

# **Rappahannock County**



## **Stormwater Management Ordinance**

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## **ARTICLE I General Provisions**

### **§ 145-1. Statutory authority.**

This chapter is adopted pursuant to the authority conferred by the Virginia Erosion and Sediment Control Law (Virginia Code 10.1-560 et seq.) and the Virginia Stormwater Management Act (Virginia Code 10.1-603.1 et seq.)

### **§ 145-2. Purpose.**

The purpose of this ordinance is to protect the health, safety and general welfare of the citizens of the County and the Commonwealth of Virginia and to prevent water from being rendered dangerous to the health of persons living in the County. The specific purposes of this chapter are to:

- A. Minimize the deterioration of state waters and waterways resulting from land disturbing activities.
- B. Protect the safety and welfare of citizens, property owners, and businesses by minimizing the negative impacts or increased stormwater discharges from new land development and redevelopment.
- C. Control non-point source pollution, erosion and sedimentation, protect stream channel functions, drainage, and facilitate natural recharge of groundwater.
- D. Maintain the integrity of existing stream channels and networks for their biological functions, drainage, and natural recharge of groundwater.
- E. Protect the condition of state waters for all reasonable uses and ecological functions.
- F. Provide for the long-term responsibility for and maintenance of stormwater management facilities and best management practices.
- G. Integrate stormwater management and pollution control with other county ordinances, programs, policies, and comprehensive plan.
- H. Promote the long-term sustainability of groundwater resources.

### **§ 145-3. Applicability.**

- A. Only land development projects within Rappahannock County except as provided for in § 145-3.B, shall comply with the requirements of this chapter. See also B (3) below for individual single-family home agreement in lieu of a plan exemption
- B. The following activities are exempt from these stormwater performance criteria:
  - (1) Tilling, planting, grazing, or harvesting for agricultural uses, horticultural uses, or forest crops, mining, and exploration for oil and natural gas.
  - (2) Land development projects that disturb less than two thousand five hundred (2,500) square feet of land.
  - (3) Where the land development activity results from the construction or alteration of a single-family residence, an agreement in lieu of a plan may be substituted for a stormwater management concept plan and a stormwater management design plan. This option shall not apply to any single family residential project that includes the construction of a driveway ("Linear development project") of greater than 1,000 feet and greater than 10% grade at any one point, wherein the requirements of §145-19 B shall apply.

C. The following activities shall not be exempt (unless they disturb less than 2,500 square feet):

- (1) Agricultural buildings.
- (2) Agricultural roads.
- (3) Agricultural parking lots.

**§ 145-4. Compatibility with other permit and ordinance 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 of the environment shall be considered to take precedence.

**§ 145-5. Severability.**

If provisions of any article, section, subsection, paragraph, subdivision or clause of this ordinance shall be judged invalid by 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.

**§ 145-6. Manuals.**

Rappahannock County has adopted low impact development manuals and stormwater management design manuals for the proper implementation of the requirements of this ordinance. A list of the adopted manuals can be found in a separate guidance document.

## **ARTICLE II Definitions**

**§ 145-6. Definitions.**

**1.5 YEAR STORM** — The frequency of a storm and the probability of such a storm occurring based on historic data. A one and a half year storm means based the probability of the event occurring in any given year is 1 in 1.5 or roughly a 66% chance.

**2 YEAR STORM** — The frequency of a storm and the probability of occurrence based on historic data. A two year storm means the probability of the event occurring is 1 in 2 or 50%.

**10 YEAR STORM** — The frequency of a storm and the probability of occurrence based on historic data. A ten year storm means the probability of the event occurring in any given year is 1 in 10 or 10%.

**100 YEAR STORM EVENT** — The frequency of a storm and the probability of occurrence based on historic data. A one hundred year storm means the probability of the event occurring is 1 in 100 or 1%.

**24 HOUR STORM** — A twenty-four hour storm is a storm event that lasts for 24 hours.

**AGREEMENT IN LIEU OF A PLAN** — A contract between the plan-approving authority and the owner that specifies conservation measures that must be implemented in the construction of a single-family residence.

**AGRICULTURAL LANDS** — Land used for horticulture, viticulture, silviculture or other gardening which may involve the tilling of soil for the raising of crops; the keeps of livestock and/or poultry.

**BEST MANAGEMENT PRACTICES (BMPs)** — A structural or nonstructural practice which is designed to minimize the impacts of development on surface and groundwater systems.

**CHANNEL** — A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

**CONVENTIONAL STORMWATER MANAGEMENT** — Including but not limited to extended detention, detention or retention ponds.

**DEVELOPMENT** — Construction or substantial alteration of residential, commercial, industrial, institutional, recreation, transportation or utility facilities or structures, including infrastructure such as roads, driveways, etc. Development includes but is not necessarily limited to any project otherwise requiring a driveway entrance permit, land disturbance permit, preliminary plan of subdivision and/or a major site development plan.

**DRIVEWAY** — An area within a property designated to serve the property and providing access to a street, private street or private access easement with an adequate width to serve one property. The area shall not be a private street or private access easement and is not intended to serve any other properties.

