

Stormwater Management Ordinance From Chapter 23 of the County of Roanoke Code

Table of Contents

Introduction.....	3
Section 23-1 General Provisions	4
23-1.1 Title and Authority	4
23-1.2 Purpose	4
23-1.3 Applicability	5
23-1.4 Compatibility with Other Requirements.....	6
23-1.5 Severability.....	6
23-1.6 Stormwater Management Design Manual	6
Section 23-2 Definitions	7
Section 23-3 Program Permit Procedures and Requirements.....	15
23-3.1 Permit Required.....	15
23-3.2 Permit Application Requirements	15
23-3.3 Stormwater Management Plans.....	16
23-3.4 Stormwater Management Facility Maintenance Agreements	16
23-3.5 Performance Bonds.....	17
23-3.6 Permit Application Review Fees	18
23-3.7 Permit Application Procedure	18
Section 23-4 Variances.....	20
23-4.1 Variances for Providing Stormwater Management	20
23-4.2 Appeals	21
Section 23-5 General Criteria for Stormwater Management	22
23-5.1 General.....	22
23-5.2 Structural Stormwater Management Practices	24
23-5.3 Water Quality	26
23-5.4 Stream Channel Erosion	30
23-5.5 Flooding.....	30
23-5.6 Regional Stormwater Management Plans.....	31
23-5.7 Illicit Discharges.....	32
23-5.8 Steep Slopes.....	33
Section 23-6 Construction Inspection Provisions.....	34
23-6.1 Notice of Construction Commencement	34
23-6.2 Final Inspection and As-Built Documentation	35

Section 23-7 Maintenance and Repair of Stormwater Facilities37
23-7.1 Maintenance Inspections of Stormwater Facilities.....37
23-7.2 Records of Maintenance and Repair.....37

Section 23-8 Enforcement and Penalties.....38
23-8.1 Violations.....38
23-8.2 Notice of Violation38
23-8.3 Stop Work Orders39
23-8.4 Civil and Criminal Penalties.....39
23-8.5 Restoration of Lands.....40

Chapter 23

Stormwater Management Ordinance

County of Roanoke, Virginia

Introduction

The County of Roanoke is home to a vast array of scenic natural resources, from the mountains that span our landscape to the streams that flow through our valleys. This picturesque environment has embraced generations of citizens while drawing in more newcomers every year. The continual increase in population aids in the growth and development of this area, improving jobs and enhancing economic stability. Yet, intensive development can degrade those beautiful natural resources that make the County of Roanoke so valuable.

Inadequate management of stormwater runoff from land-disturbing activities in watersheds increases flood flows and velocities, erodes and/or silts stream channels, pollutes water, overloads existing drainage facilities, undermines floodplain management in downstream communities, reduces groundwater recharge, and threatens public safety. More specifically, surface water runoff can carry pollutants into receiving waters.

According to the U.S. Environmental Protection Agency's 2004 National Water Quality Inventory, approximately 40 % of surveyed U.S. water bodies do not meet basic water quality standards. The Roanoke River and many of its tributaries inside Roanoke County are listed as impaired waters by the Virginia Department of Environmental Quality.

Many future problems can be avoided through proper stormwater management and the County of Roanoke is dedicated to preventing the damaging effects that uncontrolled stormwater may present. The lands and waters of Roanoke County are great natural resources and need to be protected. The County finds that it is in the public interest to establish a stormwater management program.

SECTION 23-1

GENERAL PROVISIONS

Section 23-1.1 TITLE AND AUTHORITY

- A. This ordinance shall be known as the “Stormwater Management Ordinance of the County of Roanoke, Virginia.”
- B. The Virginia Stormwater Management Law (“Law”), Title 10.1-603.2:1 of the Code of Virginia (1950), as amended, enables localities to adopt, by ordinance, a stormwater management program consistent with state regulations promulgated pursuant to the Law.

Section 23-1.2 PURPOSE

The purpose of this ordinance is to establish minimum stormwater management requirements and controls to protect properties, safeguard the general health, safety, and welfare of the public residing in watersheds within the County of Roanoke, Virginia, and protect aquatic resources. This ordinance seeks to meet that purpose through the following objectives:

- 1. Require that land-disturbing activities maintain the after-development runoff characteristics, as nearly as practicable, as the pre-development runoff characteristics in order to reduce flooding, siltation, stream bank erosion, and property damage associated with land-disturbing activities.
- 2. Establish minimum design criteria for the protection of properties and aquatic resources downstream from land-disturbing activities from damages due to increases in volume, velocity, frequency, duration, and peak flow rate of storm water runoff;
- 3. Establish minimum design criteria for measures to minimize non-point source pollution from stormwater runoff which would otherwise degrade water quality;
- 4. Establish provisions for the long-term responsibility for and maintenance of stormwater management control devices and other techniques specified to manage the quality and quantity of runoff; and
- 5. Establish certain administrative procedures for the submission, review, approval, and disapproval of stormwater plans, and the inspection of approved projects.

Section 23-1.3 APPLICABILITY

- A. This ordinance shall be applicable to all subdivision, site plan, land-disturbing, or land use conversion applications including denuding and mass grading, unless eligible for a variance by the County of Roanoke under the specifications of Section 23-4 of this ordinance.
- B. The ordinance shall be applicable to land-disturbing activities that are smaller than the minimum applicability criteria if such activities are part of a larger common plan of development that meets the applicability criteria, even though multiple separate and distinct land-disturbing activities may take place at different times on different schedules.
- C. All plans must be reviewed by the County of Roanoke to ensure that established water quality standards will be maintained during and after development of the site and that post construction runoff levels are consistent with any local and regional watershed plans.
- D. To prevent the adverse impacts of stormwater runoff, the County of Roanoke has developed a set of performance standards that must be met at new land-disturbance activity sites. These standards apply to any land-disturbing activity disturbing 5,000 square feet or more of land.
- E. The following activities are exempt from these stormwater performance criteria:
 - 1. Permitted surface or deep mining operations and projects, or oil and gas operations and projects conducted under the provisions of Title 45.1 of the Code of Virginia (1950), as amended;
 - 2. Tilling, planting or harvesting of agricultural, horticultural, or forest crops;
 - 3. Single-family residences separately built and not part of a subdivision, including additions or modifications to existing single-family detached residential structures;
 - 4. Residential land-disturbing activities that disturb less than 5,000 square feet of land area;
 - 5. Linear development projects, provided that (i) less than 5,000 square feet of land will be disturbed per outfall, (ii) the resulting increase in the peak flow discharge from a 10-year storm event is less than 0.5 cubic feet per second (cfs), and (iii) there are no existing or anticipated flooding or erosion problems downstream of the discharge point as determined by the County of Roanoke.

- F. Any additions, extensions, and/or modifications to development which were previously exempt shall provide stormwater management for the entire combined development when the acreage limitations are exceeded.
- G. State projects are not exempt from the requirements of this ordinance.

Section 23-1.4 COMPATABILITY WITH OTHER REQUIREMENTS

This ordinance is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of law. The requirements of this ordinance should be considered minimum requirements, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall apply.

