FAIRFAX COUNTY
BOARD OF SUPERVISORS
September 10, 2013

AGENDA

9:30	**Done**	Presentations
10:30	**Approved**	Public Hearing on the County and Schools' FY 2013 Carryover Review to Amend the Appropriation Level in the FY 2014 Revised Budget Plan
10:45	**Done**	Items Presented by the County Executive

ADMINISTRATIVE ITEMS

1	**Approved**	Authorization to Advertise the Fairfax County Uniformed Retirement System - Amendments to the Code of the County of Fairfax, Chapter 3, Increasing the Membership of the System's Board of Trustees
2	**Approved**	Approval of the Distribution of a Plain English Explanation for the 2013 School Bond Referendum
3	**Approved**	Authorization to Advertise a Public Hearing to Continue to Lease Board-Owned Property at the Lewinsville Facility to McNair Child Development Center, Inc. dba "Fun & Friends Child Development Center" (Dranesville District)
4	**Approved**	Authorization to Advertise Adoption of Chapter 124 (Stormwater Management Ordinance), Repeal of Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage), and Proposed Amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance), 118 (Chesapeake Bay Preservation Ordinance), and Appendix Q (Land Development Services Fees) of The Code of the County of Fairfax, Virginia Re: Implementation of the Virginia Stormwater Management Act and Virginia Stormwater Management Program (VSMP) Permit Regulations
5	**Approved**	Approval to Change a Portion of the Proposed Street Name from Lakeford Drive to Fairview Park Drive (Providence District)
6	**Approved**	Approval of a Street Name Change from Cane Hill Way to Caleb Court (Lee District)

FAIRFAX COUNTY
BOARD OF SUPERVISORS
September 10, 2013

ADMINISTRATIVE ITEMS (Continued)

7	**Approved**	Authorization to Advertise Proposed Amendments to Chapter 6 (Storm Drainage) and Chapter 12 (Vegetation Preservation and Planting) of the Public Facilities Manual (PFM) Re: Water Quality Controls, Adequate Outfall, Detention, Maintenance of Stormwater Management Facilities, and Replanting of Disturbed Areas
8	**Approved**	Streets into the Secondary System (Lee District)
9	**Approved**	Supplemental Appropriation Resolution AS 14067 for the Department of Vehicle Services to Accept Grant Funding from the Virginia Department of Environmental Quality as a Result of the Virginia Electric Power Company Settlement to Install Diesel Retrofits on School Buses
10	**Approved**	Discontinuance of Portions of Crest Drive (Route 9684) from the Secondary System of State Highways (Mason District)
11	**Approved**	Authorization to Advertise a Public Hearing to Establish Parking Restrictions on Daniels Avenue, Poplar Street and Little River Turnpike Service Road (Mason District)
12	**Approved**	Authorization to Advertise a Public Hearing to Establish Parking Restrictions on Williams Drive (Providence District)
13	**Approved**	Authorization to Advertise a Public Hearing to Establish Parking Restrictions on Penrose Place (Sully District)
14	**Approved**	Extension of Review Period for 2232 Review Application (Mason District)

ACTION ITEMS

1	**Approved**	Approval of the Update to the Contractual Agreement for the Northern Virginia Regional Identification System (NOVARIS)
2	**Approved**	Establishment of a Revised Membership for the Mosaic District Community Development Authority Board (Providence District)
3	**Approved**	Approval of a Draft Board of Supervisors' Meeting Schedule for Calendar Year 2014
4	**Approved**	Presentation of the Delinquent Tax List for Tax Year 2012 (FY 2013)

FAIRFAX COUNTY
BOARD OF SUPERVISORS
September 10, 2013

	ACTION ITEMS (Continued)	
5	**Approved**	Approval of a License Agreement Between Fairfax County and George Mason University Related to the Operation of Bus Service at the Burke Centre Virginia Railway Express Station (Braddock District)
6	**Approved**	Endorsement of I-66 Vienna Metrorail Accessibility and Capacity Improvements (I-66 Bus Ramp) (Providence District)
	INFORMATION ITEMS	
1	**Noted with amendment**	County Holiday Schedule – Calendar Year 2014
2	**Noted**	Contract Award - Continuous Duty Nursing Services
3	**Noted**	Minor Schedule Changes to Fairfax Connector Routes to be Implemented in September 2013 (Lee, Mount Vernon, Springfield, Sully Districts)
10:55	**Done**	Matters Presented by Board Members
11:40	**Done**	Closed Session
	PUBLIC HEARINGS	
3:30	**Approved**	Board Decision on Establishing Parking Restrictions within the Hilltop Business Park (Lee District)
3:30	**Approved**	Board Decision on the Proposed Interim Development Agreement Between the Board of Supervisors and Lake Anne Development Partners LLC for the Redevelopment of the Crescent Apartment Site (Hunter Mill District)
3:30	**Approved**	Public Hearing on PCA 94-V-010 (Inova Health Care Services) to Amend the Proffers for RZ 94-V-010 (Mount Vernon District)
3:30	**Approved**	Public Hearing on PCA 2000-SU-032-04 (Inova Health Care Services) to Amend the Proffers for RZ 2000-SU-032 (Sully District)
3:30	**Approved**	Public Hearing on PCA 2008-PR-009-02 (Inova Health Care Services) to Amend the Proffers for RZ 2008-PR-009 (Providence District)

