschman, Center for Watershed Protection
Joe Battiatia, Contech Stormwater Solutions
Barbara Brumbaugh, City of Chesapeake
Elizabeth M. Dietzman, Aqualaw PLC
Scott Flanagan, Chesterfield County
Andrea Futrell, Virginia Cave Board
Tim Hare, CH2M Hill
Steve Herzog, Hanover County
Mary Jane Keefe, Timmons Group
Larry Land, Virginia Association of Counties
Ridge Schuyler, The Nature Conservancy
Scott Williams, Chesterfield County
Charles Williamson, Prince William County
Laura Wheeling, Hampton Roads PDC

Opening Remarks and Review of Agenda

Ms. Burtner welcomed attendees. She said that much work had been done since the last meeting in October. She turned to Mr. Dowling for a review of the agenda.

Mr. Dowling welcomed members back. He noted that there were two reasons for delaying further meetings.

First, DCR wanted to discuss the draft regulations with EPA. This was done in December. He said that DCR has the EPA comments and that he would share that with the committee.

Secondly, to allow time for the Center for Watershed protection to assess whether regulations and the incorporated load limits were reasonable and achievable. He said that representatives from the Center for Watershed Protection were present to present their findings.

Mr. Dowling reviewed the agenda for the day. He noted that minutes from several past meetings were not posted on the DCR website. He asked that members review the documents and forward changes or corrections to Ms. Watlington within the next week and a half.

Mr. Dowling said that the next TAC meeting would be June 14 and that the hope was to bring the draft Regulations before the Virginia Soil and Water Conservation Board in July.

General Review of Existing Part II Draft Regulations

Mr. Dowling called on Mr. Hill.

Mr. Hill reviewed the changes to the Existing Part II Draft Regulations. A copy of this draft is included as Attachment #1.

A member clarified that this was the draft that went to the EPA and that the draft had not been substantially edited since the last TAC review.

A member asked for clarification of the term "The Act."

Mr. Hill said that referred to the Stormwater Management Act.

It was noted that the draft did not clearly reference the Stormwater Management Act, however the Clean Water Act was referenced. It was suggested that references to the Stormwater Management Act be clarified in the draft.

Ms. Burtner asked if there were additional questions for clarifications. Hearing none, she turned to Mr. Crafton for an introduction.

Introduction of Center for Watershed Protection Study

Mr. Crafton said that the Department had felt the need to suspend the work of the TAC for the purposes of clarifying information. DCR turned to the Center for Watershed Protection (CWP) to review the load limits that were proposed in the draft to determine if they were reasonable.

In addition, DCR asked the CWP to determine if these numbers were achievable with the BMPs that were available, to recommend a rate of BMPs that should be included in the handbook, and to look at removal efficiencies.

The Center was asked to look at the fee schedule so that DCR would have the confidence that the proposed fees were sufficient. They were also asked to consider whether the simple method for calculating pollutant loadings was still appropriate.

DCR asked the Center to look at case studies and site plans and to apply the principles and loads.

Presentation of the Center for Watershed Protection

Tom Schueler and Dave Hirschman gave the presentation from the Center for Watershed Protection. A copy of their presentation as well as copies of the accompanying materials is available from DCR.

Mr. Schueler said that the work being done represented a new generation of more effective stormwater management from a removal and cost standpoint. He said that the science is still evolving.

Mr. Schueler said that early on CWP recognized that national averages do not fit Virginia. For varying reasons, Virginia stormwater has more nutrients than most of the stormwater in the rest of the nation.

Mr. Schueler said that some BMPs were found to be less effective than anticipated.

Mr. Schueler said that Mr. Hirschman would give the presentation and that members would get a sense of how the system works as a whole. He said there could be differences over the individual parts.

Mr. Schueler said that the CWP, the James River Advisory Council, the Hampton Roads PDC and eight local governments were recently awarded a \$600,000 Chesapeake Bay grant to take whatever comes from this process to do an "Extreme BMP Makeover." He said this is a great opportunity to take what comes from this body and to adopt it as soon as possible.

