

Part V. Criteria and Requirements for Regulated Land-Disturbing Activities

Article 3. Water Quantity and Water Quality Technical Criteria

9VAC25-875-600. Water quantity.

A. Channel protection and flood protection shall be addressed in accordance with the minimum standards set out in this section, which are established pursuant to the requirements of § 62.1-44.15:28 of the Code of Virginia or as permitted in accordance with § 62.1-44.15:27.2 of the Code of Virginia. Nothing in this section shall prohibit a locality's VESMP authority from establishing a more stringent standard in accordance with § 62.1-44.15:33 of the Code of Virginia especially where more stringent requirements are necessary to address total maximum daily load requirements or to protect exceptional state waters. Compliance with the minimum standards set out in this section shall be deemed to satisfy the requirements of subdivision 19 of 9VAC25-875-560.

B. Channel protection. Concentrated stormwater flow shall be released into a stormwater conveyance system and shall meet the criteria in subdivision 1, 2, or 3 of this subsection, where applicable, from the point of discharge to a point to the limits of analysis in subdivision 4 of this subsection.

1. Manmade stormwater conveyance systems. When stormwater from a development is discharged to a manmade stormwater conveyance system, following the land-disturbing activity, either:

- a. The manmade stormwater conveyance system shall convey the post-development peak flow rate from the two-year 24-hour storm event without causing erosion of the system. Detention of stormwater or downstream improvements may be incorporated into the approved land-disturbing activity to meet this criterion, at the discretion of the VESMP authority or department as the VSMP authority; or
- b. The peak discharge requirements for concentrated stormwater flow to natural stormwater conveyance systems in subdivision 3 of this subsection shall be met.

2. Restored stormwater conveyance systems. When stormwater from a development is discharged to a restored stormwater conveyance system that has been restored using natural design concepts, following the land-disturbing activity, either:

- a. The development shall be consistent, in combination with other stormwater runoff, with the design parameters of the restored stormwater conveyance system that is functioning in accordance with the design objectives; or
- b. The peak discharge requirements for concentrated stormwater flow to natural

stormwater conveyance systems in subdivision 3 of this subsection shall be met.

3. Natural stormwater conveyance systems. When stormwater from a development is discharged to a natural stormwater conveyance system, the maximum peak flow rate from the one-year 24-hour storm following the land-disturbing activity shall be calculated either:

a. In accordance with the following methodology:

$$Q_{\text{Developed}} = \text{I.F.} * (Q_{\text{Pre-developed}} * RV_{\text{Pre-Developed}}) / RV_{\text{Developed}}$$

Under no condition shall $Q_{\text{Developed}}$ be greater than $Q_{\text{Pre-Developed}}$ nor shall $Q_{\text{Developed}}$ be required to be less than that calculated in the equation $(Q_{\text{Forest}} * RV_{\text{Forest}}) / RV_{\text{Developed}}$; where

I.F. (Improvement Factor) equals 0.8 for sites > 1 acre or 0.9 for sites ≤ 1 acre.

$Q_{\text{Developed}}$ = The allowable peak flow rate of runoff from the developed site.

$RV_{\text{Developed}}$ = The volume of runoff from the site in the developed condition.

$Q_{\text{Pre-Developed}}$ = The peak flow rate of runoff from the site in the pre-developed condition.

$RV_{\text{Pre-Developed}}$ = The volume of runoff from the site in pre-developed condition.

Q_{Forest} = The peak flow rate of runoff from the site in a forested condition.

RV_{Forest} = The volume of runoff from the site in a forested condition; or

b. In accordance with another methodology that is demonstrated by the VESMP authority to achieve equivalent results and is approved by the department.

4. Limits of analysis. Unless subdivision 3 of this subsection is utilized to show compliance with the channel protection criteria, stormwater conveyance systems shall be analyzed for compliance with channel protection criteria to a point where either:

a. Based on land area, the site's contributing drainage area is less than or equal to 1.0% of the total watershed area; or

b. Based on peak flow rate, the site's peak flow rate from the one-year 24-hour storm is less than or equal to 1.0% of the existing peak flow rate from the one-year 24-hour storm prior to the implementation of any stormwater quantity control measures.

C. Flood protection. Concentrated stormwater flow shall be released into a stormwater conveyance system and shall meet one of the following criteria as demonstrated by use of acceptable hydrologic and hydraulic methodologies:

1. Concentrated stormwater flow to stormwater conveyance systems that currently do not experience localized flooding during the 10-year 24-hour storm event: The point of discharge releases stormwater into a stormwater conveyance system that, following the land-disturbing activity, confines the post-development peak flow rate from the 10-year 24-hour storm event within the stormwater conveyance system. Detention of stormwater or downstream improvements may be incorporated into the approved land-disturbing activity to meet this

criterion, at the discretion of the VESMP authority.

2. Concentrated stormwater flow to stormwater conveyance systems that currently experience localized flooding during the 10-year 24-hour storm event: The point of discharge either:

a. Confines the post-development peak flow rate from the 10-year 24-hour storm event within the stormwater conveyance system to avoid the localized flooding. Detention of stormwater or downstream improvements may be incorporated into the approved land-disturbing activity to meet this criterion at the discretion of the VESMP authority or department as the VSMP authority; or

b. Releases a post-development peak flow rate for the 10-year 24-hour storm event that is less than the predevelopment peak flow rate from the 10-year 24-hour storm event. Downstream stormwater conveyance systems do not require any additional analysis to show compliance with flood protection criteria if this option is utilized.

3. Limits of analysis. Unless subdivision 2 b of this subsection is utilized to comply with the flood protection criteria, stormwater conveyance systems shall be analyzed for compliance with flood protection criteria to a point where:

a. The site's contributing drainage area is less than or equal to 1.0% of the total watershed area draining to a point of analysis in the downstream stormwater conveyance system;

b. Based on peak flow rate, the site's peak flow rate from the 10-year 24-hour storm event is less than or equal to 1.0% of the existing peak flow rate from the 10-year 24-hour storm event prior to the implementation of any stormwater quantity control measures; or

c. The stormwater conveyance system enters a mapped floodplain or other flood-prone area, adopted by ordinance, of any locality.

D. Increased volumes of sheet flow resulting from pervious or disconnected impervious areas or from physical spreading of concentrated flow through level spreaders shall be identified and evaluated for potential impacts on down-gradient properties or resources. Increased volumes of sheet flow that will cause or contribute to erosion, sedimentation, or flooding of down gradient properties or resources shall be diverted to a stormwater management facility or a stormwater conveyance system that conveys the runoff without causing down-gradient erosion, sedimentation, or flooding. If all runoff from the site is sheet flow and the conditions of this subsection are met, no further water quantity controls are required.

E. For purposes of computing predevelopment runoff, all pervious lands on the site shall be assumed to be in good hydrologic condition in accordance with the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) standards, regardless of conditions existing at the time of computation. Predevelopment runoff calculations utilizing other hydrologic conditions may be utilized provided that it is demonstrated to and approved by the VESMP authority that actual site conditions warrant such considerations.

F. Predevelopment and post-development runoff characteristics and site hydrology shall be verified by site inspections, topographic surveys, available soil mapping or studies, and calculations consistent with good engineering practices. Guidance provided in the Virginia

Stormwater Management Handbook and the Virginia Stormwater BMP Clearinghouse shall be considered appropriate practices.

Statutory Authority

§62.1-44.15:28 of the Code of Virginia.

Historical Notes

Derived from Virginia Register Volume 40, Issue 8, eff. July 1, 2024.