FAIRFAX COUNTY
BOARD OF SUPERVISORS
September 10, 2013

	PUBLIC HEARINGS (Continued)	
3:30	**Approved**	Public Hearing on RZ 2013-BR-003 (The Evergreene Companies, LLC) (Braddock District)
3:30	**Deferred Decision Only to 9/24/13 at 3:30 p.m.**	Public Hearing on SEA 93-M-047 (The Parklawn Recreation Association, Inc. & New Cingular Wireless PCS, LLC) (Mason District)
4:00	**Deferred to 9/24/2013 at 4:00 p.m.**	Public Hearing on SEA 2009-DR-008 (Oakcrest School) (Hunter Mill District)
4:00	**Approved**	Public Hearing on Amendment to Article 17.3, Chapter 4, of the Fairfax County Code to Impose a Penalty for Certain Motor Vehicles Not Properly Displaying Current Virginia License Plates

Fairfax County, Virginia

BOARD OF SUPERVISORS AGENDA

Tuesday
September 10, 2013

9:30 a.m.

Presentation to the Police Department of the Director's Award of Distinction for Excellence in False Alarm Management by the Security Industry Alarm Coalition for consistently reducing false alarm calls.

PRESENTATIONS

RECOGNITIONS

- CERTIFICATE – To recognize residents and businesses that have made properties available to Fairfax County public safety personnel for training. Requested by Chairman Bulova.

- CERTIFICATE – To recognize the Fairfax Police Youth Club Girls Team and the NOVA Mens Team for winning the Rugby Virginia High School Division I state championships. Requested by Supervisor Herrity.

- CERTIFICATE – To recognize Ken Disselkoen for his years of service to Fairfax County. Requested by Supervisor McKay.

- CERTIFICATE – To recognize Robert Mears, Laurnz Swartz and Ryan Randall of the Retirement Administration Agency for their years of service to Fairfax County. Requested by Supervisor Frey.

— more —

Board Agenda Item
September 10, 2013

- RESOLUTION – To recognize Kevin Fay for his years of service to Fairfax County. Requested by Supervisor Foust.

- CERTIFICATE – To recognize Barbara Doyle, CEO of Inova Mount Vernon Hospital, for her accomplishments. Requested by Supervisor McKay.

DESIGNATIONS

- PROCLAMATION – To designate September 15 through October 15 as Hispanic Heritage Month in Fairfax County. Requested by Chairman Bulova.

- PROCLAMATION – To designate September 8-14 as Suicide Prevention Week in Fairfax County. Requested by Supervisor Cook.

STAFF:
Merni Fitzgerald, Director, Office of Public Affairs
Bill Miller, Office of Public Affairs

Board Agenda Item
September 10, 2013

10:30 a.m.

Public Hearing on the County and Schools' *FY 2013 Carryover Review* to Amend the Appropriation Level in the FY 2014 Revised Budget Plan

ISSUE:
Public Hearing and Board action on the County and Schools' *FY 2013 Carryover Review.*

RECOMMENDATION:
The County Executive recommends that, after holding a public hearing, the Board approve staff recommendations including the County and Schools' *FY 2013 Carryover Review.*

TIMING:
The public hearing has been advertised for 10:30 a.m. on September 10, 2013. State law allows the Board to act on proposed amendments to the budget on the same day as the public hearing.

BACKGROUND:
On July 30, 2013, the Board of Supervisors authorized staff to advertise a public hearing scheduled to be held on September 10, 2013, regarding the County and Schools' Carryover Review. Section 15.2-2057 of the Code of Virginia requires that a public hearing be held prior to Board action. Board approval of an amendment to increase the FY 2014 appropriation level can occur immediately following the public hearing.

ENCLOSED DOCUMENTS:
(Available online at:
http://www.fairfaxcounty.gov/dmb/carryover/fy2013/fy2013_carryover.pdf)
Attachment A: Advertisement for public hearing
Attachment B: July 30, 2013 Memorandum to the Board of Supervisors from Edward L. Long Jr., County Executive, with attachments, transmitting the County's *FY 2013 Carryover Review* with appropriate resolutions
Attachment C: Fairfax County School Board's FY 2013 Final Budget Review and Appropriation Resolutions

STAFF:
Edward L. Long Jr., County Executive
Susan W. Datta, Chief Financial Officer

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Board Agenda Item
September 10, 2013

10:45 a.m.

