



March 31, 2009

Rivanna River Basin Commission Welcomes Your Comments

Thank you for attending the Fluvanna County Developers Roundtable. Your comments and questions are appreciated and especially helpful as we plan the final Roundtable (Albemarle County/City of Charlottesville on April 15).

The Rivanna River Basin Commission (RRBC) has identified stormwater volume – and the resulting increase in sedimentation in area streams – as the greatest threat to the health of the Rivanna and its watershed. The Commission recognizes that run-off from development is only one component of the problem; *all open lands*, including agricultural, deliver increased volumes to streams. Contributions from already developed landscapes also contribute significant amounts of stormwater. The proposed stormwater regulations that are due to become effective in 2010 will impose new controls on stormwater specifically from new development.

The Rivanna River Basin Commission is encouraging local discussion about the regulations and how they will improve water quality and decrease the runoff volumes that are associated with pollutant loads to streams. A representative from the Virginia Department of Conservation and Recreation (DCR) is available at these Roundtables to answer questions. The Commission hopes these Roundtables will provide an additional venue for the building community to communicate concerns prior to the public comment period later this spring.

We plan to collect all your comments and questions in one document and send them via email to you within 10 days. You may correct, amend, or add to this document. Your comments and questions will be then forwarded to DCR at the conclusion of this Roundtable series by the Rivanna River Basin Commission in late April 2009. You are also encouraged to comment directly during the public comment period later this spring.

For further information about the Rivanna River Basin Commission and the Developer Roundtables, please contact: Leslie Middleton (434) 975-0224 or lmiddleton@embarqmail.com.

Updates and information about these proposed changes to the stormwater regulations can be found at <http://www.dcr.virginia.gov/lr2c.shtml>

The mission of the Rivanna River Basin Commission (RRBC) is to provide guidance for the stewardship and enhancement of the water and natural resources of the Rivanna River Basin and a forum in which local governments and citizens can discuss issues affecting the Basin's water quality and quantity and other natural resources. The RRBC was formed through enabling state legislation in 2004 and consists of elected officials from the governing bodies of Greene, Fluvanna, and Albemarle counties and the City of Charlottesville, as well as board members from the Thomas Jefferson and Culpepper Soil and Water Conservation Districts, and citizen members appointed from each watershed locality.

Albemarle County
Sally H. Thomas (Chair)
Lindsay G. Dorrier, Jr.
John C. Martin

City of Charlottesville
Holly Edwards
Satyendra Huja
vacant

Fluvanna County
Marvin F. Moss (Vice-Chair)
John Gooch
Andy Wilson

Greene County
Clarence Peyton
Cari Schmitt
Roberta Savage

Culpeper SWCD
Robert Runkle

Thomas Jefferson SWCD
John E. Easter, II

VIRGINIA STORMWATER MANAGEMENT PROGRAM

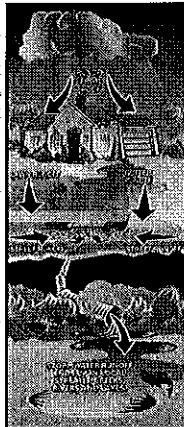
Development & Re-Development Activities

REGULATORY UPDATE

alyson.sappington@vaswcd.org
(434) 975-0224; www.tjswcd.org

Other issues not addressed today!

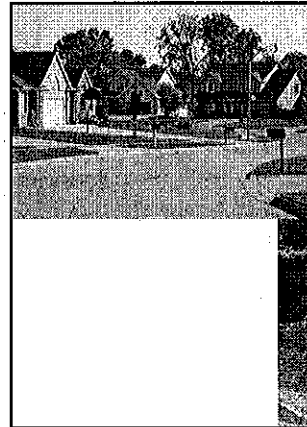
- Agriculture
 - Ag Stewardship Act - VDACS
 - VPA permits (includes CAFOs, biosolids, animal wastes) - DEQ
- Wastewater Treatment Plants
 - VPDES permits - DEQ



WHY "MANAGE" STORMWATER ANYWAY??

ISSUES OF:

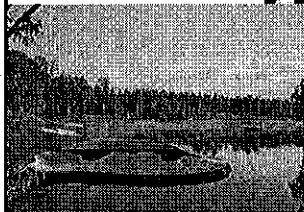
1. Pollution runoff from surfaces
2. Increased volumes of water
3. Increased velocities
4. Increased peak flows



INCREASED VOLUME & VELOCITY



POLLUTION RUNOFF



2004

HB1177 – Revised Virginia Stormwater Management Law to ...