Section 23-1.5 SEVERABILITY

If the provisions of any article, section, subsection, paragraph, subdivision or clause of this Ordinance shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any article, section, subsection, paragraph, subdivision or clause of this Ordinance.

Section 23-1.6 STORMWATER MANAGEMENT DESIGN MANUAL

- A. The County of Roanoke will utilize the policy, criteria and information including specifications and standards of the County of Roanoke Stormwater Management Design Manual for the proper implementation of the requirements of this ordinance. This document shall include a list of acceptable stormwater treatment practices, including the specific design criteria for each stormwater practice.
- B. The County of Roanoke Stormwater Management Design Manual may be updated and revised from time to time, based on improvements in engineering, science, monitoring and local maintenance experience. The County Administrator shall authorize and approve any updates, supplements, or modifications to the County of Roanoke Stormwater Management Design Manual.
- C. Stormwater treatment practices that are designed and constructed in accordance with these design and sizing criteria will be presumed to meet the minimum water quality performance standards.

SECTION 23-2

DEFINITIONS

The following words and terms, as used in this Chapter, shall have the following meanings unless the context requires a different meaning:

“Adequate channel” means a channel that will convey the designated frequency storm event without overtopping the channel bank nor cause erosive damage to the channel bed or banks.

“Applicant” means any person submitting a stormwater management plan for approval.

“Aquatic bench” means a 10- to 15- foot wide bench around the 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, defined to be 16 %.

“Best Management Practice or BMP” means schedules of activities, prohibitions of practices, including both a structural or nonstructural practice, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities. BMPs include, but are not limited to, treatment requirements, operating procedures, and practices to control 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 collection pipe system beneath the planting bed.

“Board” means the Virginia Soil and Water Conservation Board.

“Channel” means a natural or manmade waterway.

“Clean Water Act or CWA” means the federal Clean Water Act (33 United States Code 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.

“Conservation easement” means a legal agreement through which a landowner gives up certain uses and development rights to the property for purposes of conservation by way of a series of restrictions while maintaining ownership and management rights to the property.

“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.

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

“County” means the County of Roanoke, Virginia.

“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 two or more residential dwelling units.

“Director” means the Director of Community Development or his designee.

“Discharge” means to dispose, deposit, spill, pour, inject, dump, pump, leak, or place by any means, or that which is disposed, deposited, spilled, poured, injected dumped, pumped, leaked, or placed by any means.

“Drainage easement” means a legal right granted by a land owner to a grantee allowing the use of private land for storm drainage conveyance.

“Easement” means a legal right granted by a land owner to a grantee allowing the use of private land for a designated use.

“Ephemeral stream” means a stream channel or reach of a stream channel that carries surface water runoff flow only during, and for a short durations as the result of, precipitation events, including snowmelt and rainfall and that has a channel bottom that is always above the groundwater table.

“Erosion and sediment control plan” means a document containing information and material necessary for the conservation of soil and water resources of a lot or lots, in compliance with Chapter 8.1 of the Roanoke County Code.

“Fee in lieu” means a payment of money in place of meeting all or part of the storm water performance standards required by this ordinance.

“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.

“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.

“Hotspot” means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

“Hydrologic soil group or HSG” means a Natural Resource Conservation Service classification system in which soils are categorized into four runoff potential groups. The groups range from A soils, with high permeability and little runoff production, to D soils, which have low permeability rates and produce much more runoff.

“Illicit connection” means any point source discharge to the County of Roanoke’s storm sewer system or to the waters of the United States, which is not composed entirely of stormwater and is not authorized by a NPDES permit. Failure of an industrial facility or construction site to notify the County of Roanoke’s Director of Community Development of a connection to the County of Roanoke’s storm sewer system constitutes an illicit connection.

“Illicit discharge” means any discharge to the storm sewer system or to the waters of the United States that is not composed entirely of stormwater, with the exception of discharges which are exempt pursuant to paragraph 23-5.7 of this Ordinance. Any discharge in violation of a VSMP, NPDES or VPDES or other stormwater discharge permit shall constitute an illicit discharge.

“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.

“Industrial wastes” means liquid or wastes resulting from any process of industry, manufacture, trade, or business, or from the development of any natural resource.

“Infiltration facility” means a stormwater management facility that temporarily impounds runoff and discharges it 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 non-rainfall 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 this chapter.

“Intermittent stream” means a stream channel or reach of a stream channel that carries surface water runoff flow for only part of the year, typically during winter and spring when the channel bottom is below the groundwater table and which flow may be heavily supplemented by stormwater runoff.

“Jurisdictional wetland” means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

“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 Clean Water Act and this chapter.

“Land disturbing permit” means a permit issued by the County of Roanoke for the clearing, filling, excavating, grading, transporting of land, or for any combination thereof or for any purpose set forth herein.

“Land owner” or **“Property owner”** means the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

“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. Roads constructed in association with residential, commercial, or industrial site development are not considered linear development projects.

“Local stormwater management program” or **“Local program”** means a statement of the various methods employed by a locality 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, inspection, enforcement, and evaluation consistent with 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.

“Maintenance agreement” or “Facility maintenance agreement” means a legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of storm water management practices.

“Manmade” means constructed by man.

“Municipal separate storm sewer system” or “MS4” means a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system, including drainage systems, catch basins, curbs, gutters, ditches, manmade channels, or storm drains that are owned and operated by a public body, and designed or used for collecting or conveying stormwater.

“National Pollutant Discharge Elimination System or NPDES” means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits and imposing and enforcing pretreatment requirements under Sections 307, 318, 402, and 405 of the Clean Water Act. The term includes an approved program.

“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.

“Off-site facility” means a stormwater management measure located outside the subject property boundary described in the permit application for land-disturbing activity.

“Other wastes” means wastes that can adversely affect waters of the United States when discharged into those waters, including, but not limited to, garbage, refuse, lime, fertilizer, ashes, offal, tar, paint, solvents, petroleum products, antifreeze, and other chemicals.

“Owner” means the owner or owners of the freehold of the premises or lesser estate therein, a mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee, lessee or other person, firm or corporation in control of a property.

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

“Perennial stream” means a stream channel or reach of a stream channel that carries surface water runoff year round, and that has a channel bottom that is located below the groundwater table for most of the year.

“Permit” means an approval issued by the County of Roanoke for the initiation of a land-disturbing activity.

“Permittee” means the person to which a permit is issued.

“Person” means any individual, corporation partnership, firm, association, joint venture, public or private or municipal corporation, trust, estate, commission, board, public or private institution, utility, cooperative, county, city, town or other political subdivision of the Commonwealth, any interstate or governmental body or any other legal entity, or any agent or employee of any such person.

“Plan-approving authority” means the County of Roanoke Department of Community Development, which shall be responsible for determining the adequacy of a submitted stormwater management plan.

“Planning area” means a designated portion of the parcel on which the land-disturbing activity 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 agriculture stormwater runoff.

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

“Pre-development” refers to the conditions that exist at the time that plans for the land development of a tract of land are approved by the plan approving 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, to a maximum of 5 years prior to plan approval, shall establish pre-development conditions.

“Program authority” means a district, county, city or town which has adopted a stormwater management program which as been approved by the Virginia Board of Conservation and Recreation.