**FLOODING** — A flow of water that is too great to be confined within the banks or walls of a stream, water body or conveyance system and that overflows onto adjacent lands, causing or threatening damage.

**FLOODPLAIN** — Land which would be inundated by flood waters in a storm event of a one- hundred (100) year return interval.

**FRACTURED BED ROCK** — Exposed bed rock that is connected to an aquifer marked by pocked topography and underground cavities.

**GEOTECHNICAL INVESTIGATION** — On-site soil conditions inspected and reported by a trained professional.

**HYDROLOGY** — Refers to all bodies of water and their connectivity.

**INTEGRATED MANAGEMENT PRACTICE** — Low-impact development microscale and distributed-management techniques to maintain predevelopment site hydrology. Integrated management practices shall include bioretention facilities, dry wells, filter/buffer strips, grassed swales, rain barrels, cisterns, infiltration trenches, and amended soils as specified in low-impact development design manuals.

**INFILTRATION** — The process of percolating stormwater into the subsoil.

**LAND CONVERSION** — A change in land use.

**LAND DEVELOPMENT or LAND DEVELOPMENT PROJECT** – See Development.

**LAND DISTURBANCE** — Changes in the land surface that alter the volume or peak flow discharge rate of rainfall runoff.

**LINEAR DEVELOPMENT PROJECTS** — A land development 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) the construction of tracks, rights-of way, private roads, bridges, communication facilities and other related structures of a railroad company; (iii) highway construction projects; (iv) driveways.

**LOW-IMPACT DEVELOPMENT** is a land planning and engineering design approach with a goal of replicating the pre-development hydrologic regime of urban and developing [watersheds](#). The primary

goal of LID is to mimic a site's pre-development **hydrology** by infiltrating, filtering, storing, evaporating, and detaining **runoff** close to its source. Examples of LID site design include:

1. diverting runoff from **impervious surfaces** such as **parking lots** by using **bioretention** areas (also called **rain gardens**);
2. capturing rain water on a **green roof**;
3. using grassed **swales** along **roadways** instead of **curb-and-gutter** drainage.

**LOW-IMPACT DEVELOPMENT DESIGN MANUALS** — Manuals adopted by Rappahannock County for the proper implementation of the requirements of this ordinance.

**OFFSITE** — Not located or occurring at the site of a particular activity.

**OVERLOT DRAINAGE** — Drainage resulting from sheet flow across an impervious surface, typically a result of precipitation.

**PARKING LOT** — An area not within a building where licensed and operable motor vehicles are regularly stored for the purpose of temporary, daily or overnight off street parking.

**PASTURES** — A type of land cover associated with a particular curve number used to calculate runoff.

**PEAK FLOW** — Maximum flow, at which time the water flow elevation is highest and flooding is the worst.

**POINT OF DISCHARGE** — Pipe or conveyance channel which discharges to off site property.

**POST-DEVELOPMENT** — Conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land.

**PRACTICABLE** — Reasonably possible, achievable.

**PRE-DEVELOPMENT** — 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 of plan approval occurs (preliminary grading, roads, utilities, etc.), the existing conditions at the time prior to the first time being approved or permitted shall establish pre-development conditions.

**REDEVELOPMENT** — The process of developing land that is or has been previously developed.

**RIPARIAN BUFFER** — An area of land at or near a stream bank, surface water, and/or wetland that has an intrinsic water quality value due to the ecological and biological processes it performs or is otherwise sensitive to changes which may result in significant degradation to the quality of State waters.

**RUNOFF** — That portion of precipitation that is discharged across the land surface or through conveyances to one or more waterways.

**SITE** — The parcel of land being developed, or designated planning area in which the land development project is located.

**STORMWATER IMPOUNDMENT STRUCTURES** — see stormwater management facility.

**STORMWATER MANAGEMENT DESIGN MANUALS** — Manuals adopted by Rappahannock County for the proper implementation of the requirements of this chapter.

**STORMWATER MANAGEMENT FACILITY** — A device that controls stormwater runoff and changes the characteristics of the runoff including, but not limited to, the quantity and quality, the period of release, or the velocity of flow.

**STORMWATER MANAGEMENT PLAN** — A document containing material for describing how existing runoff characteristics will be affected by a land development project and methods for complying with the requirements of this stormwater management program.

**STREAMS** — Any stream identified on USGS Topographic maps in blue, dashed or solid lines.

**VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP)** — A statement of the various methods approved by the State employed by a locality to manage the runoff from the land development projects and may include such items as local ordinances, policies and guidelines, technical materials, inspection, enforcement, and evaluation.

**WATER QUALITY VOLUME** — The volume equal to the first ½ inch of runoff multiplied by the impervious surface of the land development project.

**WATERSHED** — A defined land area drained by a river, streams, or drainage-ways or system of connecting rivers, streams, or drainage-ways such that all surface water within the area flows through a single outlet.

**WETLAND** – Land that (1) has a predominance of hydric soils; (2) is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and (3) under normal circumstances does support a prevalence of such vegetation.