Mr. Hirschman reviewed the following presentation:

Virginia Nutrient Design System for Updated Regulations and Handbook
Center for Watershed Protection

Background

- Technical Advisory Committee (TAC)
- Site-Based Performance Standards tied to Tributary Strategy Goals for Urban Land
- Update Handbook & Develop BMP Clearinghouse (VWRRC)

CWP Role

- Look at basis for Urban Land Performance Goals
- Update Stormwater Quality & BMP Performance Data
- Develop Stormwater Quality Approach
 - Methods
 - Computations
 - Acceptable BMPs
 - Sample Plans
 - Fee-in-Lieu

Review of Available Methods

1. CBLAD Method	Reduce Load to Ave. Land Cover Condition
2. Performance Standard	Reduce Load in Site-Based Standard (e.g. 0.28 lbs/acre)
3. Technology Approach	Select from BMP Table (e.g. existing regs).
4. No Net Increase	Reduce Load to Pre-Development Levels
5. One Size Fits All	e.g., 80% TSS, 40% TP

Mr. Hirschman reviewed a graphic comparison of methods. This graphic is available from DCR.

Recommended Approach

- Performance Standards
- Technology Approach

Outcome: Virginia Nutrient Design System

Enhanced Nutrient Removal at Development Sites Focus on Better BMP Designs

- Accountability for Trib Strategies
- Easy to Understand and Use
- Achievable On-the-Ground Outcomes
- Incorporates LID
- Integrates with Other Standards

Section 1:

- Overall method
- BMP Lookup Table
- 2 Levels of BMP Design

Preliminary Assessment

- STEP 1 – Drainage Area is basis for WQ analysis
- STEP 2 – New Development or Redevelopment (cut off @ 40% impervious)*
- STEP 3 – Unique Conditions (watershed plans)
- STEP 4 – Impervious Cover Category
- STEP 5 – Assess Low-Impact Development (LID) Credits EARLY in process.

* Redevelopment Criteria Are Provisional

LID Credits/BMP Lookup Table

- STEP 6 – LID Credit Spreadsheet, OR
- STEP 7 – BMP Lookup Table
- STEP 8 – Design Practices (Handbook & Clearinghouse)

Site-Based Performance Standards

	Total Phosphorus	Total Nitrogen
Low Impervious Sites (< 40%)	0.28 lbs/acre/yr	3.00 lbs/acre/yr
High Impervious Sites (> 40%)	0.45 lbs/acre/yr	2.68 lbs/acre/yr

* Low Impervious – P is critical pollutant (yards, soil loss)

* High Impervious – N is critical pollutant (atmospheric deposition contribution to stormwater)

* BMP treatment mechanisms can be designed to treat both P & N

Section 2: LID Credits

- Description of Credits
- Spreadsheet

LID Credits – Volume Reduction

1. Reforesting Riparian Area
2. Expanding/Protecting Riparian Area
3. Open Space Conservation
4. Open Space w/Hydrologic Function
5. On-Lot Practice
6. Rainwater Harvesting
7. Soil Amendments
8. Pervious Parking
9. Green Roof
10. Grass Channels
11. Other Impervious Disconnection

Mr. Hirschman reviewed the graphics for the LID Credit Spreadsheet, the Performance Calculation Method, and the Example and Specs Checklist.

Mr. Hirschman reviewed the appendices.

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Appendix A: Mr. Hirschman said the information is available at the national level. He noted that a lot of the information was provided by Virginia. He said that Virginia has a statistically significant dataset to draw from.

Appendix B addresses the Available Water Quality approaches.

Appendix C: BMP List for VA

- Evaluation of BMPs
- Acceptable BMPs for Virginia
- Irreducible Concentration
- Best Design Resources
- Updated BMP Performance Data from National Pollutant Removal Database

Appendix E: Sample Plans

- Actual plans from VA localities
- Worked through Nutrient Design System process
- Retained existing layouts
- Mostly “modest” modifications to achieve compliance
- LID Credits are critical

Conclusion – Virginia Nutrient Design System

- Performance Standards for Trib Strategy Urban Land Goals
- Easy-to-use BMP Lookup Table
- New & Improved LID Credits
- Two Levels of BMP Design
- Building Block for Regulations & Handbook

BMP Research: Beyond the Median

- Limited # of Observations for each BMP type
- Tremendous Spread in Some Cases
- Some BMPs Difficult to Monitor (e.g. Infiltration)
- Critical Factors
 - Flow Rate
 - Particle Sizes
 - Influent Concentration
- Accounting for Volume Reducing BMPs
- Different Treatment Processes

At this time the committee took a break. Following the break Ms. Burtner asked for questions from TAC members.