Items Presented by the County Executive

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ADMINISTRATIVE – 1

Authorization to Advertise the Fairfax County Uniformed Retirement System - Amendments to the Code of the County of Fairfax, Chapter 3, Increasing the Membership of the System's Board of Trustees

ISSUE:
Board authorization to advertise a public hearing on proposed amendments to Article 3 of Chapter 3 of the *Code of the County of Fairfax*, to increase the Board of Trustees for the Fairfax County Uniformed Retirement System from eight to ten members by adding a fourth trustee appointed by the Board of Supervisors and a trustee elected from and by the retired members of the System.

RECOMMENDATION:
The County Executive recommends that the Board authorize advertisement of a public hearing on the proposed amendments to Chapter 3, Article 3.

TIMING:
Authorization on September 10, 2013, to advertise a public hearing on the proposed amendments. The public hearing will take place on October 8, 2013, at 4:30 p.m.

BACKGROUND:
The Board of Trustees (BOT) for the Fairfax County Uniformed Retirement System currently consists of the following eight members: three trustees appointed by the Board of Supervisors; two trustees elected by the uniformed employees of the Fire and Rescue Department and the employees of the Department of Public Safety and Communications; one trustee elected by the uniformed employees of the Sheriff's Department, the Department of Animal Control, the park police and the helicopter pilot members of the system; the Director of the Department of Finance; and the Director of the Department of Human Resources.

The System's retired members have requested that they be empowered to elect one of their own as a trustee, so that they are directly represented on the BOT. The BOT supports this request, and proposes adding a trustee elected by the System's retired members. To preserve the equal balance on the BOT between representatives of the System's members and representatives of the County citizenry, the BOT also proposes adding a fourth trustee appointed by the Board of Supervisors. Adoption of these proposals will result in the BOT's membership increasing from eight to ten trustees.

FISCAL IMPACT:
There is no actuarial cost impact associated with these changes.

ENCLOSED DOCUMENTS:
Attachment 1: Proposed amendments to Chapter 3, Article 3
Fairfax County Uniformed Retirement System
Attachment 2: Letter from Fiona E. Liston, Cheiron, to Robert Mears dated 7/30/13 Re:
Uniformed Retirement System

STAFF:
Robert L. Mears, Executive Director, Fairfax County Retirement Systems
Benjamin R. Jacewicz, Assistant County Attorney

Section 3-3-12. Membership; term of office.

(a)

The Board of Trustees of the system shall consist of eight Trustees as follows: ~~Three~~ Four Trustees appointed by the Board of Supervisors; two Trustees elected by the uniformed employees of the Fire and Rescue Department and the employees of the Department of Public Safety Communications; one Trustee elected by the uniformed employees of the Sheriff's Department and the Department of Animal Control and park police and Helicopter Pilot members of the system; one Trustee elected by the retirees of the system; the Director of Finance, who shall be treasurer of the Board; and the Director of Personnel or the personnel officer responsible for employee benefits for Fairfax County.

(b)

With the exception of the Director of Finance, and the Director of Personnel, or the personnel officer responsible for employee benefits for Fairfax County, who shall be ex officio members of the Board, the terms of office of the Trustees shall be four years.

(c)

The only persons eligible to be elected by the uniformed employees of the Fire and Rescue Department and the employees of the Department of Public Safety Communications as Trustees are uniformed employees of the Fire and Rescue Department and employees of the Department of Public Safety Communications. The only persons eligible to be elected as a Trustee by the uniformed employees of the Sheriff's Department and the Department of Animal Control and park police and Helicopter Pilot members of this system are uniformed employees of the Sheriff's Department and the Department of Animal Control and park police and Helicopter Pilot members of this system. The offices of such trustees shall be vacated should such members separate from service prior to the completion of their term. ~~(1961 Code, § 9-82; 11-74-9; 20-81-3; 13-92-3; 40-93-3; 36-10-3.)~~

(d)

The only persons eligible to be elected as a Trustee by the retirees of the system are retirees of the system. (1961 Code, § 9-82; 11-74-9; 20-81-3; 13-92-3; 40-93-3; 36-10-3.)

CHEIRON Classic Values, Innovative Advice

Via Email

July 30, 2013

Mr. Robert Mears
Executive Director
Fairfax County Retirement Systems
10680 Main Street, Suite 280
Fairfax, Virginia 22030-3812

Re: Actuarial Impact on the Uniformed Retirement System
Proposal to expand the Board of Trustees

Dear Bob:

As requested, we are writing to provide an actuarial cost estimate for the proposed change to the Fairfax County Uniformed Retirement System to expand the Board of Trustees from eight to ten Trustees. This amendment is not expected to have an impact on the cost of the Retirement System.