- Consolidate all stormwater management programs within DCR
- Transfer oversight from 4 state Boards to SWCB & DCR
- Provide consistency statewide
- Update Regulations
- Required quality & quantity control statewide

HB1177 → SWM Programs Mandatory Statewide (10.603.3)

- Localities located within Tidewater Virginia or localities partially or wholly designated as an "MS4" are required to adopt a local stormwater management program. (Albemarle County, City of Charlottesville)
- Localities not within Tidewater and not MS4 may elect to adopt and administer a local stormwater management program.
- In the absence of the delegation of a stormwater management program to a locality, DCR must administer a stormwater management program within that jurisdiction.

HB1177 → 10.1-603.4 (Code of VA)

- Procedures for delegation of program to locality
- Long-term maintenance of practices
- Administrative procedures of local programs
- Statewide permit fee schedule to cover costs
- Statewide standards for land disturbance 1 acre or greater ($\geq 2,500$ sq.ft. In CBPA areas)
- Minimum design criteria for practices
- Encourage LID
- Require that programs "maintain after-development runoff rate of flow and characteristics that replicate, as nearly as practicable, the existing predevelopment runoff characteristics and site hydrology, or improve upon the contributing share of the existing predevelopment runoff characteristics and site hydrology if stream channel erosion or localized flooding is an existing predevelopment condition"

Technical Advisory Committee

Includes design consultants, local officials, SWCDs, PDCs, environmental organizations, DCR



- Meeting since May 2006
- Amending SW Regulations:
 - Part I (definitions, purpose, applicability)
 - Part II (technical criteria)
 - Part III (local program administration)
 - Part XIII (fees)



Technical Criteria: New Approaches

- Nutrient Load Standard tied to Tributary Strategy goals
- Integration of quality & quantity criteria
- More options to meet requirements (site design, new practices)
- Treat "managed turf" in addition to impervious cover
- Compliance spreadsheet
- Training & feedback – Design charrettes

Nutrient Load

Existing:

- Average land cover condition (16% impervious) = .45 lbs/ac/year TP
- Impervious area only
- Treatment volume = $WQV = \frac{1}{2} \times \text{impervious area}$

Proposed :

- Tributary Strategy goal = .28 lbs/ac/year TP (Prior developed: 20% below existing)
- Impervious cover and managed turf → Incentives to conserve forest cover
- Treatment volume (Tv) based on 90th percentile storm event (1") & site runoff coefficient (Rv)

Integration: Quality & Quantity

Existing:

- Quantity criteria based on peak flows only (no volume reduction "credit")

Proposed :

- Runoff Reduction (RR) achieved from tree canopy, soil or engineered infiltration, evaporation, rainfall harvesting, etc.
- RR determines additional quantity & quality treatment needed

Compliance Tools

Existing:

- "Blue Book" practices (Virginia Stormwater Mgmt Handbook)

Proposed :

- "Blue Book" practices, Clearinghouse (web), plus site design options
- Spreadsheet (practice performance = runoff reduction + pollutant removal)

www.dcr.virginia.gov/lr2f.shtml

- Treatment train concept



Acceptable BMPs

Nutrient Reduction & Runoff (Volume) Reduction Rates Assigned:

- Green Roof
- Rooftop Disconnection
- Rain tanks/cisterns
- Soil Amendments
- Permeable Pavement
- Grass Channel
- Bioretention
- Infiltration
- Dry Swale
- Sheet Flow to Conserved Open Space

Design standards Levels 1 & 2 enhanced

Acceptable BMPs

Nutrient Reductions Rates Assigned

(Insignificant Runoff Volume Reductions):

- Wet Swale
- Extended Detention Pond
- Filtering Practice
- Constructed Wetland
- Wet Pond

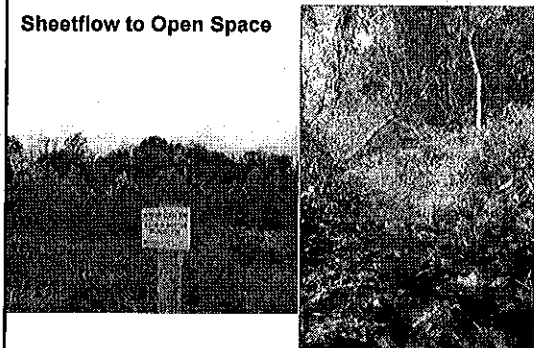
Design Standards Levels 1 & 2 (enhanced)

Compliance Spreadsheet Encourages Step-By-Step Design Approach:

1. Incentives to conserve forest & open space and apply good site design (minimize impervious areas and soil disturbance)
2. Engineered practices that address runoff reduction in addition to nutrient reductions
3. Runoff reduction volume (RR) incorporated to provide remainder of reductions needed in nutrient load and quantity through use of conventional practices.
4. Potential use of "offset fee" for unmet nutrient reduction needs (last resort, based on watershed plan)