**WOODS** — A type of land cover associated with a certain curve number used to calculate pollutant runoff.

### **ARTICLE III Stormwater Management Program Permits, Procedures, and Requirements**

#### **§ 145-7. General requirements.**

No application for land development will be approved unless it includes a stormwater management plan as required by this chapter, detailing how runoff and associated water quality impacts resulting from the activity will be controlled or managed. A stormwater management plan shall include both a concept plan to ensure adequate planning for the management of runoff and a final design plan.

#### **§ 145-8. Stormwater management concept plans.**

- A. All requests for driveway entrance permits, land disturbance permits, preliminary plans of subdivision, and major site development plans shall provide a stormwater management concept plan describing, in general, how stormwater runoff through and from the development will be conveyed and controlled. The concept plan shall utilize low impact development techniques to the maximum extent practicable. No such plan shall be required when repairing or replacing destroyed or damaged entrances, where there is no increased land development. See also H., below.
- B. The stormwater management concept plan must be approved prior to submission of a stormwater management design plan (as part of the construction or final site plan) for the entire development, or portions thereof.
- C. A copy of the approved stormwater management concept plan shall be submitted with the stormwater management design plan. Rappahannock County staff, in consultation with the Culpeper Soil and Water Conservation District and other agencies, shall check the design plan for consistency with the concept plan and may require a revised stormwater management concept plan if changes in the site development proposal have been made.
- D. The stormwater management concept plan shall provide all appropriate information as identified in the stormwater management design manuals.

- E. The stormwater management concept plan shall include a hydrologic/hydraulic analysis of the downstream watercourse for all concentrated surface waters that will be discharged onto a developed property. Rappahannock County staff, in consultation with the Culpeper Soil and Water Conservation District and other agencies, may request relocation of a stormwater outfall if other alternative discharge locations are practical.
- F. Prior to approval of the stormwater management concept plan, Rappahannock County staff, in consultation with the Culpeper Soil and Water Conservation District and other agencies, shall meet on site with the applicant or representative to field-verify the hydraulic conditions of all receiving channels.
- H. The stormwater management concept plan shall utilize, to the maximum extent practicable, low-impact development site planning in accordance with the low-impact development design manuals. The maximum extent practicable may be determined in a resource review meeting with Rappahannock County staff and Culpeper County Soil and Water Conservation District.

**§ 145-9. Stormwater management design plans.**

- A. Except as provided for in Article IV Exceptions, no land disturbance or building permit shall be issued for land development without approval of a stormwater management design plan unless that applicant can demonstrate compliance with Article V General Criteria.
- B. The applicant shall demonstrate that the project meets the criteria set forth in this chapter through submission of a stormwater management design plan. Failure of the applicant to demonstrate that the project meets these criteria, as determined by Rappahannock County staff, shall be reason to deny approval of the plan.
- C. A stormwater management design plan containing all appropriate information as specified in this chapter shall be submitted to Rappahannock County staff in conjunction with the construction plan or final site plan.
- D. Where the land-disturbing activity results from the construction of a single-family residence, an agreement in lieu of a plan may be substituted for a stormwater management design plan.

**§ 145-10. Stormwater management design plan contents.**

The stormwater management design plan shall contain maps, charts, graphs, tables, photographs, narrative descriptions, explanations, and citations to supporting references as appropriate to communicate the information required by this chapter and the stormwater management design manuals and the low-impact development design manuals. At a minimum, the stormwater management design plan shall contain the following:

- A. General.
  - (1) Description of the project, and proposed design, including how water quality, quantity and stormwater drainage requirements will be addressed.
  - (2) Proposed erosion and sediment controls, and proposed temporary and permanent stormwater management facilities.
  - (3) Project schedule, including a sequence of construction.
  - (4) Maps depicting all pertinent stormwater management information necessary for review of the plan as identified in the stormwater management design manuals, including, but not limited to maps of the drainage area, soils and plan view of the development project.
- B. Stormwater management facilities.



- (1) Stormwater management facilities identified on a map, including details, plan, profile, cross sections, and other pertinent data necessary for review as identified in the stormwater management design manuals.
- (2) Comprehensive hydrologic and hydraulic design calculations, including all assumptions and criteria, for the pre-development and post-development conditions for the design storms specified in this chapter or the stormwater management design manuals.
- (3) If infiltration facilities are proposed, the location of existing and proposed wells and septic system drain fields shall be shown along with an analysis that supports the location of the infiltration facility in the soil type identified.
- (4) A geotechnical report with recommendations and earthwork specifications in accordance with requirements in the stormwater management design manuals. The geotechnical engineer shall acknowledge on the design plan that the geotechnical recommendations have been incorporated into the design of stormwater management facilities.
- (5) A landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater management facility in accordance with standards in the stormwater management design manuals.
- (6) Identification of all easements needed for inspection and maintenance of stormwater management facilities in accordance with installation specifications in the County approved stormwater management design manuals.
- (7) A maintenance plan identifying the parts or components of the stormwater management facility that need to be maintained to ensure continued proper functioning of the facility. If the designated maintenance responsibility is with a party other than Rappahannock County, then a maintenance agreement shall be executed between the responsible party and Rappahannock County.