This letter was prepared for Fairfax County Retirement Systems for the purposes described herein. This cost estimate is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

To the best of my knowledge, this letter and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as a credentialed actuary, I meet the Qualifications Standards of the American Academy of Actuaries to render the opinion contained in this letter. This letter does not address any contractual or legal issues. I am not an attorney, and our firm does not provide any legal services or advice.

Please call if you have any questions or comments.

Sincerely,
Cheiron

Fiona E. Listen

Fiona E. Listen, FSA, EA
Principal Consulting Actuary

cc: Christian Benjaminson, FSA

1750Tysons Boulevard, Suite 1100, McLean, VA 22102 Tel: 703.893.1456 Fax: 703.893.2006 www.cheiron.us

Board Administrative Item
September 10, 2013

ADMINISTRATIVE - 2

Approval of the Distribution of a Plain English Explanation for the 2013 School Bond Referendum

ISSUE:
Board approval of the preparation and printing of an explanation for the forthcoming referendum on whether the County should be authorized to issue bonds in the maximum aggregate principal amount of $250,000,000 for the Fairfax County Public Schools. If approved by the Board, staff plans to make this explanation available on the County's Web site and at County polling places, both for absentee voters and for voters on Election Day.

RECOMMENDATION:
The County Executive recommends that the Board authorize the preparation and printing of the explanation for the school bond referendum.

TIMING:
Early Board action is recommended to provide time for the printing and distribution of the explanation to citizens prior to the election.

BACKGROUND:
On May 9, 2013, the Fairfax County School Board adopted a resolution asking the Board to petition the Fairfax County Circuit Court to order a special election on November 5, 2013, to determine whether the Board should be authorized to contract a debt, borrow money, and issue capital improvement bonds in the maximum aggregate principal amount of $250,000,000 for the purpose of providing funds for the improvement of public school facilities. On May 14, 2013, the Board considered the School Board's request and adopted its own resolution asking the Circuit Court to order such a special election. The County Attorney then petitioned the Circuit Court for such an order, and on May 20, 2013, Chief Circuit Court Judge Dennis J. Smith entered an order for the referendum as requested.

Virginia Code § 24.2-687 requires localities to prepare explanations of referendum questions involving the issuance of bonds. The explanation must include the ballot question and a neutral explanation of not more than 500 words prepared by the locality's attorney in "plain English." The explanation must (i) state the estimated maximum amount of the bonds proposed to be issued, and (ii) state the proposed use of the bond

proceeds, and if there is more than one use, state the proposed uses for which more than 10 percent of the total bond proceeds is expected to be used.

Pursuant to Section 203 of the federal Voting Rights Act and the language minority determinations of the Director of the United States Bureau of the Census on October 13, 2011, these explanations must be made available in Spanish as well as in English. As in the past, staff will prepare translations of other common, non-English languages for interested citizens, but because Virginia law strictly limits the material that may be distributed within a polling place, only the English and Spanish versions will be made available in the polling places. The other translations will be made available at places other than polling places. All versions will be posted online.

Staff recommends that the Board authorize the printing and distribution of the explanation in English and Spanish for this referendum in sufficient copies to make it available to voters at County polling places for absentee voters prior to the general election and at all polling places during the general election on November 5, 2013.

FISCAL IMPACT:
The cost of translating and printing the explanation is estimated at $1,700, and that cost can be met by existing Board appropriations.

ENCLOSED DOCUMENTS:
Attachment 1 – Virginia Code § 24.2-687
Attachment 2 – Draft Explanation for School Bonds

STAFF:
Susan Datta, Chief Financial Officer
Joseph LaHait, Debt Coordinator
Erin C. Ward, Senior Assistant County Attorney

Attachment
1

§ 24.2-687. Authorization for distribution of information on referendum elections.

A. The governing body of any county, city or town may provide for the preparation and printing of an explanation for each referendum question to be submitted to the voters of the county, city or town to be distributed at the polling places on the day of the referendum election. The governing body may have the explanation published by paid advertisement in a newspaper with general circulation in the county, city or town one or more times preceding the referendum.

The explanation shall contain the ballot question and a statement of not more than 500 words on the proposed question. The explanation shall be presented in plain English, shall be limited to a neutral explanation, and shall not present arguments by either proponents or opponents of the proposal. The attorney for the county, city or town or, if there is no county, city or town attorney, the attorney for the Commonwealth shall prepare the explanation. "Plain English" means written in nontechnical, readily understandable language using words of common everyday usage and avoiding legal terms and phrases or other terms and words of art whose usage or special meaning primarily is limited to a particular field or profession.