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A member said that he liked the combining of the performance standards with the technology-based standards.

A member said that he liked the idea of the clearinghouse.

Mr. Schueler said that it would be helpful not to change the regulations but to change the design supplement and the BMP handbook.

A member asked for an explanation of the simple method computation and whether that was based on new research.

A member asked about wetlands. He noted that the numbers for phosphorus and nitrogen were fairly good.

Mr. Hirschman said that he believed the removal rate was about 20%. He said that when the performance standards were applied, they started having healthy removal efficiencies with very low impervious cover.

A member noted that many times in a subdivision there was a need to do extended detention. He said that he would rather see an improved design rather than the elimination of extended detention as an option.

Mr. Schueler said that could be reviewed. He said the preference was to not get accidental extended detention ponds. He said the preference would be for a constructed wetland not to have a permanent pool.

Mr. Hirschman said the other issue regarding development was that when he reviewed the sample plan for LID credits, if there was an extended detention pond, that could use grass channels or some other practices to handle the total water quality. He said any type of intelligent creative design could be applied towards credits.

A member said the idea of using the LID credits is innovative and creative. He asked about the mechanism that would cause a developer to use the LID credits.

Mr. Schueler said that for a wide range of development sites a developer may need to utilize LID credits to ease compliance. If there is a 65-70% removal efficiency, the credits will be very beneficial.

Mr. Hirschman said that the nature of the technology table is that there is always a BMP that will allow you to comply. He said developers would be motivated by the amount of land area that they must dedicate to stormwater.

He said that a lot of developers do not want to install BMPs. He said they do not want to put in things that will be viewed as nuisances by the people that will be moving in. He

said if the developer is motivated in that direction he might use the LID credits to reduce or minimize the structural practices.

Mr. Schueler said that what is unique about the system is that there are four credits that pertain to commercial sites.

A member said that localities are very much concerned with LID, especially with regard to maintenance and inspections.

Mr. Hirschman said there are other LID options, including the riparian buffer credit. He said LID is not a requirement, but a strong incentive.

He said that the two options are (1) to allow each local government to choose which group of credits it wishes to offer; or (2) if there is a strong sense among all the communities that a credit isn't appropriate, then it can be removed. He said that this is a decision for the TAC.

Mr. Crafton said that there would be the opportunity in the handbook or the clearinghouse to clarify some of these issues.

A member said that BMPs shouldn't have to be tracked beyond the end of the construction process.

Mr. Schueler and Mr. Hirschman reviewed the sample plans. Copies of these sample plans are available from DCR.

Mr. Schuler said these were sample plan worksheets for actual localities in Virginia. The worksheets document the necessary steps.

At this point the committee recessed for lunch.

A member asked about the maintenance issue. He said that rural areas are not likely to agree to this.

It was noted that the sample plans did not include work by VDOT. It was suggested that Mr. Mills provide a sample VDOT Plan to Mr. Hirschman to review.

Mr. Schueler said that the goal had been to put together a system that works. He said in the future this model might be replaced by a computer model.

Updates on the Development of the Stormwater Management Handbook and BMP Clearinghouse

Ms. Burtner called on Mr. Crafton to talk about the development of a stormwater management handbook and bmp clearinghouse.

Copies of the handouts from Mr. Crafton are available from DCR.

Mr. Crafton said that DCR is working on a revision of the BMP handbook. A separate advisory committee has been established.

He said that DCR has also contracted with the water resources section at Virginia Tech to create a stormwater BMP clearinghouse website for DCR.

Mr. Crafton said the intent is to have the BMP handbook as a separate document.

A member expressed concern regarding the clearinghouse advisory committee. He expressed a concern that some offering opinions might not be technically trained.