“Recharge” means the replenishment of underground water reserves.

“Redevelopment” means the process of developing land that is or has been previously developed.

“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 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.

“Runoff” or **“Stormwater runoff”** means that portion of precipitation that is discharged across the land surface or through conveyances to one or more waterways.

“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.

“Shallow marsh” means a zone within a stormwater extended detention facility 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 base flow, groundwater supply, or a sizeable drainage area to maintain the desired water surface elevations to support emergent vegetation

“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-disturbing activity is located.

“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.

“Steep slope” means any slope greater than 1 vertical to 3 horizontal ratio or 33.3 percent slope.

“Storm sewer system” or “Storm drainage system” means the conveyance or system of conveyances located within County of Roanoke, which are designed or used for collecting, storing, or conveying stormwater or through which stormwater is collected, stored, or conveyed, including, but not limited to roads, streets, catch basins, drop inlets, curbs, gutters, ditches, pipes, lakes, ponds, man-made channels, storm drains, outfalls, retention, detention, and infiltration basins, and other facilities.

“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 non-rainfall periods.

“Stormwater extended detention basin” or “Extended detention basin” means a stormwater management facility that temporarily impounds runoff and discharges it through a hydraulic structure over a 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 non-rainfall 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 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 division of a parcel of land into two (2) or more parcels of any size by the establishment of new boundaries lines or by the adjustment, relocation, or vacation of existing boundary lines, for the purpose whether immediate or future, of transfer of ownership or building development. A subdivision includes all changes in street or lot lines, and any portion of any such subdivision previously recorded in which building development or street creation occurs, or is required, subsequent to such recordation. The transfer of ownership of land to the Commonwealth of Virginia or a political subdivision thereof and the division of lands by court order or decree shall not be deemed a subdivision as otherwise herein defined.

“Total Maximum Daily Load or TMDL” means a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards.

“Town” means the incorporated Town of Vinton.

“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 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 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 Program” or **“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 Permit” or **“VSMP Permit”** means a document issued by the permit-issuing authority pursuant to the Virginia Stormwater Management Act 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.

“Water quality volume or WQV” means the volume equal to the first ½ inch of runoff multiplied by the impervious surface of the land-disturbing activity.

“Watercourse” means a lake, creek, stream, wash, channel, or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

“Waters of the United States” is as defined in 40 CFR 122.2 as “(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) All interstate waters, including interstate “wetlands;” (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, “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: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce; (d) All impoundments of waters otherwise defined as waters of the United States under this definition; (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition; (f) The territorial sea; and (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.”

“Watershed” means a defined land area drained by a river, stream, drainage ways or system of connecting rivers, streams, or drainage ways such that all surface water within the area flows through a single outlet.

“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.

SECTION 23-3

PROGRAM PERMIT PROCEDURES AND REQUIREMENTS

Section 23-3.1 PERMIT REQUIRED

- A. No land owner or land operator shall receive any building, grading or other land development permits required for land-disturbing activities without first meeting the requirements of this ordinance prior to commencing the proposed activity.
- B. Should a land-disturbing activity associated with an approved plan in accordance with this section not begin during the 180-day period following approval or cease for more than 180 days, the County of Roanoke may evaluate the existing approved stormwater management plan to determine whether the plan still satisfies local program requirements and to verify that all design factors are still valid. If the authority finds the previously filed plan to be inadequate, a modified plan shall be submitted and approved prior to the resumption of land-disturbing activities.
- C. No land development permit, building permit, or other land-disturbing activity shall be granted or extended for more than five (5) consecutive years from the date of the original permit issuance without reevaluation of the stormwater management requirements of this Ordinance.

Section 23-3.2 PERMIT APPLICATION REQUIREMENTS

- A. Unless specifically exempted by this ordinance, any land owner or operator desiring a permit for a land disturbance activity shall submit to the County of Roanoke a permit application on a form provided by the County of Roanoke for that purpose.
- B. Unless specifically exempted by this ordinance, a permit application must be accompanied by the following in order that the permit application be considered:
 - 1. Stormwater management plan in accordance with Section 23-3.3;
 - 2. Maintenance agreement in accordance with Section 23-3.4;
 - 3. Performance bond in accordance with Section 23-3.5;
 - 4. Permit application and plan review fee in accordance with Section 23-3.6; and
- C. Permit applications shall comply with the requirements contained within the Roanoke County Land Development Procedures that is available at the County of Roanoke Department of Community Development office.

Section 23-3.3 STORMWATER MANAGEMENT PLANS

- A. No application for land development, land use conversion, or land-disturbing activity will be approved unless it includes a stormwater management plan, as required by this ordinance, detailing how runoff and associated water quality impacts resulting from the activity will be controlled or managed.
- B. No building, grading, or sediment control permit shall be issued until a satisfactory stormwater management plan, or a variance thereof, shall have undergone a review and been approved by County of Roanoke after determining that the plan or variance is consistent with the requirements of this Ordinance.
- C. Submittal, review, approval, and resubmittal of stormwater management concept and design plans shall comply with the requirements set forth in the Roanoke County Land Development Procedures.

Section 23-3.4 STORMWATER MANAGEMENT FACILITY MAINTENANCE AGREEMENTS

Prior to the issuance of any permit that has a stormwater management facility as one of the requirements of the permit, the permittee or owner of the site must execute an access easement agreement and a formal maintenance covenant that shall be binding on all subsequent owners of land served by the stormwater management facility.

- A. Access Easement Agreement
 - 1. The Access Easement Agreement shall provide for access to stormwater management facilities at reasonable times for periodic inspection by the County of Roanoke, or their contractor or agent, and for regular assessments of land owners to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by this ordinance. The easement agreement shall be recorded by County of Roanoke in the land records.
 - 2. When any new stormwater management facility is installed on private property, or when any new connection is made between private property and a public storm drainage system, duly authorized employees, agents, or representatives of the County of Roanoke shall be authorized to enter any public or private property at any reasonable time for the purpose of inspection. This includes the right to enter a property when it has a reasonable basis to believe that a violation of this ordinance is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this ordinance.

B. Maintenance Covenants

1. Maintenance of all stormwater management facilities shall be ensured through the creation of a formal maintenance covenant that must be approved by County of Roanoke and recorded into the land record prior to final plan approval. The covenant shall identify by name or official title the person(s) responsible for carrying out the maintenance.
2. Responsibility for the operation and maintenance of stormwater management facilities, unless assumed by a governmental agency, shall remain with the property owner and shall pass to any successor or owner. If portions of the land are to be sold, legally binding arrangements shall be made to pass the basic responsibility to successors in title. These arrangements shall designate for each land owner, governmental agency, or other legally established entity to be permanently responsible for maintenance.
3. As part of the covenant, a schedule shall be developed for when and how often maintenance will occur to ensure proper function of the stormwater management facility. The covenant shall also include plans for periodic inspections to ensure proper performance of the facility between scheduled maintenance and should also include “failure to maintain” provisions.
4. In the event that maintenance or repair is neglected, or the stormwater management facility becomes a danger to public health, safety, or the environment, the County of Roanoke reserves the authority to perform the work and to recover the costs from the land owner.