C. Low-impact development sites.

- (1) Integrated management practices identified on a map and corresponding design details in accordance with the low-impact development design manuals.
- (2) Hydrologic computations to determine low-impact development stormwater requirements in accordance with the low-impact development design manuals.
- (3) Hydrologic evaluation and design details for supplemental conventional stormwater management facilities in the event that integrated management practices alone cannot meet site stormwater management requirements.
- (4) Identification of all storm drainage easements needed to establish locations of integrated management practices.
- (5) Installation specifications per the stormwater management design manuals.

D. Stormwater drainage systems.

- (1) Hydrologic and hydraulic design calculations, including calculations for offsite drainage systems.
- (2) Design specifications in accordance with the stormwater management design manuals.
- (3) Identification of all easements needed for inspection and maintenance of drainage systems in accordance with specifications in the stormwater management design manuals.

- (4) All existing and proposed drainage systems, natural or manmade, shall be analyzed according to Article V Technical Criteria.

**§ 145-11. Stormwater management design plan approval.**

- A. A maximum of thirty (30) calendar days from the receipt of an application will be allowed for preliminary review of the application to determine if the application is complete. During this period, the application will be accepted for review, which will begin the sixty-day review period, or rejected for incompleteness. The applicant will be informed in writing of the information necessary to complete the application.
- B. The sixty-day review period begins on the day the complete stormwater management design plan is accepted for review. During the sixty-day review period, the program administrator shall either approve or disapprove the plan and communicate the decision to the applicant in writing. Approval or denial shall be based on the plan's compliance with this chapter and the stormwater management design manuals. In cases where modifications are required to approve the plan, the County shall have an additional sixty (60) days to review the revised plan from the initial and any subsequent resubmission dates. If the plan is approved, one copy bearing certification of such approval shall be returned to the applicant. If the plan is disapproved, the applicant shall be notified in writing of the reasons.
- C. All plans, profiles, and specifications shall be distributed to the appropriate county departments and/or state agencies for review and recommendation. Comments and recommendations shall be coordinated at the meeting of the technical review committee. The technical review committee shall review the plan for compliance with this chapter.
- D. The applicant or any aggrieved party authorized by law may appeal the program administrator's decision of approval or disapproval of a stormwater management design plan application within thirty (30) days after rendering of such decision by the program administrator, to the board of supervisors.

**§ 145-12. Conditions of approval.**

- A. The applicant shall comply with all applicable requirements of the approved plan.
- B. No substantive changes shall be made to an approved plan without review and written approval by Rappahannock County staff in consultation with the Culpeper Soil and Water Conservation District, and other agencies.
- C. No transfer, assignment, or sale of the rights granted by virtue of an approved plan shall be made unless a written notice of transfer is filed with the program administrator and the transferee certifies agreement to comply with all obligations and conditions of the approved plan.
- D. The stormwater management design plan's approval expires one year from the date of approval unless a final plat is recorded or unless work has actually begun on the site. The recordation of a final plat for a section of a subdivision (or initiation of construction in a section) does not vest the approval of the stormwater management design plan for the remainder of the subdivision. If the stormwater management design plan expires, the applicant shall file with Rappahannock County staff for re-approval of the stormwater management design plan.
- E. Three (3) sets of certified as-built plans or agreements in lieu of, meeting the specifications documented in the stormwater management design manuals, shall be submitted to the program administrator upon completion of the project. Each as-built plan shall have a certification statement by a professional licensed in Virginia to perform such work. An electronic copy of as-built plans may be submitted in place of the three copies if preferred by applicant.
- F. The applicant shall be responsible for implementing the approved plan, and may be required to conduct a monitoring program, if deemed necessary by the program administrator.

G. The applicant shall submit a maintenance plan for approval by the program administrator.

**§ 145-13. Fees/recovery of administrative costs.**

A fee shall be paid to the County at the time of submission of the stormwater management plan in accordance with the county fee schedule to defray the cost of plan review and inspection

**ARTICLE IV Exceptions**

**§ 145-14. Exceptions.**

- A. Exceptions to the provisions of this chapter may be granted by Rappahannock County staff, upon receipt of request for such exception in writing from the applicant or property owner. The request shall include descriptions, drawings, calculations and other information that is necessary to evaluate the waiver of stormwater management requirements.
- B. An exception may be granted provided that:
  - (1) Exceptions to the criteria are the minimum necessary to afford relief.
  - (2) Economic hardship alone is not sole reason for exception.
  - (3) Reasonable and appropriate conditions shall be imposed as necessary upon an exception granted so the intent of the chapter is preserved.
  - (4) The applicant can demonstrate to the satisfaction of Rappahannock County that the immediate downstream waterways will not be subject to:
    - (a) Deterioration of existing culverts, bridges, dams, and other structures;
    - (b) Deterioration of biological functions or habitat;
    - (c) Accelerated streambank or streambed erosion or siltation;
    - (d) Increased threat of flood damage to public health, life, and property.
  - (5) At least one of the following conditions applies in whole or in part:
    - (a) It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this chapter
    - (b) The County finds that meeting the minimum on-site requirements is not feasible due to the natural or existing physical characteristics of the site.
    - (c) The location of the land development project in the watershed is such that on-site stormwater management will result in increased flows on the main stream. The applicant or property owner must provide supporting hydrologic analysis in accordance with the stormwater management design manuals.
    - (d) An off-site stormwater management facility provides the required controls.
    - (e) An existing regional stormwater management facility provides the required controls, and the property owner agrees to a pro-rata share contribution.