Mr. Crafton said that the committee would be chaired by DCR and would include researchers and academicians. The Water Center will staff the committee.

A member asked for the definition of the TARP protocol. TARP stands for "Technology Assessment Research Program."

Review of EPA Comments

Mr. Brown reviewed the following concerns from the EPA.

1. Noted that "this is an exciting and innovative product."
2. Expressed concern with language allowing permittees to pay an in-lieu fee if infeasibility to meet regulations is determined.
3. Concerned with the lack of a direct reference to Water Quality Standards with which permittees must comply.
4. Emphasized that while localities may be authorized to perform program administration, final responsibility for the approving coverage under the general permit must remain with DCR. Referenced the Pennsylvania and Michigan programs as examples of states where permit issuance remains a responsibility of the state while local entities are authorized to perform program administration. Discussed differences between program "delegation" and "authorization."
5. Noted the need to ensure that all requirements for a "qualifying local program" under 40 C.F.R. § 122.44(s) are included in Part III.
6. Requested the removal of "maximum extent practicable," as found in the draft 4VAC50-60-63(A)(4) [subsection related to impaired waters], and the substitution of other suitable language in order to avoid confusion due to the MEP concept being used in other portions of state and federal law and regulations.

Review and Discussion of Draft Regulations

*Working Draft for Part I and II of the Stormwater Regulations
May 22, 2007 TAC Version*

A copy of the working draft is attached as Attachment #1.

Mr. Hill gave a review of the Part II Draft. He said this version was the last the TAC had seen since December. He noted changes made were as a result of the CWP study.

A member noted that pre-development and pre-existing are confusing terms.

A member asked if the two references to water quality were in conflict.

Mr. Hill said that concern was addressed through the tables.

A member asked if this was limiting BMPs to only two sources.

Mr. Hill said that would be correct with this version.

A member asked who was creating the BMP clearinghouse.

Mr. Crafton said that Virginia Tech was creating and would host for DCR.

The member suggested that it read as the DCR website for purposes of clarity.

A member asked about the references to the BMP clearinghouse as well as the blue book.

Mr. Hill said the hope is to have these components completed at the same time.

A member asked about the language at line 794 that read “Where the site drains to multiple streams, the pollutant load reduction requirements shall be applied independently to each of those streams.”

Ms. Salvati explained that the intent was to say that in a site where there is a drainage divide and there are two totally different river systems there may be more than one drainage area.

A member said in that case the term should be river basin, not stream.

At this time the committee took a break.

A member asked if at line 809 the wording could be changed to include discharge to impaired segments or waters upstream of that segment.

Mr. Frye said that when the TMDL is complete it would look at the actual sources of impairment.

A member said that it was important to make sure this section did not conflict with TMDL language elsewhere.

A member asked about Line 815, Section B and noted that the section had been stricken. He asked if this meant that offsite controls might no longer be done through a contribution to a locality.

A member noted that the nitrogen and phosphorus criteria were adjusted to enable onsite compliance, but that the original numbers of nitrogen and phosphorus were set to achieve and maintain water quality standards for the Chesapeake Bay and tidal tributaries.

4 VAC 50-60-65 Water Quality Compliance

A member asked the reason for adding compliance as a separate section.

A member said that it might be helpful to include a clause allowing this to be changed as necessary.

On line 970, a member said that he would like to provide karst language to Mr. Hill for consideration.

A member expressed concern about a buffer going from 50 ft. to 100 ft.

A member said that the Chesapeake Bay Local Assistance Board Policy Committee is considering putting buffers around all intermittent streams that connect to a wetland or any other perennial stream.

Ms. Salvati said that this action could possibly affect buffers in Tidewater. She said the CBLAB Policy Committee is refining guidance that talks about non-tidal wetlands that are RPA features and have to have a 100 ft. buffer around them. This is not saying that all intermittent streams have to be buffered.

A member noted that the reference to riparian buffers addressed perennial streams. He noted that perennial streams are not defined in the Bay Act regulations. He said if these terms are to be used perennial and intermittent should be defined.

Ms. Salvati said that the Chesapeake Bay Act regulations and guidance could be cited.

