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11/21/2007

What is the proposed Stormwater Management Ordinance?

By:By Beverly Hunter

The Rappahannock County Planning Commission will discuss a proposed Stormwater Management (SWM) Ordinance on December 19 at their regular monthly meeting in the Courthouse.

Third in a series

This article summarizes key concepts about this proposed Ordinance, in response to questions asked by Rappahannock citizens and RappFLOW volunteers.

The first article (Oct. 18, 2007) in this Rainwater Runoff series explained reasons why we as landowners should manage, protect and conserve rainwater. The second article (Nov. 1, 2007) provided suggestions for things a landowner can do to conserve and protect rainwater.

What is the purpose of the SWM Ordinance?

The purpose of the proposed Ordinance is to protect local streams, rivers, groundwater and properties from increases in the volume and rate of stormwater runoff and increases in pollutants when land is converted to more intensive uses such as commercial or residential subdivisions. This protects the safety and welfare of citizens, property owners, and businesses by minimizing negative impacts of increased stormwater discharges from new land development. By minimizing runoff, groundwater supplies are also protected.

What special concerns of Rappahannock County citizens does this SWM Ordinance address?

We in this county have special concerns related to protection and preservation of rainwater. Nearly all our citizens depend on well water for human use as well as for agriculture and animals. We do not have large rivers or reservoirs from which public water supplies can be drawn. Hence we must take care that rainwater replenishes the groundwater, rather than letting stormwater runoff cause damage and flooding downstream. Because we are in the headwaters of the Rappahannock River Basin, we have many (755) miles of small streams criss-crossing our lands, often on steep slopes. These small streams are particularly vulnerable to increases in stormwater runoff. Much of our residential development is on large parcels, which naturally provides vegetated spaces for rainwater to penetrate the ground easily and cheaply if we design carefully. At the same time, our development patterns result in many (over 400) miles of private roads and long, often steep, driveways that are a major source of erosion, sedimentation, and pollution of streams.

Our goals affect the types of stormwater management practices that are most desired and affordable. Rappahannock County's Comprehensive Land Use Plan (Chapter 6 of the Comprehensive Plan) calls for the "preservation of our unspoiled, natural setting, which gives it special character and identity." The county's goals include preservation of the mountains; overall viewshed; rural and open spaces; natural, scenic, and historic resources; viable rural agricultural and tourism-based economy; economical delivery of necessary public services. Future boundaries of growth in village and commercial areas are defined to "preserve community character and maintain the balance of human activities and natural ecosystems." Conventional stormwater management approaches, typically used in more densely developed areas elsewhere, may often be less appropriate in our setting than more environmentally-friendly methods.

Why a SWM ordinance at this time? Protection versus remediation.

This ordinance was drafted as part of Rappahannock County's Clean Streams program, funded by a grant from the Virginia Water Quality Improvement Fund. The Fund enabled the county to pay for a professional contractor, expert in Stormwater Management, to draft the ordinance, under the guidance of a local Steering Committee including staff of the County government and Culpeper Soil & Water Conservation District, and citizen volunteers from RappFLOW.

Protection is far less costly than remediation after the damage has been done. The challenge of restoring the hydrology and water quality in watersheds that have been densely developed is daunting. Contrast Rappahannock County with many Northern Virginia counties. With our relatively sparse population and designated sites for future commercial development, we are in a position now to protect against future damage to our hydrology, water supplies, water quality, stream channels, wetlands, and overall environment. We are also in a position now to ensure that the type of stormwater management practices used in the future, are in keeping with our special character and goals.

When does the SWM Ordinance apply?

The Stormwater Management Ordinance will apply to all land development projects that disturb over 2,500 square feet of land, except agricultural, horticultural, or forest crop activities. Where the land development activity results from construction or alteration of a single-family residence, an "agreement in lieu of a plan" may be substituted for a formal stormwater management concept and design plan. The ordinance applies at the time requests are made for driveway entrance permits, land disturbance permits, preliminary plans of subdivision, and major site development plans, and extends through construction and maintenance of stormwater management practices and facilities.