C. Refer to § 145-3.B.

**ARTICLE V Technical Criteria**

**§ 145-15. General performance criteria.**

A. The following stormwater management options may be considered to meet the requirements of this subsection:

- (1) Incorporation on the site of integrated management practices that meet the water quality protection requirements set forth in this article.

- (2) For the purposes of this article, the "site" may include multiple projects or properties that are adjacent to one another or lie within the same drainage area where a single best management practice will be utilized by those projects to satisfy stormwater protection requirements;

B. Any maintenance, alteration, use or improvement to an existing stormwater management structure that does not degrade the quality of surface water discharge, as determined by Rappahannock County, may be exempted from the requirements of this chapter. Any person aggrieved by a decision of Rappahannock County under this chapter may appeal such decision in accordance with the procedures provided in Article III.

C. Rappahannock County may authorize the developer to use conventional stormwater management or an alternative best management practice facility to achieve the performance criteria set forth in this chapter.

D. Rappahannock County requires evidence of all wetlands and stream impact permits required by law and County Erosion and Sediment Controls prior to authorizing grading or other on-site activities.

#### **§ 145-16. Water quality.**

In order to enhance water quality of stormwater runoff, all non-exempt land disturbing activities are required to treat stormwater runoff from impervious cover by an appropriate BMP as required by Rappahannock County Regulations or the Virginia Stormwater Management Regulations. Design standards and specifications for the BMPs are available in the stormwater management design manuals.

#### **§ 145-17. Water quantity.**

- A. In order to protect waters from the potential harms of unmanaged quantities of stormwater runoff (sediment deposition, erosion and damage due to changes in runoff rate of flow and hydrologic characteristics, including but not limited to, changes in volume, velocity, frequency, duration, and peak flow rate of stormwater runoff) the standards set out in this section shall be met for any land disturbing activity.
- B. The 2-year post-developed peak rate of runoff from the development site shall not exceed the 2-year pre-developed rate of runoff.
- C. The 10-year post-developed peak rate of runoff from the development site shall not exceed the 10-year pre-developed rate of runoff.
- D. If stream channel erosion or localized flooding is an existing predevelopment condition, the proposed land disturbing activity shall provide 24-hour extended detention of the runoff generated by the one-year, 24-hour duration storm.
- E. Compliance with this section will be determined with use of the following:
  - (1) Physical surveys and calculations consistent with engineering practices acceptable to Rappahannock County to verify pre-development stream characteristics.
  - (2) Calculations for each point of discharge from the land disturbance to evaluate flooding and channel erosion impacts to receiving streams due to land-disturbing activities. Calculations will include any runoff from the balance of the watershed which also contributes to that point of discharge. Flooding and channel erosion impacts shall be evaluated taking the entire upstream watershed into account, including the modifications from the planned land disturbance. Good engineering practices and calculations shall be used to demonstrate post development stream characteristics, flooding and channel erosion impacts.
  - (3) For purposes of computing predevelopment runoff, all pervious lands in the site shall be assumed prior to development to be in good condition (if the lands are pastures, lawns, or parks), with good

cover (if the lands are woods), or with conservation treatment (if the lands are cultivated); regardless of conditions existing at the time of computation. Predevelopment runoff calculations utilizing other land cover values may be utilized provided that it is satisfactorily demonstrated that actual site conditions warrant such considerations.

**§ 145-18. Frequency.**

The specified design storms shall be defined as a 2-year and 10-year 24-hour storm using the site specific rainfall distribution recommended by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS). Use of Modified Rational Method is also permissible per the guidance provided in the Virginia Stormwater Management Handbook.

**§ 145-19. Linear development projects including private roads and driveways.**

- A. Linear development projects shall control post-development stormwater runoff in accordance with the stormwater management plan approved in accordance with these regulations to reduce channeling and concentrated flows, except as provided in §145-3 B. (3).
- B. An engineer's plan proving adequate erosion and stabilization measures is required for private roads and/or driveways exceeding 1,000 feet in length and 10% grade at any one point.
- C. An engineer's plan shall be required for a private road, driveway, or segment of driveway which requires a retaining wall or other special erosion control measure as determined by the County.
- D. The following suggested design criteria for linear development projects have been demonstrated to meet minimum protective limits for stormwater management:
  - (1) To prevent sedimentation and erosion, private roads and/or driveways may be built to the following specifications:

Maximum surface width of	24 feet (non-commercial)
	35 feet (commercial)
Minimum surface width of	12 feet
Maximum grade of	10%
Angle of entry	90 degrees
Angle of intersection at creek crossing	90 degrees
  - (2) Lands with a grade of twenty five percent (25%) or greater may not be disturbed for the construction, establishment, re-working or improvement of a private road or driveway.
  - (3) Private roads and/or driveways shall have at a minimum 4 inches (4") of two-inch (2") rock on the roadbed, covered with 6 inches (6") of three-quarter inch (3/4") crushed rock gravel or alternative materials.
  - (4) Stable roadside ditches, roadway crowning, and culverts may be provided for acceptable drainage. Filtering of roadside ditch runoff, prior to it entering streams shall be encouraged by the use of buffers, swales, check dams, or other where practical.
  - (5) The side banks of roadside ditches may be graded to a slope of no more than one foot (1') of vertical rise in each three feet (3') of horizontal distance, except where retaining walls and/or other erosion control measures are installed as specified in an engineer's plan.
  - (6) Cut and/or fill banks may be seeded promptly during private road and/or driveway construction to control erosion.