Ms. Burtner acknowledged that this was the first viewing of the draft for committee members. She said that additional comments should be directed to DCR staff.

Mr. Dowling asked for a general consensus of whether the group thought the document was heading in the right direction.

A member said that there was a lot of information to consider.

Mr. Dowling said that, depending on progress made before June 14, there might be a need for one additional meeting.

A member asked Mr. Dowling to explain the process with the Virginia Soil and Water Conservation Board.

Mr. Dowling said that these are Board proposed regulations that will require and administrative review. Following that review there will be a 60-day comment period with hearings across the state.

The final stage is to look at all the comments received. This may include meeting with various stakeholder groups. Following those reviews the Regulations will again be presented to the Board.

Mr. Crafton said that anyone wishing to be involved in the development of the handbook should let him know.

Ms. Burtner thanked members for their participation and declared the meeting 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 that will convey the designated frequency storm event without overtopping the channel bank nor causing erosive damage to the channel bed or banks.

"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)" 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.

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

"Channel" means a natural or manmade waterway.

~~"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 development plans or regulations, that spells out how the water quality and quantity components of stormwater are to be managed on a watershed-wide basis.

"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.

"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 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.

"Drainage area" means a land and water area from which runoff may flow to a common outlet point on the land disturbing site.

"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.

"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. A stream restoration project shall not be considered a linear development project.

"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.

"Maximum extent practicable" or "MEP" means a level of implementing stormwater practices and programs which achieve pollutant reductions and take into

account the best available technology, cost effectiveness and other competing issues such as human safety and welfare, endangered and threatened resources, water quality and quantity, and geographic features. MEP is achieved, in part, by selecting and implementing effective BMPs and rejecting applicable BMPs only when the BMPs would not be technically feasible or the cost would be prohibitive and unreasonable. MEP is a dynamic performance standard, which evolves over time as urban runoff management knowledge increases. MEP allows flexibility in the way to meet the performance standards and may vary based on the performance standard and site conditions. A stormwater management program must continually be assessed and modified to incorporate improved programs, control measures, best management practices (BMPs), etc. This continual assessment, revision, and improvement of the stormwater management program is expected to ultimately achieve compliance with water quality standards.

"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)" 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.

"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.

"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" or "pre-existing" 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)" 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)" 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 state waters, and (iii) managed to maintain the integrity of 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 adjacent to state waters does not constitute a riparian buffer. The riparian buffer is measured landward (horizontal distance) from the stream bank 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" means the parameters of stormwater that address but are not limited to velocity, peak flow rate, volume, time of concentration, 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 parameters that impact the movement of water on and off the site, including but not limited to characteristics such as soil types, soil permeability, vegetative cover, seasonal water tables, and slopes.

"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 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 standards of effectiveness for every stormwater management program and land-disturbing activity as setout in Part II of these regulations.

"Stormwater Pollution Prevention Plan" (SWPPP) or "plan" 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.

"Undeveloped land" means land that has not been previously disturbed for development.

"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 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 local program delegation procedures by the Board, Board and Department oversight authorities for locally administered programs, Department local program administration procedures as a

program implementer for non-opt-in localities, 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;
- ~~2. The Department in its oversight of locally delegated programs or in its administration of a local program;~~
3. Every state agency project regulated under the Act and this chapter; and
4. Every land-disturbing activity regulated under § 10.1-603.8 of the Code of Virginia unless otherwise exempted in 10.1-603.8 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 Law, § 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 Law, 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, water quality, 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 delegated or state-administered local stormwater management program 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 in accordance with these regulations and 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 Law, 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 rights of other federal and state agencies from imposing stricter technical criteria or other requirements as allowed by law.

4VAC50-60-60. Water quality. Repeal

4VAC50-60-63. Water Quality Criteria Requirements

In order to protect the quality of state waters and to control nonpoint source pollution, a local program shall apply the following minimum technical criteria and statewide standards for stormwater management to land disturbing activities as specified below:

A. 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 referenced in the Virginia Stormwater Management Handbook and on the Stormwater BMP Clearinghouse website. In requiring the implementation of such control measures for the land disturbing activity on the development site, a local program shall, at a minimum, incorporate the following technical criteria and stormwater management standards:

1. A local program shall require new development or projects occurring on prior developed land to implement control measures with minimum design criteria such that the post-development pollutant load of the any drainage area that is less than or equal to 40% impervious within the development site shall not exceed 0.28 pounds of total phosphorus per acre per year and 2.68 3.00 pounds of total nitrogen per acre per year.