Section 23-3.5 PERFORMANCE BONDS

- A. The County of Roanoke may, at its discretion, require the submittal of a performance security or bond with surety, cash escrow, letter of credit or other acceptable legal arrangement, all of which shall be in a form approved by the County of Roanoke, prior to issuance of a permit in order to ensure that the stormwater practices are installed by the permittee as required by the approved stormwater management plan.
- B. The amount of the installation performance security shall be the total estimated construction cost of the storm drainage systems and stormwater management facilities approved under the permit, plus 10%.
- C. The performance security shall contain forfeiture provisions for failure, after proper notice, to complete work within the time specified, or to initiate or maintain appropriate actions which may be required of the permittee in accordance with the approved stormwater management plan.

- D. If the County of Roanoke takes such action upon such failure by the permittee, the County of Roanoke may collect from the permittee the difference should the amount of the reasonable cost of such action exceed the amount of the security held.
- E. At the request of the permittee, at the completion of the requirements of the approved stormwater management plan in the form of certified as-built report and survey, such bond, cash escrow, letter of credit or other legal arrangement, shall be refunded to the permittee or terminated.
- F. These requirements are in addition to all other provisions of the County of Roanoke ordinances relating to the issuance of such plans and are not intended to otherwise affect the requirements for such plans.

Section 23-3.6 PERMIT APPLICATION REVIEW FEES

There shall be a reasonable fee charged for the processing of stormwater management permit applications. Applicants shall submit a plan review and permit fee to the County of Roanoke at the time of submission of the stormwater management plan. Such fee schedule shall be established by resolution of the Roanoke County Board of Supervisors and a copy shall be maintained in the County of Roanoke Department of Community Development office.

Section 23-3.7 PERMIT APPLICATION PROCEDURE

- A. Applications for land disturbance activities, and all related construction activity and plans may be filed with the County of Roanoke on any regular business day.
- B. Permit applications and the stormwater management plan shall include all of the information required by the County of Roanoke Stormwater Management Design Manual.
- C. Permit applications and the stormwater management plan will be reviewed in accordance with the Roanoke County Land Development Procedures.
- D. If the permit application, stormwater management plan and maintenance agreement are approved by the County of Roanoke, the following conditions apply:
 - 1. The applicant shall comply with all applicable requirements of the approved plan and this ordinance and shall certify that all land clearing, construction, land disturbance and drainage will be done according to the approved plan.

2. The land-disturbing activity and development shall be conducted only within the area specified in the approved plan.
 3. The County of Roanoke shall be allowed to conduct periodic inspections of the project.
 4. The person responsible for implementing the approved plan shall conduct monitoring and submit reports as the County of Roanoke may require to ensure compliance with the approved plan and to determine whether the plan provides effective stormwater management.
 5. No changes may be made to an approved plan without review and written approval by the County of Roanoke.
 6. A certified inspection, in accordance with Section 23-6.2, of all aspects of the stormwater management facility construction, including surface as-built surveys, and geotechnical inspections during subsurface or backfilling and compaction activities shall be required.
- E. Where a construction project or a land disturbance activity has not been completed within five (5) years of the approval of the stormwater management plan, the applicant shall revise, if necessary, and resubmit the stormwater management plan to the County of Roanoke for review. The County of Roanoke shall review the resubmitted stormwater management plan in accordance with the requirements set forth in this Ordinance.

SECTION 23-4

VARIANCES

Section 23-4.1 VARIANCES FOR PROVIDING STORMWATER MANAGEMENT

- A. Every applicant shall provide for stormwater management, unless they file a written request for a variance to this requirement. Requests for variance to the stormwater management plan requirements shall be submitted in writing to the County of Roanoke Director of Community Development for approval.
- B. A variance from the stormwater management regulations may be granted by the County of Roanoke Director of Community Development, provided that: (i) the variance to the criteria are the minimum necessary to afford relief and (ii) reasonable and appropriate conditions shall be imposed as necessary upon any variance granted so that the intent of this ordinance is preserved.
- C. The minimum requirements for stormwater management may be granted a variance in whole or in part upon written request of the applicant, provided that at least one of the following conditions applies:
1. It can be demonstrated that the proposed development will not impair attainment of the objectives of this ordinance.
 2. Alternative minimum requirements for on-site management of stormwater discharges have been established in a stormwater management plan that has been approved by the County of Roanoke and that is required to be implemented by local ordinance.
 3. Provisions are made to manage stormwater by an off-site facility. The off-site facility is required to be in place, designed and adequately sized to provide a level of stormwater control that is equal to or greater than that which would be afforded by on-site practices and has a legally obligated entity responsible for long-term operation and maintenance of the stormwater practice.
 4. The County of Roanoke finds that meeting the minimum on-site management requirements is not feasible due to the natural or existing physical characteristics of a site.
 5. The County of Roanoke may waive the requirements for stormwater management for **quantity only** in cases where site development has an increase of less than 0.5 cubic feet per second discharge based on a 10-year frequency discharge rate.

- D. Economic hardship is not a reason to grant a variance from the requirements of this chapter.
- E. In instances in which C.1 through C.5 applies, the County of Roanoke may grant a variance from strict compliance with stormwater management provisions when not reasonably achieved, provided that acceptable mitigation measures are provided. However, to be eligible for a variance, the applicant must demonstrate to the satisfaction of the County of Roanoke that the downstream waterways will not be subject to:
 - 1. Deterioration of existing culverts, bridges, dams, and other structures;
 - 2. Deterioration of biological functions or habitat;
 - 3. Accelerated streambank or streambed erosion or siltation;
 - 4. Increased threat of flood damage to public health, life and property.
- F. Fee-In-Lieu Options
 - 1. If a regional stormwater management facility, designed to control stormwater quantity or quality, currently operates or is scheduled to be constructed downstream of the proposed development, the County of Roanoke has the option to require the developer to pay a fee for its share of the responsibility of the regional stormwater management facility.
 - 2. Paying a fee-in-lieu of stormwater management practices does not relieve the developer of meeting any requirements of this stormwater ordinance other than the negotiated relief. The developer is responsible for ensuring that downstream properties are not negatively impacted by stormwater flow, velocity, or quality leaving the developed site.

Section 23-4.2 APPEALS

Any applicant under the provision of this ordinance, who is aggrieved by any action of the County of Roanoke or its agent in approving or disapproving any action set forth by this ordinance, shall have the right to apply for and receive a review of such action by the Roanoke County Board of Supervisors. In reviewing the agent's actions, the Board of Supervisors shall consider evidence and opinions presented by the aggrieved applicant and agent. After considering the evidence and opinions, the Board of Supervisors decision shall be final. Any applicant who seeks an appeal hearing before the Board of Supervisors shall be heard at the next regularly scheduled Board of Supervisors public hearing provided that the Board of Supervisors and other involved parties have at least 30 days prior notice.

Final decisions of the County of Roanoke under this ordinance shall be subject to review by the County of Roanoke Circuit Court, provided an appeal is filed within 30 days from the date of any written decision adversely affecting the rights, duties, or privileges of the person engaging in or proposing to engage in land-disturbing activities.