**§ 145-20. Stormwater management impoundment structures or facilities.**

- A. Construction of stormwater management impoundment structures or facilities within wetlands and streams will not be permitted.

- B. Construction of stormwater management impoundment structures or facilities within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain will be avoided to the maximum extent practicable. When this is demonstrated to be unavoidable, all stormwater management facility construction will be in compliance with all applicable requirements under the National Flood Insurance Program, 44 CFR Part 59 and local floodplain ordinances.
- C. Stormwater management impoundment structures that are not covered by the Impounding Structure Regulations (4VAC50-20) will be engineered for structural integrity for the 100-year storm event. In no case will the design standard be less than the 100-year storm event for any stormwater management impoundment structure.
- D. Construction of stormwater management impoundment structures or facilities may occur in fractured bedrock only after a geological study of the area has been conducted in accordance with guidelines setout in the stormwater management handbook.
- E. No adverse environmental impacts shall occur to any identified karst features. Permanent stormwater management impoundment structures or facilities shall only be constructed in karst features after completion of a geotechnical investigation in accordance with guidelines setout in the Virginia Stormwater Management Handbook. Discharge of stormwater into a karst feature shall not occur unless in accordance with the technical criteria setout in this article unless otherwise allowed by law.

**~~§ 145-21. Riparian buffers.~~**

- ~~A. Riparian buffers are lands that have an intrinsic value due to the ecological and biological processes they perform or are sensitive to impacts which may cause significant degradation to the quality of State waters. In their natural condition, these lands provide for the removal, reduction or assimilation of sediments, nutrients and potentially harmful or toxic substances in runoff entering its tributaries, and minimize the adverse effects of human activities on State waters and aquatic resources.~~
- ~~B. Riparian Buffers consist of:
  - ~~(1) Wetlands connected by surface flow that are contiguous to water bodies with flow.~~
  - ~~(2) A vegetated buffer area a minimum of 100 feet in width, located adjacent to and landward of the environmental features and along both sides of any stream.~~
  - ~~(3) Such other lands determined by Rappahannock County to meet the provisions of §145-21 and to be necessary to protect the quality of State waters.~~~~
- ~~C. Designation of riparian will not be subject to modification unless based on reliable, site specific information.~~
- ~~D. Riparian Boundaries:
  - ~~Notwithstanding permitted uses and encroachments the 100-foot buffer area shall not be reduced in width.~~
    - ~~(1) The 100-foot wide buffer area shall be required to reduce sediments and nutrient removal.~~
    - ~~(2) Where land is subdivided and uses such as agriculture within the area of the buffer area cease and the lands are proposed to be converted to subdivision development, the full 100 foot wide buffer on all stream and intermittent streams will be reestablished. In reestablishing the buffer, management measures shall be undertaken to provide woody vegetation that assures the buffer functions set forth in this chapter.~~
    - ~~(3) Existing vegetation in the buffer area shall not be cleared or disturbed except as provided in the following section (§145-21E) and with the approval of Rappahannock County.~~~~
- ~~E. Permitted modifications of the buffer area.~~

~~— In order to maintain the buffer area's functional value, existing vegetation may be removed, subject to the approval Rappahannock County, only to provide for reasonable sight lines, access paths, general woodlot management and best management practices, including those that prevent upland erosion and concentrated flows of stormwater, as follows:~~

- ~~(1) Trees may be pruned or removed if necessary to provide for sight lines and vistas. If trees are removed, they shall be replaced with other vegetation that, in the judgment of the water quality administrator, is equally effective in retarding runoff, preventing erosion and filtering non-point source pollution from runoff.~~
- ~~(2) Any path shall be constructed and surfaced to effectively control erosion.~~
- ~~(3) Appropriate measures may be taken to prevent and remove dead, diseased or dying trees or shrubbery and invasive and/or noxious weeds (such as Johnson grass, kudzu, and multiflora rose)~~
- ~~(4) For stream bank erosion control projects, trees and woody vegetation may be removed, necessary control techniques employed and appropriate vegetation established to protect or stabilize the stream bank in accordance with the best available technical advice and applicable permit conditions or requirements.~~

~~F. Riparian buffers on Agricultural Lands:~~

~~— On agricultural lands, the buffer area shall be encouraged to prevent concentrated flows of surface water from breaching the riparian buffer area.~~

~~G. Private road and/or driveway construction crossing riparian buffer areas:~~

~~To the maximum extent practicable, private roads and driveways shall be constructed perpendicular to streams.~~