If the referendum question involves the issuance of bonds by a locality, the locality shall provide for such printed explanation. The explanation shall (i) state the estimated maximum amount of the bonds proposed to be issued, and (ii) state the proposed use of the bond proceeds, and if there is more than one use, state the proposed uses for which more than 10 percent of the total bond proceeds is expected to be used.

B. Nothing in this section shall be construed to limit a county, city or town from disseminating other neutral materials or advertisements concerning issues of public concern that are the subject of a referendum; however, the materials or advertisements shall not advocate the passage or defeat of the referendum question.

C. This section shall not be applicable to statewide referenda.

D. Any failure to comply with the provisions of this section shall not affect the validity of the referendum.

(1996, c. 297; 2004, cc. 21, 399; 2006, c. 302; 2011, c. 590.)

PUBLIC SCHOOL BONDS EXPLANATION

BALLOT QUESTION

PUBLIC SCHOOL BONDS

Shall the Board of Supervisors of Fairfax County, Virginia, contract a debt, borrow money, and issue capital improvement bonds in the maximum aggregate principal amount of $250,000,000 for the purposes of providing funds, in addition to funds from school bonds previously authorized, to finance, including reimbursement to the County for temporary financing for, the costs of school improvements, including acquiring, building, expanding and renovating properties, including new sites, new buildings or additions, renovations and improvements to existing buildings, and furnishings and equipment, for the Fairfax County public school system?

☐ **YES**

☐ **NO**

EXPLANATION

Virginia law permits the Fairfax County government to borrow money to buy land and/or construct projects by issuing general obligation bonds. General obligation bonds are sold to investors, and the bonds are repaid over time with future County revenues. The money received from the sale of the bonds is used as a source of funding for many County facilities. Bond financing permits the costs of those County facilities to be repaid over a period of years. However, prior to incurring such a County general obligation debt, the voters of the County must authorize the County to borrow those funds.

The question being presented in this referendum asks the voters of the County whether the County government should be authorized to contract a debt and issue bonds in the maximum amount of $250,000,000 for a range of planned improvements to the County's public schools and support facilities. If this question is approved by a majority of the voters who vote on this question and bonds are sold, then the proceeds from the sale of such bonds must be used for the purposes set forth in the ballot question. These funds will be used to construct new schools, plan and design projects, supervise construction, add onto and renovate existing school facilities, and make other physical repairs and improvements. More specifically, the County's current plans for the use of the proceeds of bonds that may be authorized by this referendum are set forth below. The County may in the future alter these specific plans, but in such a case the County would have to use the bonds for a purpose described in the ballot question.

NEW CONSTRUCTION

Construction of two new elementary schools, construction and/or planning of additions and other modifications at one existing elementary and one existing high school and site acquisition funds in order to address enrollment increases in certain areas of the County and overcrowding at certain schools.

RENOVATION

Planning and/or construction of renovations of 17 elementary schools, two middle schools, and three high schools.

OTHER IMPROVEMENTS

Includes funding for replacements and improvements to facility infrastructure such as: roofs, major mechanical systems, parking lots, security systems, technology systems, athletic infrastructure, and upgrades to comply with the Americans With Disabilities Act.

This explanation was prepared, printed, and made available at voter registration sites and at election polling places in accordance with Virginia Code § 24.2-687

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Board Agenda Item
September 10, 2013

ADMINISTRATIVE - 3

Authorization to Advertise a Public Hearing to Continue to Lease Board-Owned Property at the Lewinsville Facility to McNair Child Development Center, Inc. dba "Fun & Friends Child Development Center" (Dranesville District)

ISSUE:
Board authorization to advertise a public hearing to continue to lease Board-owned property at the Lewinsville Facility to McNair Child Development Center, Inc. dba "Fun & Friends Child Development Center".

RECOMMENDATION:
The County Executive recommends that the Board authorize a public hearing to continue to lease Board-owned property at the Lewinsville Facility to Fun & Friends Child Development Center.

TIMING:
Board action is requested on September 10, 2013 to provide sufficient time to advertise the proposed public hearing on October 8, 2013, at 4:00 PM.

BACKGROUND:
The Board of Supervisors is the owner of a facility located at 1609 Great Falls Street, McLean, Virginia, known as the Lewinsville Facility and identified as Tax Map No. 30-3 ((1)) parcel 42. Fun & Friends Child Development Center, through different ownerships, has resided at the Lewinsville Facility since 1986. The Center has an enrollment of approximately 95 -100 children ranging from 6 weeks to 5 years of age, and serves approximately 90 families in the McLean area.