SECTION 23-5

GENERAL CRITERIA FOR STORMWATER MANAGEMENT

For general and specific criteria for stormwater management calculations, designs, and implementation, reference the County of Roanoke Stormwater Management Design Manual. The following technical criteria shall be applied on all applicable land-disturbing activities.

Section 23-5.1 GENERAL

- A. Determination of flooding and channel erosion impacts to receiving streams due to land-disturbing activities shall be measured at each point of discharge from the land disturbance and such determination shall include any runoff from the balance of the watershed which also contributes to that point of discharge.
- B. The specified design storms shall be defined as either a 24-hour storm using the rainfall distribution recommended by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) when using NRCS methods, or as the storm of critical duration that produces the greatest required storage volume at the site when using a design method such as the Modified Rational Method.
- C. For purposes of computing runoff, all pervious lands in the site shall be assumed prior to disturbance 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.
- D. For land disturbing activities, pre-development runoff quantities shall be computed based on pre-construction land conditions that existed over the past five (5) years prior to the application date that results in the lowest pre-development peak rate of runoff.

For sites being redeveloped, pre-development conditions runoff quantities shall be computed based on the site conditions that existed over the past five (5) years prior to the application date that results in the highest pre-development peak rate of runoff.

- E. Construction of stormwater management facilities or modifications to channels shall comply with all applicable laws and regulations. Evidence of approval of all necessary permits shall be presented.
- F. Impounding structures that are not covered by the Impounding Structure Regulations (4VAC 50-20) shall be engineered for structural integrity during the 100-year storm event.

- G. Pre-development and post-development runoff rates shall be verified by calculations that are consistent with good engineering practices.
- H. Outflows from a stormwater management facility or stormwater conveyance system shall be discharged to an adequate channel as described in Chapter 5.3 of the County of Roanoke Stormwater Management Design Manual.
- I. Proposed residential, commercial, or industrial subdivisions shall apply these stormwater management criteria to the land disturbance as a whole. Individual lots in new subdivisions shall not be considered separate land-disturbing activities, but rather the entire subdivision shall be considered a single land-disturbing activity. Hydrologic parameters shall reflect the ultimate land disturbance and shall be used in all engineering calculations.
- J. All stormwater management facilities shall have an inspection and maintenance plan which identifies the owner and the responsible party for carrying out the inspection and maintenance plan.
- K. Construction of stormwater management impoundment structures within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain shall be avoided to the extent possible. When this is unavoidable, all stormwater management facility construction shall be in compliance with all applicable regulations under the National Flood Insurance Program, 44 CFR Part 59.

Site development within the FEMA designated 100-year floodplain shall be in accordance with the County of Roanoke requirements set forth in Section 30-74 of the County of Roanoke Zoning Ordinance.

- L. Natural channel characteristics shall be preserved to the maximum extent practicable.
- M. Land-disturbing activities shall comply with the Erosion and Sediment Control Ordinance of the County of Roanoke, Virginia.
- N. Non-structural stormwater practices and low impact development (LID) practices designed to reduce the volume of stormwater runoff are encouraged to reduce the amount of stormwater runoff that must be managed. This will help to minimize the reliance on structural practices which require ongoing maintenance in order to be effective.
 - 1. The County of Roanoke may allow non-structural stormwater practices to be used in conjunction with or in place of structural measures in order to satisfy, partially or in whole, the requirements of this ordinance, if the performance and implementation standards of such measures are documented in peer reviewed technical literature, are acceptable to the

County of Roanoke based on its exercise of sound professional judgment, and the County of Roanoke finds that the measures would achieve equivalent benefit for water quantity or water quality protection as would otherwise be provided by structural measures.

2. Non-structural site and LID development measures may include, but are not limited to, maintaining undisturbed naturally vegetated areas, minimization of impervious surfaces, stream buffer restoration, providing additional stream buffer areas, wetland restoration, water reuse and recycling, and development design that reduces the rate, time of concentration, and volume of stormwater runoff.
- O. The design of all stormwater management facilities and structures shall incorporate appropriate safety measures which may include safety ledges, fencing, warning signs, anti-vortex devices, stadia rod indicating depth at the lowest point, outlet structures designed to limit public access, and other appropriate measures as applicable.
- P. Outlets from stormwater management facilities shall be designed to function without manual, electrical, or mechanical controls.

Section 23-5.2 STRUCTURAL STORMWATER MANAGEMENT PRACTICES

A. Minimum Control Requirements

1. All stormwater management practices shall be designed so that the specific storm frequency peak discharge flow rate and storage volumes are met, unless County of Roanoke grants the applicant a variance or the applicant is exempt from such requirements.
2. If hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, as determined by the County of Roanoke, the County of Roanoke reserves the right to impose additional requirements deemed necessary to protect downstream properties and aquatic resources from damage due to increased volume, frequency, and rate of stormwater runoff.

B. Site Design Feasibility

Stormwater management practices for a site shall be chosen based on the physical conditions of the site. Among the factors that should be considered:

1. Topography
2. Maximum drainage area
3. Depth to water table
4. Soils

5. Slopes
6. Terrain
7. Hydraulic head
8. Location in relation to environmentally sensitive features

C. Conveyance Issues

All stormwater management practices shall be designed to convey stormwater to allow for the maximum removal of pollutants and reduction in flow velocities. This shall include, but not be limited to:

1. Maximizing of flowpaths from inflow points to outflow points
2. Protection of inlet and outfall structures
3. Elimination of erosive flow velocities
4. Providing of underdrain systems, where applicable

D. Pretreatment Requirements

Stormwater treatment practices may be required to have an acceptable form of water quality pretreatment. Stormwater infiltration practices or practices having an infiltration component are prohibited, even with pretreatment, in the following circumstances:

1. Where bedrock, impermeable strata or clay lenses, or groundwater is present within 3 feet below the invert of the infiltration practice;
2. Where the infiltration practice will be placed in fill material;
3. Where the infiltration practice will be placed in soils with 30 percent or greater clay content, or the soils have an infiltration rate of less than 0.52 inches per hour or greater than 8.27 inches per hour;
4. Where the infiltration practice will be placed on a slope of greater than 20 percent;
5. Where the infiltration practice is within 20 feet downgradient of a structure or 100 feet upgradient of a structure, or within 100 feet of a drinking water well, or within 20 feet of a wastewater septic tank or drain field;
6. Where the underlying geology is defined as karst geology;
7. Where stormwater is generated from highly contaminated source areas known as “hotspots” or where stormwater runoff includes a contaminated non-stormwater component;

8. Where stormwater is being managed in a designated groundwater recharge area.

E. Treatment/Geometry Conditions

All stormwater management practices shall be designed to capture and treat stormwater runoff according to the specifications outlined in the County of Roanoke Stormwater Management Design Manual. These specifications will designate the water quality treatment and water quantity criteria that apply to an approved stormwater management practice.

F. Landscaping Plans Required

All stormwater management practices must have a landscaping plan detailing both the vegetation to be in the practice and how and who will manage and maintain this vegetation. This plan must be prepared by a qualified individual familiar with the selection of emergent and upland vegetation appropriate for the selected BMP.