#### **§ 145-22. Low-impact development.**

- A. The use of low-impact development site planning and integrated management practices shall be encouraged to control stormwater runoff at the source and more closely approximate predevelopment runoff conditions.
- B. Low-impact development stormwater management design plans developed consistent with the requirements of this subsection may be considered to meet the water quality and quantity performance criteria of §145-16 and §145-17.
- C. The design criteria, hydrologic analysis and computational procedures for low-impact development stormwater management design plans shall be those of the low-impact development design manuals.
- D. Low-impact development stormwater management design plans shall not conflict with existing State or Rappahannock County laws, ordinances, regulations or policies.
- E. Storm drainage easements shall be recorded to identify the locations of integrated management practices on lots or parcels. The property owner shall not remove or structurally alter integrated management practices without prior written approval from Rappahannock County.
- F. Stormwater runoff from parking lots shall be diverted through infiltration facilities, stormwater management filtering systems, or buffers. These shall be placed within or near the parking lot islands.

#### **§ 145-23. Regional or watershed management planning.**

- A. Authority to develop regional planning.  
Rappahannock County staff shall have the authority to develop regional or watershed stormwater management plans to address the stormwater management concerns in a given watershed with greater economy and efficiency by installing regional stormwater management facilities versus onsite

stormwater management facilities. In addition, Rappahannock County may allow multiple applicants performing land development activities in the same watershed area to submit a regional stormwater management plan. This regional plan must collectively address the provisions of this chapter for all land development activities to be covered under the plan.

B. Areas of applicability.

In addition to the other requirements of this chapter, land development projects which are located in a watershed identified for a regional stormwater management facility in the County shall comply with the provisions of this section.

C. Stormwater quantity and quality.

In addition to the other requirements for stormwater management plans identified in Article III Stormwater Management Program Permits, Procedures, and Requirements and compliance with the minimum standard MS-19 of the State Erosion and Sediment Control Regulations, applicants shall submit a stormwater management plan which provides an analysis of the impacts of the development on the watershed and the regional facility based on hydraulic and hydrologic modeling for the one-year, two-year, ten-year, and 100-year storms. The applicant shall provide an analysis that is consistent with professional engineering standards and the stormwater management design manuals.

D. Interim requirements.

Development projects located in a watershed where a regional facility is identified for construction in the county may be required to establish interim on-site controls, in lieu of permanent controls, for stormwater quantity and/or quality control until the regional facility is constructed, as deemed necessary by the County. Where interim controls are required, the applicant shall submit stormwater management plans and designs along with all associated pertinent information in accordance with this article to County staff. Rappahannock County staff shall determine if the interim controls proposed meet the intent of this article and shall notify the applicant of his or her determination.

E. Supplemental on-site controls.

Development projects that drain to an existing regional stormwater management facility may be required to implement supplemental on-site stormwater management controls when the regional facility does not provide all the required controls as determined by Rappahannock County staff.

F. Stormwater funding.

The Board of Supervisors may choose to enact a stormwater funding provision such as a pro rata share contribution and/or a stormwater utility fee to address future capital and maintenance needs.

## **ARTICLE VI Construction Inspection**

### **§ 145-24. Construction inspection.**

Stormwater management construction inspection shall utilize the final approved plans prepared in accordance with Article III: Stormwater Management Program Permits, Procedures, and Requirements. In cases where there is an Agreement in Lieu of a Plan, construction inspection shall utilize the latest regulations promulgated by the Department of Conservation and Recreation. In addition, the inspection shall comply with the latest version of the Erosion and Sediment Control Regulations, promulgated pursuant to Article 4 (10.1-566) of Chapter 5 of Title 10.1 of the Code of Virginia.

- A. Prior to the issuance of any permits, the Administrator shall require the owner to submit a reasonable performance bond with surety, cash escrow, letter of credit, or any combination thereof to ensure that action can be taken by the Administrator, at the applicant's expense, should the applicant fail, after proper notice and within the time specified, to initiate or maintain those measures identified in the approved stormwater management design plan. The performance bond or other surety shall be provided from a date prior to the issuance of any permit by the permit issuing department until sixty (60) days after the requirements of the approved stormwater management/BMP plan have been completed including as-built plans as outlined in §145-25, as determined by the Administrator.



- B. A preconstruction conference between Rappahannock County and/or the Culpeper Soil and Water Conservation District, the applicant, and the person(s) performing the work shall be required.
- C. Periodic inspections of the construction site to determine compliance with the approved stormwater management plan shall be conducted by the staff of Rappahannock County. Upon completion, the applicant is responsible for certifying that the completed project is in accordance with the approved plans and specifications (refer to As-built Plans- §145-25) and shall provide regular inspections sufficient to adequately document compliance. All inspections shall be documented, and written reports prepared that contain the following information:
  - (1) The date and location of the inspection;
  - (2) Whether construction is in compliance with the approved stormwater management plan;
  - (3) Variations from the approved construction specifications; and
  - (4) Any violations that exist.
- D. If any violations are found, the property owner shall be notified in writing of the nature of the violation and the required corrective actions. No additional work shall proceed until any violations are corrected and all work previously completed has received approval by the Rappahannock County Planning Department.
- E. If determined by Rappahannock County, in consultation with the Culpeper Soil and Water Conservation District, 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 Article VIII Enforcement and Penalties of this chapter.