OR

1. A local program shall require new development or projects occurring on prior developed land that is less than or equal to 40% impervious, to implement control measures with minimum design criteria such that the post-development pollutant load of from the development site shall not exceed 0.28 pounds of total phosphorus per acre per year and 2.68 3.00 pounds of total nitrogen per acre per year. Where the site drains to multiple streams, the pollutant load reduction requirements shall be applied independently to each of those streams.

2. A local program shall require new development to implement control measures with minimum design criteria such that the post-development pollutant load of any drainage area that is greater than 40% impervious within the development site shall not exceed 0.45 pounds of total phosphorus per acre per year and 2.68 pounds of total nitrogen per acre per year.

~~23.~~ A local program shall require that projects occurring on prior developed lands that result in any drainage area that is greater than 40% impervious achieve at least a 44% reduction in total phosphorous load and at least a 28% reduction in total nitrogen load from pre-existing conditions. The post-development pollutant load for these projects occurring on prior developed lands shall not be required to be reduced to less than 0.28

0.45 pounds of total phosphorous per acre per year and 2.68 pounds of total nitrogen per acre per year.

34. Total nitrogen load and total phosphorus load shall be calculated using methodologies provided in the Virginia Stormwater Management Handbook.

45. 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 for that segment has been established and approved by the United States Environmental Protection Agency, a local program shall require that additional control measures be implemented as necessary to achieve the goals of the TMDL implementation plan to the maximum extent practicable.

B. If the local program has adopted a comprehensive watershed wide stormwater management plan for the watershed within which the project is located pursuant to 4VAC50-60-96, 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.

B. If the local program allows for offsite controls, and if the applicant demonstrates to the satisfaction of the local program authority that post-development pollutant load water quality technical criteria set out in subsection A cannot be achieved onsite, offsite controls may be considered to achieve the necessary reduction per the following:

1. Unless addressed through a comprehensive stormwater management plan, new development pollutant loads shall not exceed 0.37 pounds of total phosphorus per acre per year and 3.5 pounds of total nitrogen per acre per year through onsite controls. Projects occurring on prior developed lands shall at a minimum achieve a 33% reduction in total phosphorous load and 21% reduction in total nitrogen load from pre-existing conditions through onsite controls.

2. Once the minimum onsite phosphorus and nitrogen load and reduction criteria set out in subsection B1 have been met, offsite practices acceptable to the local program authority shall be utilized to meet the remaining required pollutant load reductions for the development or redevelopment project. The offsite reductions shall be achieved within the same Hydrologic Unit Code or the adjacent downstream Hydrologic Unit Code per guidance provided in the Virginia Stormwater Management Handbook.

3. If the local program allows for a pro rata fee in accordance with §15.2-2243, and if the applicant has demonstrated to the satisfaction of the local program authority that the criteria set out in subsection B2 cannot be met, then the remaining load reductions shall be achieved by a payment of a pro rata fee deposited in a non-reverting Stormwater Mitigation fund established by the local program for the restricted purpose of achieving the required load reductions pursuant to a Board approved plan and schedule.

C. The percent of imperviousness may be adjusted through implementation of LID practices, allowing for an adjusted pollution removal rate requirement. The method to be utilized for crediting LID practices toward impervious area adjustments is set out in the Stormwater Management Handbook. The local program may limit the use of specific LID practices per an acceptable plan approved by the Board.

C. A local stormwater management program shall encourage the reduction of impervious cover and the implementation of LID in achieving the technical criteria set

~~forth in subsection A. The reductions achieved by LID measures shall be calculated per the guidance provided in the Virginia Stormwater Management Handbook.~~

4VAC50-60-65. Water Quality Compliance

A. Compliance with the water quality criteria requirements set out in 4VAC 50-60-63 may be achieved by applying the technology-based criteria or the performance-based criteria to each drainage area of the development site.