The prior lease expired on June 30, 2013. Fun & Friends Child Development Center requested to renew and extend the existing lease for 5,109 rentable square feet in the Lewinsville Facility. Therefore, subject to the County's completion of lease negotiations with Fun & Friends Child Development Center, it is proposed that the County enter into an Extension of Lease Agreement that will permit Fun & Friends Child Development Center to continue leasing space at the Lewinsville Facility from July 1, 2013 through October 31, 2015.

In accordance with Board Policy and Section 15.2-1800 of the Code of Virginia, a public hearing is required prior to the disposition of Board-owned property.

FISCAL IMPACT:
Tenant shall pay to the Board annual rent for the leased space in the amount of $8,520.85 per month; $ 102,250.20 per annum, effective as of the commencement date

of the Extension of Lease Agreement, July 1, 2013. The annual rent shall be recorded as revenue and will be adjusted by two percent (2%) annually, each July 1st, through October 31, 2015.

ENCLOSED DOCUMENTS:
Attachment 1- Location Map 30-3

STAFF:
David J. Molchany, Deputy County Executive
Jose A. Comayagua, Jr., Director, Facilities Management Department
Marguerite Guarino, Assistant Director, Facilities Management Department

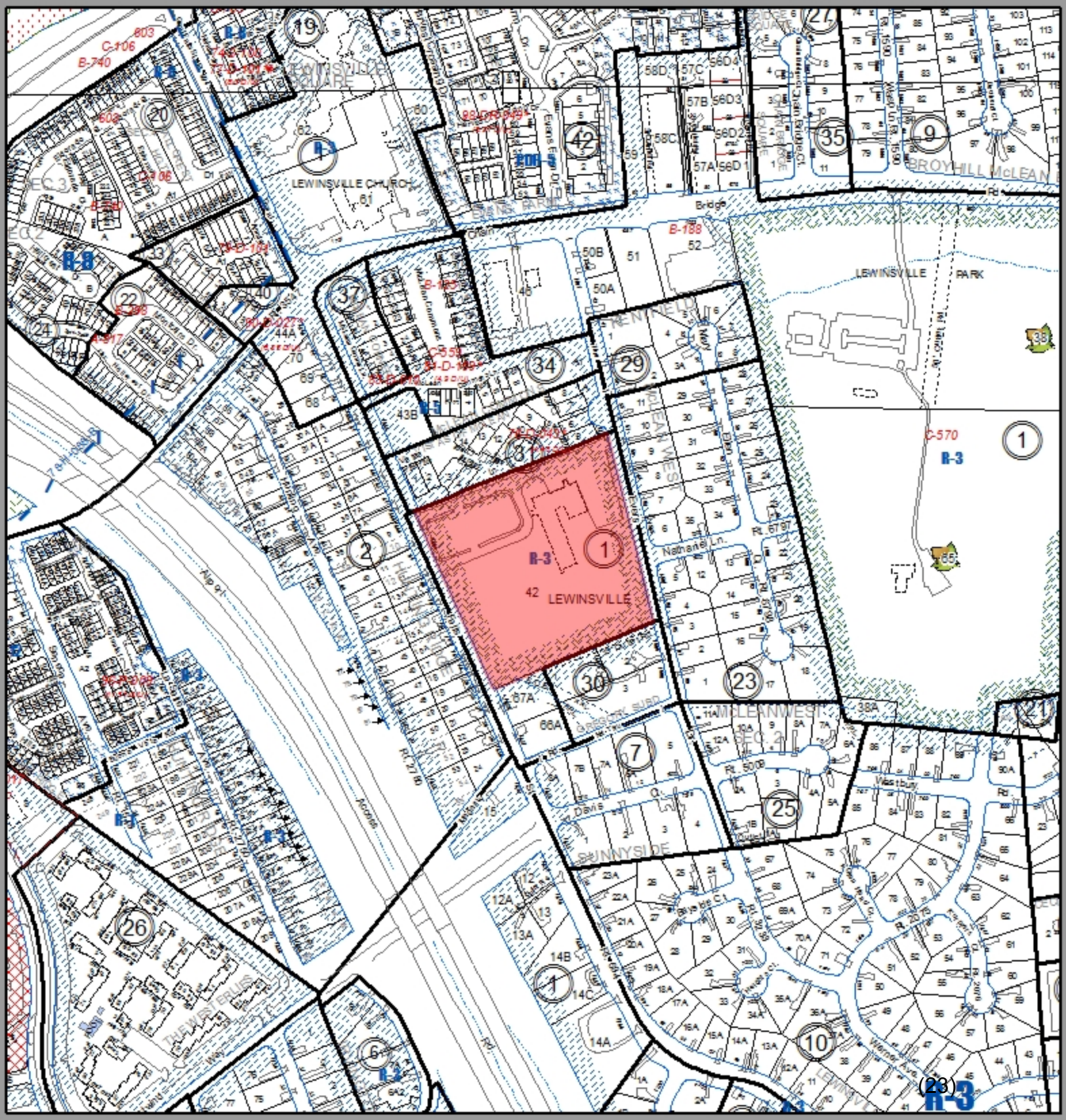
Subject Property:

ATTACHMENT 1

Tax Map No. 30-3 ((1)) 42
Dranesville District

0 125 250 500 Feet

N



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Board Agenda Item
September 10, 2013

ADMINISTRATIVE - 4

Authorization to Advertise Adoption of Chapter 124 (Stormwater Management Ordinance), Repeal of Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage), and Proposed Amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance), 118 (Chesapeake Bay Preservation Ordinance), and Appendix Q (Land Development Services Fees) of The Code of the County of Fairfax, Virginia Re: Implementation of the Virginia Stormwater Management Act and Virginia Stormwater Management Program (VSMP) Permit Regulations

ISSUE:
Board of Supervisors' authorization to advertise public hearings on adoption of Chapter 124 (Stormwater Management Ordinance), repeal of Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage), and proposed amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance), 118 (Chesapeake Bay Preservation Ordinance), and Appendix Q (Land Development Services Fees) of *The Code of the County of Fairfax, Virginia*. The new ordinance and proposed amendments implement the Virginia Stormwater Management Act (Va. Code Ann. § 62.1-44.15:24, et seq.) and Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.).

RECOMMENDATION:
The County Executive recommends that the Board authorize the advertisement of the new ordinance and proposed amendments to *The Code of the County of Fairfax, Virginia* as set forth in the Staff Report dated September 10, 2013, by adopting the resolution.

TIMING:
Board action is requested on September 10, 2013, to provide sufficient time to advertise public hearings on October 9, 2013, before the Planning Commission and on December 3, 2013, before the Board.

BACKGROUND:
The Virginia Soil and Water Conservation Board (SWCB) adopted final amendments to the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.) on May 24, 2011, with an effective date of September 13, 2011. An earlier version of the amended regulations was adopted in 2010 but suspended by the SWCB prior to becoming effective because of issues raised by localities and the public. During the 2012 and 2013 legislative sessions, the General Assembly adopted amendments to

the Code of Virginia (Chapters 785 & 819 of the 2012 Acts of Assembly and Chapter 756 of the 2013 Acts of Assembly) transferring regulatory and enforcement authority for the Erosion and Sediment Control Act, the Stormwater Management Act, and the Chesapeake Bay Preservation Act to the State Water Control Board and Virginia Department of Environmental Quality (DEQ). During the 2013 legislative session, the General Assembly also adopted a separate amendment to the Stormwater Management Act (Va. Code Ann. § 62.1-44.15:33 (2013)) that constrains localities' ability to adopt more stringent requirements than the minimum requirements of the regulations. As a result of the amendment passed during the 2013 legislative session, the County will need to justify any more stringent requirements unless the requirements were in effect prior to January 1, 2013. Additional amendments to the VSMP Permit Regulations, the Virginia Erosion and Sediment Control Regulations (4 VAC 50-30 et seq.) and the Chesapeake Bay Preservation Area Designation and Management Regulations (4 VAC 50-90 et seq.) were adopted by the VSWCB on September 28, 2012, with an effective date of November 21, 2012. Staff anticipates that the regulations will need to be republished in 2013 because of the transfer of program oversight to the State Water Control Board and DEQ.

The adoption of a local stormwater management ordinance by Fairfax County is mandatory under the Virginia Stormwater Management Act (Act). The Act gives localities until June 13, 2013, to adopt local ordinances to comply with the regulations. However, pursuant to the Act, the SWCB granted the County an extension to June 13, 2014. Adoption of a Stormwater Management Ordinance and amendments to the Subdivision Ordinance, Erosion and Sedimentation Control Ordinance, Zoning Ordinance, and Chesapeake Bay Preservation Ordinance are necessary at this time to implement revisions to state laws and regulations. In addition, current Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage) are proposed to be repealed because they are being incorporated, with minor revisions, into the new Stormwater Management Ordinance. In a separate action the Board is being asked to adopt related amendments to the Public Facilities Manual (PFM). After the County has amended its ordinances and the PFM, the State Water Control Board and DEQ will review the ordinances and PFM for consistency with state law and regulations. The County is required to submit the new and revised ordinances, revised PFM, a funding and staffing plan, and associated policies and procedures for administering the stormwater management program to DEQ by December 15, 2013. The final adopted ordinances must be submitted to DEQ by April 1, 2014.