G. Maintenance Agreements

A legally binding covenant specifying the parties responsible for the proper maintenance of all stormwater treatment practices shall be secured prior to issuance of any permits for land disturbance activities. In addition, all stormwater treatment practices shall have an enforceable operation and maintenance agreement to ensure the system functions as designed. This agreement will include any and all access easements required for the County of Roanoke to periodically access and inspect the stormwater treatment practices.

Section 23-5.3 WATER QUALITY

Unless judged by the County of Roanoke for a project to be exempt, the following criteria shall be addressed for stormwater management at all land-disturbing activities:

- A. All stormwater runoff from land-disturbing activities impervious areas shall be treated by appropriate best management practices prior to leaving the property unless BMPs are not required to meet the water quality requirements of this Chapter.
- B. Compliance with the water quality criteria may be achieved by applying the performance-based or the technology-based criteria to either the site or a planning area.
- C. **Performance-based criteria.** For land-disturbing activities, the calculated post-development non-point source pollutant runoff load shall be compared to the calculated pre-development load based upon the average land cover condition or the existing site condition. BMPs shall be located, designed, and maintained to

achieve the target pollutant removal efficiencies specified in Table 1 to effectively reduce the pollutant load to the required level based upon the following four applicable land development situations for which the performance criteria apply:

1. Situation 1 consists of land-disturbing activities where the existing percent impervious cover is less than or equal to the average land cover condition and the proposed improvements will create a total percent impervious cover which is less than the average land cover condition.

Requirement: No reduction in the after disturbance pollutant discharge is required.

2. Situation 2 consists of land-disturbing activities where the existing percent impervious cover is less than or equal to the average land cover condition and the proposed improvements will create a total percent impervious cover which is greater than the average land cover condition.

Requirement: The pollutant discharge after disturbance shall not exceed the existing pollutant discharge based on the average land cover condition.

3. Situation 3 consists of land-disturbing activities, where the existing percent impervious cover is greater than the average land cover condition.

Requirement: The pollutant discharge after disturbance shall not exceed (i) the pollutant discharge based on existing conditions less 10% or (ii) the pollutant discharge based on the average land cover condition, whichever is greater.

4. Situation 4 consists of land-disturbing activities where the existing percent impervious cover is served by an existing stormwater management BMP that addresses water quality.

Requirement: The pollutant discharge after disturbance shall not exceed the existing pollutant discharge based on the existing percent impervious cover while served by the existing BMP. The existing BMP shall be shown to have been designed and constructed in accordance with proper design standards and specifications, and to be in proper functioning condition.

Table 1*

Water Quality BMP	Target Phosphorus Removal Efficiency	Percent Impervious Cover
Vegetated Filter Strip	10%	16-21%
Grassed Swale	15%	
Constructed Wetlands	20%	22-37%
Extended Detention (2x WQV)	35%	
Retention Basin I (3x WQV)	40%	
Bioretention Basin	50%	38-66%
Bioretention Filter	50%	
Extended Detention-Enhanced	50%	
Retention Basin II (4x WQV)	50%	
Infiltration I (1x WQV)	50%	
Sand Filter	65%	67-100%
Infiltration II (2x WQV)	65%	
Retention Basin II (3x WQV with Aquatic Bench)	65%	

* Innovative or alternate BMPs not included in this table may be allowed at the discretion of the local program authority. Innovative or alternate BMPs not included in this table which target appropriate non-point source pollution other than phosphorous (such as petroleum, hydrocarbons, sediment, etc.) may be allowed at the discretion of the local program authority.

- D. **Technology-based criteria.** For land-disturbing activities, the post-developed stormwater runoff from the impervious cover shall be treated by an appropriate BMP as required by the post-developed condition percent impervious cover as specified in Table 1. The selected BMP shall be located, designed, and maintained to perform at the target pollutant removal efficiency specified in Table 1.
- E. Stormwater discharges to critical areas with sensitive resources (i.e., cold water fisheries, swimming beaches, recharge areas, water supply reservoirs) may be subject to additional criteria, or may need to utilize or restrict certain stormwater management practices at the discretion of the County of Roanoke.
- F. Industrial sites which are listed under the Standard Industrial Code that are required to prepare and implement a stormwater pollution prevention plan, and shall file a notice of intent (NOI) under the provisions of the National Pollutant Discharge Elimination System (NPDES) general permit. The stormwater pollution prevention plan requirement applies to both existing and new industrial sites.
- G. Stormwater discharges from land uses or activities with higher potential pollutant loadings, known as “hotspots”, may require the use of specific structural BMPs and pollution prevention practices. Increased pollutants can include

hydrocarbons, traces metals, pesticides, and other toxics that are not found in typical stormwater runoff.

The following land uses and activities are designated as stormwater hotspots in County of Roanoke:

1. Vehicle salvage yards and recycling facilities;
2. Vehicle fueling stations;
3. Vehicle service and maintenance facilities;
4. Vehicle and equipment cleaning facilities;
5. Fleet storage areas (bus, truck, etc);
6. Industrial sites;
7. Marinas (service and maintenance areas);
8. Outdoor liquid container storage;
9. Outdoor loading and unloading facilities;
10. Public works storage areas;
11. Facilities that generate or store hazardous materials;
12. Commercial container nursery;
13. Golf courses;
14. Chemical storage;
15. Dry cleaning operations.

H. In addition to BMP requirements set forth by this ordinance, golf courses shall meet the following performance standards.

1. Managed turf shall be reduced by including areas of rough devoted to native plants, natural environments, and wildlife habitat enhancement;
2. An Integrated Pest Management and nutrient management plan shall be submitted for review and approval;
3. Native or naturalized landscaping shall be used to the extent possible;
4. Natural vegetation and trees along streams shall be retained to the extent possible;
5. Stream crossings shall be minimized;
6. Irrigation, drainage and retention systems shall be designed to provide for efficient use of water and the protection of water quality;
7. Water reuse strategies shall be employed when feasible;
8. Adherence to the “Environmental Principles of Golf Courses in the United States” published by the Center for Resource Management is encouraged.

9. A Nutrient Management Plan shall be developed by a certified Nutrient Management Planner consistent with DCR's Nutrient Management Training and Certification Regulations.
- I. Prior to the design of stormwater management systems, applicants are encouraged to consult with the County of Roanoke to determine if they are subject to additional stormwater design requirements due to environmental quality concerns at the proposed land-disturbance activity or development site.

Section 23-5.4 STREAM CHANNEL EROSION

- A. To protect stream channels from degradation, specific channel protection criteria shall be provided as prescribed in the County of Roanoke Stormwater Management Design Manual.
- B. Properties and receiving waterways downstream of any land-disturbing activity shall be protected from 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 design standards set out in this section.
- C. The County of Roanoke may determine that some watersheds or receiving stream systems require enhanced criteria in order to address the increased frequency of bankfull flow conditions brought on by land-disturbing activities.