**§ 145-25. Post-construction final inspection and as-built plans.**

All applicants are required to submit as-built plans for any stormwater management practices located on-site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be certified by a professional engineer. A final inspection by Rappahannock County or designee is required before the release of any performance securities can occur. A certified inspection of all aspects of the BMP construction is required, including surface as-built surveys, and geotechnical inspections during subsurface or backfilling, riser, and principal spillway installation, bioretention soil placement and compaction activities.

**ARTICLE VII Post Construction Maintenance, Inspection, and Repair of Stormwater Facilities**

**§ 145-26. Maintenance of stormwater facilities.**

- A. Responsibility for the operation and maintenance of the stormwater management facilities and storm drainage system, unless assumed by Rappahannock County, shall remain with the property owner or an owner's association. All maintenance activities shall be in accordance with standard maintenance practices for stormwater management facilities and the stormwater management design manuals.
- B. If an approved stormwater management plan requires structural or nonstructural measures, the owner shall execute a stormwater management facilities maintenance agreement and plan prior to the County granting final approval for any development for which a permit is required. The agreement shall be recorded with the Clerk of the Circuit Court of Rappahannock County prior to approval of the site plan.
- C. The stormwater management facilities maintenance agreement shall be in a form approved by the County Attorney and shall at a minimum: (i) designate for the land development the owner, governmental agency, or other legally established entity which shall be permanently responsible for maintenance of the structural or non-structural measures required by the plan; (ii) pass the responsibility for such maintenance to successors in title; (iii) ensure the continued performance of

the maintenance obligations required by the plan and this article; and (iv) identify inspection requirements of the structural or non-structural measures required by the plan.

**§ 145-27. Inspections of stormwater facilities.**

- A. To ensure proper performance of the stormwater facility, the property owner or owner's association is responsible for inspecting and performing all necessary maintenance and repairs to the stormwater management facility in accordance with the approved maintenance plan and the stormwater management design manuals as specified in the stormwater management facilities maintenance agreement. The responsible party shall keep written records of inspections and maintenance/repairs and make them available to the county upon request.
- B. The County or its agents or the Culpeper Soil and Water Conservation District shall be allowed, after giving notice to the owner, occupier, or operator of the land development, to conduct any inspection required by this chapter. The notice may be either verbal or in writing. Notice shall not be required if Rappahannock County or its agents have entered into a right of entry agreement or if the owner had granted to the County an easement for purposes of inspection and maintenance.

**ARTICLE VIII Enforcement and Penalties**

**§ 145-28. Procedures.**

Upon determination by the County that the owner has failed to comply with the approved stormwater management plan the following procedures shall apply:

- A. Rappahannock County shall serve upon the owner a written notice to comply. The notice shall be served by registered or certified mail or by delivery to the land development site. The notice shall specify the measures needed to comply with the plan and shall specify the time within such measures shall be completed.
- B. If the owner fails to take the corrective measures stated in the notice to comply within the time specified in the notice any grading, building or other permit for activities involving the land development may be revoked and the owner shall be deemed to be in violation of this chapter.
- C. If the County determines, upon completion of a maintenance inspection, that maintenance or repair of the measures is neglected, or that any stormwater management facility is a danger to public health or safety, the County may identify the work necessary to assure that such measures or facilities are not a danger to public health or safety, and shall be entitled to recover the costs of such work from the owner.

**§ 145-29. Violations.**

Any development activity that is commenced or is conducted contrary to this chapter or the approved plans and permit, may be subject to the enforcement actions outlined in this article and the Virginia Stormwater Management Law.

**§ 145-30. Stop work orders.**

Persons receiving a notice of violation will be required to halt all construction activities. This "stop work order" will be in effect until Rappahannock County confirms that the development activity is in compliance and the violation has been satisfactorily addressed. Upon failure to comply within the time specified, the permit may be revoked and the penalties provided by this chapter applied.

**§ 145-31. Civil and criminal penalties.**

Any person who violates any provision of a local ordinance or program adopted pursuant to the authority of this chapter shall be guilty of a Class 1 misdemeanor and shall be subject to a fine not exceeding

\$1,000 or up to thirty days imprisonment for each violation or both. In addition, Rappahannock County may pursue the following actions:

- A. Apply to the circuit court to enjoin a violation or a threatened violation of the provisions of this chapter without the necessity of showing that an adequate remedy at law does exist.
- B. Without limiting the remedies which may be obtained in this section, may bring a civil action against any person for violation of this chapter or any condition of a permit. The action may seek the imposition of a civil penalty of not more than \$2,000 against the person for each violation.
- C. With the consent of any person who has violated or failed, neglected or refused to obey this chapter or any conditions of a permit, Rappahannock County may provide and issue an order against such person, for the payment of civil charges for violations in specific sums, not exceed the limit specified in §145-31B.

**§ 145-32. Restoration lands.**

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. In the event that restoration is not undertaken within a reasonable time after notice, Rappahannock County 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.

**§ 145-33. Holds on occupation permits.**

Occupation permits shall not be granted until corrections to all stormwater practices have been made in accordance with the approved plans, Notice of Violation, Stop Work Order, or Permit requirements, and accepted by Rappahannock County.