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What protections does the SWM Ordinance provide our people, land, and water?

The Ordinance specifies standards for protection of both quality and quantity of water, in terms of the outcomes to be achieved. Basically, the development must be designed and constructed in such a manner that the amount of stormwater runoff after the development is completed, will be the same or less than it was before the development took place. Even though the development creates impervious surfaces such as roads, building roofs, or parking lots, the rainwater will be managed in such a way that it will soak into the ground rather than running off through channels damaging the streams and water quality. The Ordinance specifies the goals, and allows for flexibility in the combination of Best Management Practices (BMPs) to be used depending upon the specific site and type of development.

Why are Low Impact Development (LID) techniques emphasized in this ordinance?

Low Impact Development (LID) is a stormwater management approach with a basic principle that is modeled after nature: manage rainfall at the source, using decentralized small-scale controls. The goal in using LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, and detain runoff close to its source. Techniques are based on the premise that stormwater management should not be seen as stormwater disposal. Instead of conveying and managing / treating stormwater in large, costly end-of-pipe facilities located at the bottom of drainage areas (the "conventional" approach), LID addresses stormwater through small, cost-effective landscape features located at the site. For example, rainwater from a house roof can be directed through the downspout of a roof gutter to spread out on a grassy or garden area so it can percolate into the ground, rather than running down a driveway or directly into a creek. Examples of LID site design cited in the draft ordinance include:

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

By giving explicit emphasis and priority to LID in the local Ordinance, we help to ensure that landowners will not encounter bureaucratic obstacles to employing these more environmentally-friendly and often lower-cost practices.

How does the SWM Ordinance affect private roads and driveways?

Due to our terrain and development patterns, private roads and driveways are one of our greatest sources of stormwater runoff and associated damage and pollution. If a private road or driveway will be more than 1,000 feet in length and have 10 percent grade at any point, then an engineer's plan proving adequate erosion and stabilization measures is required. The Ordinance offers suggested design criteria for all private roads and driveways.

How does the Ordinance affect stream buffer vegetation?

A riparian buffer is an area adjacent to and landward of a stream. The trees, shrubs, and grasses in this buffer area serve many important ecological and biological functions, and serve as the last line of defense against stormwater runoff, erosion, flooding, water pollution, and damage to streambanks. Protection of the stream buffer area is not specified directly in the draft SWM ordinance, but it is addressed in proposed revisions to the Zoning Ordinance in a Riparian Buffer Overlay District.

What documentation does the Ordinance require?

The documentation required for approval of a stormwater management plan depends on whether the plan is for a single family residence or for some larger project such as a commercial development or a residential subdivision. For the larger projects, the Ordinance specifies first a "stormwater management concept" and then a "stormwater management design plan." The management design plan includes maps, charts, graphs, tables, photographs, descriptions to show all of the practices and facilities that will be integrated into the development. It includes how water quality, quantity, and stormwater drainage requirements will be addressed. For a single family residence, "an agreement in lieu of a plan" may be substituted for the more formal concept and design plans.

How will the Ordinance be enforced and the practices maintained?

The Culpeper Soil and Water Conservation District staff and County staff will review and approve stormwater management plans. The proposed Ordinance specifies inspections at several stages of development, using the final approved plans and the erosion and sediment control regulations. If violations are found, the property owner is notified in writing of the nature of the violation and no additional work can proceed until the violations are corrected and approved.

Responsibility for the operation and maintenance of the stormwater management facilities and drainage system remains with the property owner or owner's association. Civil penalties are provided for violations of the Ordinance. Occupation permits shall not be granted until corrections to all stormwater management practices have been made in accordance with approved plans, Notice of Violation, Stop Work Order, or Permit requirements, and accepted by Rappahannock County.

For more information:

Proposed Stormwater Management Ordinance: <http://www.rappflow.org/stormwater-management/index.html>

Stormwater management practices:

http://www.cwp.org/stormwater_practices.htm

County ordinances: <http://www.rappahannockcountyva.gov/>

Rappahannock County Clean Streams program: http://www.rappflow.org/water_quality_programs.html



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