Section 23-5.5 FLOODING

- A. Calculation methodologies for determining peak flows as found in the County of Roanoke Stormwater Management Design Manual shall be used for sizing all stormwater management practices.
- B. Downstream properties and waterways shall be protected from damages from localized flooding 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 design standards set out in this section.
- C. The 25-year post-developed peak rate of runoff from the land-disturbing activity shall not exceed the 10-year pre-developed peak rate of runoff. The 10-year post-developed peak rate of runoff from the land-disturbing activity shall not exceed the 2-year pre-developed peak rate of runoff. When developing a stormwater management design, these criteria shall be considered individually.
- D. Where land is placed within a conservation easement that will be managed to leave land in, or return land to, wooded condition, the post-developed condition

may be considered to be woods in good condition, regardless of the actual post-development condition.

Section 23-5.6 REGIONAL STORMWATER MANAGEMENT PLANS

- A. The objective of a regional stormwater management plan is to address the stormwater management concerns in a given watershed with greater economy and efficiency by installing regional stormwater management facilities versus individual, site-specific facilities. The result will be fewer stormwater management facilities to design, build, and maintain in the affected watershed. It is also anticipated that regional stormwater management facilities will not only help mitigate the impacts of new development, but may also provide for the remediation of erosion, flooding or water quality problems caused by existing development within the given watershed.
- B. Applicants shall communicate with the County of Roanoke prior to submitting an application for stormwater management plan approval in accordance with Section 3 of this ordinance to determine if a regional stormwater management plan has been developed for the applicable watershed.
- C. If such a regional stormwater management plan is in existence, the applicant must provide stormwater management water quality treatment on-site in accordance with the provisions of the regional plan and other management provisions as specified by the County of Roanoke.
- D. A regional stormwater management plan shall, at a minimum address the following:
 - 1. The specific stormwater management issues within the targeted watersheds.
 - 2. The technical criteria in 4 VAC 50-60-40 through 4 VAC 50-60-80 as needed.
 - 3. The implications of any local comprehensive plans, zoning requirements, and other planning documents.
 - 4. Opportunities for financing a watershed plan through cost sharing with neighboring agencies or localities, implementation of regional stormwater utility fees, etc.
 - 5. Maintenance of the selected stormwater management facilities.
 - 6. Future expansion of the selected stormwater management facilities in the event that development exceeds the anticipated level.

Section 23-5.7 ILLICIT DISCHARGES

- A. It shall be unlawful and a violation of this ordinance to do any of the following:
1. Discharge, or cause or allow to be discharged, sewage, industrial wastes, or other wastes, into the storm sewer system, or any component thereof, or onto driveways, sidewalks, parking lots, or any other areas draining to the storm sewer system.
 2. Connect, or cause or allow to be connected, any sanitary sewer to the storm sewer system, including any sanitary sewer connected to the storm sewer as of the date of the adoption of this ordinance.
 3. Connect, or cause or allow to be connected to the storm sewer system, without a valid VSMP, VPDES or NPDES permit, any structure that conveys any liquid other than stormwater or discharges listed in subsection B, including, but not limited to, pipes, drains, sanitary sewer lines, washing machine drains, or floor drains.
 4. Prohibitions 2 and 3 listed in this subsection expressly include, without limitations, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of the connection.
 5. Throw, place, or deposit, or cause to be thrown, placed, or deposited in the storm sewer system anything that impedes or interferes with the free flow of stormwater therein.
- B. Subject to the provisions of subsection C, the following activities shall not be in violation of this ordinance:
1. Water line flushing;
 2. Landscape irrigation;
 3. Diverted stream flows or rising groundwater;
 4. Infiltration of uncontaminated groundwater;
 5. Pumping of uncontaminated groundwater;
 6. Discharges from potable water sources, foundation drains, irrigation water, springs, and water from crawl spaces or footing drains;
 7. Air conditioning condensation;

8. Lawn watering;
 9. Residential car washing;
 10. Dechlorinated swimming pool discharge;
 11. Street washing;
 12. Discharges or flows from emergency fire fighting activities and emergency response activities employing BMPs;
 13. Any activity authorized by a valid Virginia Stormwater Management Program permit, a valid VPDES or NPDES permit, a valid Virginia Pollutant Abatement permit, or as may otherwise be permitted by law.
- C. In the event any of the activities listed in subparagraph B of this section are found to be the cause of pollutants to be discharged into the storm sewer system, the County of Roanoke Director of Community Development, or his designee, shall so notify the person performing such activities, and shall order that such activities be ceased or conducted in such a manner as to avoid the discharge of pollutants into the storm sewer system. The failure to comply with any such order shall constitute a violation of the provisions of this ordinance.
- D. Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, yard wastes, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse.

The owner or such person's lessee shall not remove healthy bank vegetation beyond that necessary for maintenance, nor remove said vegetation in such a manner as to increase the vulnerability of the watercourse to erosion. The property owner shall be responsible for maintaining and stabilizing that portion of the watercourse that is within their property lines in order to protect against erosion and degradation of the watercourse originating or contributed from their property. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to the watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Section 23-5.8 STEEP SLOPES

For development requirements on steep slopes, see Chapter 8.1, Erosion and Sediment Control and Steep Slope Development Ordinance of the County of Roanoke, Virginia.

SECTION 23-6

CONSTRUCTION INSPECTION

Stormwater management construction inspection shall utilize the approved stormwater management plans and specifications in reviewing compliance with the requirements of this Chapter.

Section 23-6.1 NOTICE OF CONSTRUCTION COMMENCEMENT

- A. The permittee must notify the County of Roanoke in advance before the commencement of construction. In addition, the permittee must notify the County of Roanoke in advance of construction of critical components of a stormwater management facility.
- B. Periodic inspections of the stormwater management system construction shall be conducted by the staff of the County of Roanoke or a professional engineer who has been approved by the County of Roanoke.
- C. Upon completion, the permittee is responsible for certifying that the completed project is in accordance with the approved plans and specifications and shall provide regular inspections during construction sufficient to adequately document compliance. All permittee inspections shall be documented and written reports prepared that contain the following information:
 - 1. The date and location of the permittee inspection;
 - 2. Whether construction is in compliance with the approved stormwater management plan;
 - 3. Variations from the approved construction specifications;
 - 4. Corrective actions that have been taken to correct previous violations;
 - 5. Any violations that exist; and.
 - 6. The name and signature of the person who performed the inspection.
- D. If the County of Roanoke inspections find any violations, the permittee shall be notified in writing of the nature of the violation and the required corrective actions. No additional construction or land-disturbing activity in the area of the violation shall proceed until any violations are corrected and all work previously completed has received approval from the County of Roanoke.
- E. The person responsible for carrying out the plan is required to provide inspection monitoring and reports to ensure compliance with the approved plan and to

determine whether the measures required in the plan provide effective stormwater management.

- F. If the County of Roanoke determines that there is a failure to comply with the plan, notice shall be served upon the permittee or person responsible for carrying out the plan in accordance with Section 23-8 of this Ordinance.