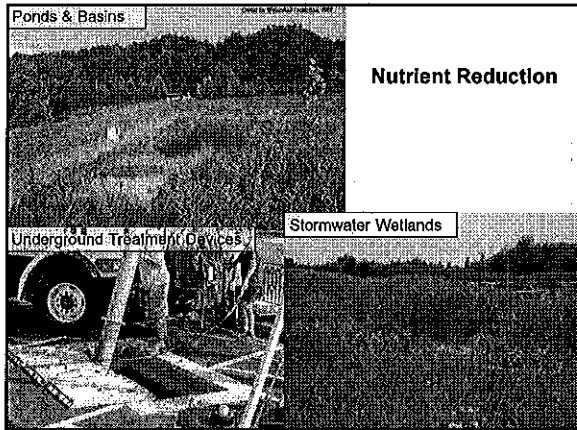


Sheetflow to Open Space



Engineered – Nutrient & Runoff Reduction





Quantity Criteria – Channel Protection

Existing:

- MS-19 (Erosion & Sediment Control Regulations)
- Pgm Authority may request 24 hr. ext detention 1 yr., 24 hr. storm

Proposed:

- Discharge to man-made system – 2 year storm basis (adequacy)
- Discharge to restored system – design capacity of system
- Discharge to stable natural channel – **Energy balance** concept (1 year storm)
 - $Q_{\text{post}} \times RV_{\text{post}} = Q_{\text{pre}} \times RV_{\text{pre}}$
- Discharge to unstable natural channel – **Energy balance** concept (1 year storm)
 - $Q_{\text{post}} \times RV_{\text{post}} = Q_{\text{forest}} \times RV_{\text{forest}}$

Quantity Criteria – Flood Protection

Existing:

- $Q_{10 \text{ post}} \leq Q_{10 \text{ pre}}$

Proposed:

- Discharge to man-made system, restored system, or natural system that does not flood in 10-yr storm
 - $Q_{10 \text{ post}} \leq Q_{10 \text{ pre}}$
- Discharge to natural system that currently experiences flooding
 - $Q_{10 \text{ post}} = Q_{10 \text{ forested}}$

LOCAL PROGRAM ADMINISTRATION

- Stormwater plan review and approval procedures
- Long term maintenance & inspections of BMPs
- Enforcement procedures
- Reporting and record-keeping requirements
- Procedures for local program authorization
- Procedures for review of local programs

Fees to Support Local Program Implementation and DCR Oversight:

- Local program (72%) – covers 100% projected local costs**
- DCR oversight (28%) – covers 100% projected DCR costs**

VSMP General Permit – Construction Activities

LAND DISTURBANCE	CURRENT	PROPOSED
2,500 sq. ft. to <0.5 acre (CB Act localities)	N/A	\$290
<1 acre (w/in common plan of development)	N/A	\$290
0.5 acre to <1 acre (CB Act localities)	N/A	\$1,500
1 acre to <5 acres	\$300	\$2,700
5 acres to <10 acres	\$500	\$3,400
10 acres to <50 acres	\$500	\$4,800
50 acres to <100 acres	\$500	\$6,100
100 acres and up	\$500	\$9,600

Plus annual maintenance and/or modifications fees if applicable

Economic Impact Analysis

- VA Tech report (costs of implementation)
– Dec. 31, 2008 (available at www.dcr.virginia.gov/lr2c.shtml)
- DCR report (includes VA Tech report and potential benefits) – To be released prior to public comment period.

VA Tech Report

(the condensed version: 40 pages to 4 bullets)

- “Generally” increases costs of land disturbance
- Significant site-specific variability (field conditions, high variability in costs of BMPs, off-site alternatives, local program options) → no comprehensive cost estimate produced.
- Little known about long term maintenance costs (over lifespan: 40%-280% of construction costs)
- Case scenarios provided – Ranges (upfront cost increases):
 - \$0 - \$750,000 per project
 - \$0 - \$6,000 per dwelling unit

Process, Input, Feedback



- NOIRAs
- TAC
- Charrettes (5 “round 1”; “round 2” on-going): >300 participants
- Draft to SWCB (passed Sept. 24, 2008)
- Governor, Economic Impact Analysis
- Public Comments (60 days) (est. May +/-)
- Consider Comments & Insights from Charrettes
- Final Regulations (HB1991: effective July 2010)

Wrap-Up Points

- Program Consistent Statewide
- Volume Reductions and Pollutant Removal Integrated
- More Tools in the Toolbox (Site Design, Handbook, Clearinghouse, Spreadsheet, Charrettes)
- Incentives to Protect/Restore Forest Cover
- Incentives to Reduce Soil Disturbance
- Based on Tributary Strategy Goals
- Option for Offset Fee
- Program Fees Designed to Cover Program Costs

For more information and continued updates:

<http://www.dcr.virginia.gov/lawregs.shtml>

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Stormwater parts 1, 2, 3 & 13
MS4
Construction General Permit