B. Technology-based criteria. For land-disturbing activities, the post-development pollutant load from each drainage area of the development site shall be treated by an appropriate BMP(s) as specified in the Table below. The selected BMP(s) shall be located, designed, and maintained to perform at the target pollutant removal efficiency specified in the Table below. Design standards and specifications for the BMPs in the Table below that meet the required target pollutant removal efficiency will be available within the Stormwater BMP Clearinghouse website.

Land Use Category and Post-Development Impervious Cover Range	Pollutant Removal Rate Required for Total Phosphorus (TP) and Total Nitrogen (TN)	BMPs*
LOW IMPERVIOUS (less than or equal to 40%)		
Low Impervious # 1 I = 0 – 10%	TP = 20% TN = 10%	1. Good Rural Site Design Principles (no structural BMPs required)
Low Impervious # 2 I = 11 – 15%	TP = 40% TN = 30%	1. Wet Pond #1 2. Bioretention #1 3. Infiltration #1 4. Wetland #1 5. WQ Swale #2
Low Impervious # 3 I = 16 – 20%	TP = 50% TN = 45%	1. Wet Pond #1 2. Bioretention #2 3. Infiltration #1 4. Wetland #2
Low Impervious # 4 I = 21 – 25%	TP = 60% TN = 55%	1. Wet Pond #2 2. Bioretention #2 3. Infiltration #1 4. Wetland #2 5. Filtering Practice
Low Impervious # 5 I = 26 – 30%	TP = 65% TN = 60%	1. Wet Pond #2 2. Bioretention #2 3. Infiltration #1 4. Wetland #2 5. Filtering Practice

Low Impervious # 6 I = 31 – 40%	TP = 70% TN = 70%	1. Wet Pond #2 2. Infiltration #2 3. Wetland #2 4. Filtering Practice
HIGH IMPERVIOUS (greater than 40%)		
High Impervious # 1 I = 41 – 50%	TP = 55% TN = 45%	1. Bioretention #1 2. Infiltration #2 3. Wetland #2 4. WQ Swale #1 5. Filtering Practice
High Impervious # 2 I = 51 – 60%	TP = 60% TN = 55%	1. Bioretention #2 2. Infiltration #2 3. Wetland #2 4. WQ Swale #2 5. Filtering Practice
High Impervious # 3 I = 61 – 75%	TP = 70% TN = 60%	1. Bioretention #2 2. Infiltration #2 3. Wetland #2 4. Filtering Practice (Enhanced – expanded pre-treatment)
High Impervious # 4 I > 75%	TP = 75% TN = 70%	1. Bioretention #2 2. Infiltration #2 3. Filtering Practice (Enhanced – expanded pre-treatment)
* <u>Additional BMPs and pollutant removal efficiencies located within the Stormwater BMP Clearinghouse website may be utilized to achieve the target nutrient pollutant removal.</u>		

C. Performance-based criteria. For land-disturbing activities, the calculated post-development nonpoint source pollutant runoff load shall be compared to the applicable water quality standard identified in 4 VAC 50-60-63 A, based upon the change in impervious area of each drainage area of the development site. Pollutant load calculations shall be performed in accordance with the Simple Method and Event Mean Concentrations set out in the Stormwater Management Handbook. A BMP shall be located, designed, and maintained to achieve the target nutrient pollutant removal efficiencies specified in the Table below to effectively reduce the pollutant load to the required level. Additional BMPs and pollutant removal efficiencies located within the Stormwater BMP Clearinghouse website may be utilized to achieve the target nutrient pollutant removal.

BMP Type	Total Phosphorus Removal Efficiency (percent)	Total Nitrogen Removal Efficiency (percent)
Wet Pond 1	50	30
Wet Pond 2	75	40
Bioretention 1	45	45
Bioretention 2	55	55

Infiltration 1	65	40
Infiltration 2	95	65
Constructed Wetland 1	45	25
Constructed Wetland 2	75	55
WQ Swale 1	25	45
WQ Swale 2	45	55
Filtering Practice	65	50

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.