Section 23-6.2 FINAL INSPECTION AND AS-BUILT DOCUMENTATION

- A. All permittees are required to submit “as built” plans and supporting documentation for any stormwater management practices located on-site after final construction is completed. The plan and documentation must show that the installed stormwater management facility conforms to the requirements contained within the approved stormwater management plan.
- B. As-built documentation shall include the following:
 - 1. As-built survey conducted following construction certified by a registered land surveyor or professional engineer. The survey shall include enough information to verify that storage capacities in ponds and other stormwater management structures are no less than the storage volume required by the approved stormwater management plan. For retention and detention structures, a stage-storage summary table with design values and as-built values shall be included. The survey shall verify inverts and sizes of pipes, culverts, and outlet structures. Maximum tolerance shall be +/- 0.1 feet for structure and +/- 0.5 feet for finished grades.
 - 2. The permittee’s inspection log records with copies of all inspection test results documenting compliance with the approved stormwater management plan.
 - 3. Redline revision of approved stormwater management plan. Place a check mark where design values agree with actual constructed values. For changed values enter the constructed value in red.
 - 4. Certification statement, signed by the permittee and a Professional Engineer or Professional Land Surveyor, registered in the Commonwealth of Virginia, indicating conformance with the approved stormwater management plan.
- C. A final inspection and approval by the County of Roanoke is required before the release of any performance securities can occur. As built plans, acceptable to the County of Roanoke shall be submitted prior to the County of Roanoke’s final inspection.

- D. If it is determined from the as-built documentation that the storm drainage systems and the stormwater management facilities have not been constructed in accordance with the approved stormwater management plan, then corrective action will be taken to comply with the approved Plan or the permittee shall provide studies and information required by the County of Roanoke to demonstrate that the constructed system will function equivalent to the approved Stormwater Management Plan, including meeting all flow, velocity, and regulatory requirements and that the approved elevation-storage requirement is maintained.

SECTION 23-7

MAINTENANCE AND REPAIR OF STORMWATER FACILITIES

Section 23-7.1 MAINTENANCE INSPECTIONS OF STORMWATER FACILITIES

- A. The person responsible for the maintenance and repair of stormwater management facilities during construction shall be the permittee. Following the completion and acceptance of construction, the person responsible for the maintenance and repair of stormwater management facilities shall be the land owner. Persons responsible for the maintenance and repair of stormwater management facilities shall perform periodic inspection, maintenance, and repair, in conformance with the applicable maintenance agreement. All inspection, maintenance, and repair activities shall be documented.
- B. All stormwater structures and management facilities shall be maintained, repaired, and inspected as required by Section 23-7 of the Stormwater Management Ordinance.
- C. In addition to the inspections performed by the land owner, the County of Roanoke shall periodically inspect all stormwater management facilities. In the event that the stormwater management facility has not been maintained and/or becomes a danger to public safety, public health, or the environment, the County of Roanoke shall notify the land owner by registered or certified mail. The notice shall specify the measures needed to comply with the plan and shall specify the time within which such measures shall be completed. If the responsible party fails or refuses to meet the requirements of the maintenance covenant, the County of Roanoke, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work to place the facility in proper working condition, and recover the costs from the land owner.

Section 23-7.2 RECORDS OF MAINTENANCE AND REPAIR

Parties responsible for the operation and maintenance of a stormwater management facility shall make records of the installation and of all inspections, maintenance and repairs, and shall retain the records for at least five (5) years. These records shall be made available to the County of Roanoke at reasonable times upon request.

SECTION 23-8

ENFORCEMENT AND PENALTIES

Section 23-8.1 VIOLATIONS

Any ~~land-disturbance~~ activity that is commenced or is conducted contrary to this Ordinance or the approved plans and permit, may be subject to the enforcement actions outlined in this section and the Virginia Stormwater Management Law.

The enforcement and penalties for violation of the Stormwater Management Ordinance shall apply to stormwater management required during construction and land-disturbing activities and post-construction operation and maintenance of stormwater structures and practices.

Section 23-8.2 NOTICE OF VIOLATION

- A. When the County of Roanoke determines that an activity is not being carried out in accordance with the requirements of this Ordinance, it shall issue a written notice of violation delivered by registered or certified mail to the permittee, or if there is no permittee, to the land owner.

- B. The notice of violation shall contain:
 - 1. The name and address of the permittee, or if there is no permittee, the land owner;
 - 2. The address when available or a description of the building, structure or land upon which the violation is occurring;
 - 3. A statement specifying the nature of the violation;
 - 4. A description of the remedial measures necessary to bring the land-disturbing activity into compliance with this ordinance and a time schedule for the completion of such remedial action;
 - 5. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
 - 6. A statement that the determination of violation may be appealed by filing a written notice of appeal within thirty (30) days of service of notice of violation.

Section 23-8.3 STOP WORK ORDERS

- A. Persons receiving a notice of violation are required to immediately halt all construction and land-disturbing activities not in conformance with the approved stormwater management plan.
- B. This “stop work order” shall be in effect until the County of Roanoke confirms that the land-disturbing activity is in compliance with the requirements of this ordinance and the violation has been satisfactorily addressed. Upon failure to comply within the time specified, the permit may be revoked and the applicant shall be deemed to be in violation of this article and upon conviction shall be subject to the penalties provided by this ordinance.

Section 23-8.4 CIVIL AND CRIMINAL PENALTIES

- A. Any person who violates any provision of a local ordinance or program adopted pursuant to the authority of the Virginia Stormwater Management Program Permit Regulations (4 VAC 50-60) shall be guilty of a Class 1 misdemeanor and shall be subject to a fine of not less than \$2,500 and not exceeding \$32,500 or up to twelve months imprisonment for each violation or both.
- B. Any person who knowingly makes a false statement in any form required to be submitted under this ordinance or renders any monitoring device or method to be maintained to ensure compliance shall be guilty of a felony and shall be subject to a fine of not less than \$5,000 nor more than \$50,000 and imprisonment for not less than one year nor more than three years for each violation.
- C. Any defendant, not an individual, shall, upon conviction of a violation under subparagraph A or B, be subject to a fine of not less than \$10,000 per for each violation.
- D. Each day that a violation continues shall constitute a separate and distinct violation.
- E. In addition, the County of Roanoke may elect to seek civil penalties:
 - 1. The County of Roanoke may apply to the circuit court to enjoin a violation or a threatened violation of the provisions of this ordinance without the necessity of showing that an adequate remedy at law does not exist.
 - 2. Without limiting the remedies which may be obtained in this section, the County of Roanoke may bring a civil action against any person for violation of this ordinance or any condition of a permit. The action may seek the imposition of a civil penalty of not more than \$10,000 against the person for each violation.

3. With the consent of any person who has violated or failed, neglected or refused to obey this ordinance or any condition of a permit, the County of Roanoke may provide, in an order issued by the County of Roanoke against such person, for the payment of civil charges for violations in specific sums, not to exceed the limit specified in subdivision 2 of this section. Such civil charges shall be instead of any appropriate civil penalty which could be imposed under subdivision 2.
4. The County of Roanoke may also bring civil action to recover costs necessary to abate water quality and public safety concerns from an applicant who violates this ordinance or any condition of a permit.

Section 23-8.5 RESTORATION OF LANDS

- A. Any violator may be required to restore land to its undisturbed condition or in accordance with a notice of violation, stop work order, or permit requirements.
- B. In the event that restoration is not undertaken within a reasonable time after notice, the County of Roanoke may take necessary corrective action, the cost of which shall be covered by the performance bond, or become a lien upon the property until paid, or both.