B. Pursuant to §10.1-603.4:7, 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, or

2. If stream channel erosion or localized flooding is an existing predevelopment condition, the proposed land disturbing activity shall improve to the maximum extent practicable upon the contributing share of the existing predevelopment runoff characteristics and site hydrology per guidance found in the Virginia Stormwater Management Handbook.

C. Any land disturbing activity shall satisfy the requirements of subsection B above 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.

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

1. Pre-development stream characteristics 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 stream characteristics, 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 provided that it is demonstrated to and approved by the local program authority that actual site conditions warrant such considerations.

E. The percent of imperviousness may be adjusted through implementation of LID practices, allowing for an adjusted runoff volume reduction. The local program may limit the use of specific LID practices per an acceptable plan approved by the Board.

E. A local stormwater management program shall encourage the reduction of impervious cover and the implementation of LID in achieving water quantity reductions. The reductions achieved by LID measures shall be calculated per the guidance provided in the Virginia Stormwater Management Handbook.

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 a 2 and 10-year 24-hour storm using the site-specific rainfall distribution recommended by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS). The permit issuing authority may allow for the use of the Modified Rational (critical storm duration) Method per the guidance provided in the Virginia Stormwater Management Handbook.

4VAC50-60-76. Linear development projects

Linear development projects shall control post-development stormwater runoff in accordance with a stormwater management plan or a comprehensive 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 shall be avoided to the maximum extent practicable.

B. Construction of stormwater management impoundment structures or facilities within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain shall be avoided to the maximum extent practicable. 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 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 in accordance with guidelines provided in the Virginia Stormwater Management Handbook.

E. No adverse environmental impacts shall occur to any identified karst features. Permanent stormwater management impoundment structures or facilities shall only be constructed in karst features after completion of a geotechnical investigation in accordance with guidelines provided in the Stormwater Management Handbook. Discharge of stormwater into a karst feature shall not occur unless in accordance with the technical criteria provided in this Part and unless otherwise allowed by law.

4VAC50-60-86. Riparian Buffers

For the purpose of this chapter, a local program shall develop a riparian buffer plan in accordance with the guidance provided in the Virginia Stormwater Management Handbook that includes riparian protection strategies for the maintenance of existing buffers and the establishment of new buffers. To the maximum extent practicable, such a plan shall require that riparian buffers adjacent to perennial streams or streams whose watershed is greater than 50 acres in size on development and redevelopment sites 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 such plan shall require that riparian buffers be established. Riparian buffers may be eligible for LID credits, depending upon the width and type of land cover established. The local program riparian buffer plan shall be approved by the Board. The Board may grant an exception to the 35-foot width requirement provided that the local program demonstrates to the satisfaction of the Board that the reduced width will satisfactorily protect water quality and quantity. Nothing in this section shall be interpreted to diminish the applicability of any other state law including the Chesapeake Bay Preservation Act and its attendant regulations and guidance.

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 stormwater management plans

A. Localities are encouraged to may develop comprehensive stormwater management plans to be approved by the Board that meet the water quality and quantity requirements of this chapter on a watershed-wide basis. Such plans shall ensure that offsite reductions equal to 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 6th Order National Watershed Boundary Dataset, per guidance provided in the Virginia Stormwater Management Handbook. State and federal agencies intending to develop large tracts of land are encouraged to may develop or participate in comprehensive stormwater management plans where practicable. The local program must monitor the progress of the plan's implementation. If land uses 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. At all times throughout the plan's implementation, the local program shall assure that requirements of this Chapter are consistently met.

B. The objective of a comprehensive stormwater management plan is to address the stormwater management concerns in a given watershed and to better integrate stormwater management facilities and practices. The implementation of comprehensive stormwater management plans shall mitigate the impacts of new development, and provide for the remediation of erosion, flooding or water quality and quantity problems caused by existing development within the given watershed. Such plans do not remove the need to meet the onsite requirements set out in 4 VAC 50-60-63A.

C. If the local program allows for a pro rata fee in accordance with §15.2-2243, 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.

D. Nothing in this section shall be interpreted to diminish the applicability of any other state law or regulation.