The regulations delegate responsibility to localities for plan reviews and inspections related to the General VSMP Permit for Discharges from Construction Activities, and the state retains responsibility for issuance of coverage under the general permit to operators (land disturbers). This delegation will be effective July 1, 2014, which coincides with the effective date of the new general permit. Currently, DEQ performs all functions related to the general permit. The County's current responsibility related to the general permit is to inform DEQ when we have issued permits for land disturbing activity. Under the new regulations, localities may collect fees for plan review,

inspection, and administrative functions related to the general permit. The regulations include a fee schedule for VSMP permits which is split between DEQ (28% of the total fee for initial coverage) and localities. Localities may increase or decrease the total fee provided that DEQ receives the amount listed as the state's share in the regulations. The new Stormwater Management Ordinance provides for DEQ's share of the fees to be paid directly to DEQ at the time permit coverage is requested. The County's share of the fees has been incorporated into the review and inspection fees for stormwater management facilities in the Land Development Services Fees in Appendix Q.

The Final Regulation Agency Background Document (June 10, 2011) prepared by DCR describes the issues associated with the regulatory action as follows:

> *The primary advantage of this regulatory action is enhanced water quality and management of stormwater runoff in the Commonwealth. Citizens often complain about flooding caused by increased amounts of stormwater runoff and the runoff is also a contributor to excessive nutrient enrichment and sedimentation in numerous rivers, lakes, and ponds throughout the state, as well as a continued threat to estuarine waters and the Chesapeake Bay. The water quality and quantity criteria established by this regulatory action will improve upon today's stormwater management program and assist the Commonwealth in reducing nutrient and sediment pollution statewide and meeting Chesapeake Bay restoration goals. The regulations will have numerous benefits including reductions in flood risk, avoidance of infrastructure costs through the use of LID practices, improved aquatic life, and enhancement of recreational and commercial fisheries.*
>
> *The implementation of local stormwater management programs will also have benefits for the regulated community. Today, construction activity operators must go to two sources in order to receive needed Erosion and Sediment Control (locality) and Stormwater (department) approvals. The development of local stormwater management programs will allow for both approvals to be received from a singular source, thus improving efficiency as well as saving time for the developer. Even in localities where the department is the stormwater program administrative authority, the program envisioned by these regulations will allow for greater customer service and oversight over today's more limited program.*
> *The primary disadvantage of this regulatory action will be increased compliance costs in some instances for construction site operators. However, the final regulations have been modified in a number of ways to significantly reduce the fiscal impacts associated with compliance with the water quality and quantity technical standards and it is believed that the final regulations represent a reasonable balance between necessary water quality and quantity improvements and potential economic concerns. It should be noted that the offsite compliance options will help moderate compliance costs. It is anticipated that before the implementation of these regulations in 2014 that*

> *nutrient trading opportunities will be greatly expanded* [The expansion of nutrient trading opportunities referenced in this 2011 document has not yet occurred; ed.].

Approximately 90 percent of the new Stormwater Management Ordinance consists of requirements from the state Stormwater Management Act and Regulations. For the remaining 10 percent of the ordinance, where the County had latitude to develop specific requirements, an extensive outreach program was implemented to gain input from stakeholders. Outreach efforts included:

- Stakeholder Meetings - Stakeholders included representatives from industry, citizens groups, design professionals, environmental groups, and other individuals interested in participating. A kickoff meeting was held on July 24, 2012; work sessions were held on September 24, 2012, October 17, 2012; and a close-out meeting was held on July 24, 2013.
- Web site (http://www.fairfaxcounty.gov/dpwes/stormwaterordinance.htm) – A website was created to keep the public updated on the ordinance adoption schedule, draft ordinances, and solicit input. Email notifications were sent to stakeholders to alert them to meetings and updates to draft ordinance postings on the website.
- Board Committee Presentations – Staff presented various options for the major policy issues at four Environmental Committee and Development Process Committee meetings between November 2012 and June 2013.
- Planning Commission Presentations – Staff presented an overview of the Stormwater Management Ordinance and the major policy issues to the Planning Commission Environmental Committee at two meetings between October 2012 and April 2013. Staff is scheduled to present an update on the ordinance to the Environmental Committee on September 19, 2013.
- Environmental Quality Advisory Council (EQAC) Presentations – Staff made presentations on the Stormwater Management Ordinance and policy issues at three EQAC meetings.
- Engineering Standards Review Committee (ESRC) – Staff worked with representatives on the ESRC from the development community, engineers, environmental groups, and citizen groups to develop the proposed amendments to the Public Facilities Manual.
- District Advisory Group Presentations – Staff presented various Stormwater Management Ordinance topics at meetings in the Mount Vernon, Braddock, and Providence Districts.

Through the overall outreach approach, the proposed Stormwater Management Ordinance represents an effort to achieve a balance between minimum state requirements, development community interests, and environmental interests.

PROPOSED AMENDMENTS:
Key elements of the County's proposed ordinance and amendments to existing ordinances are presented below.

Chapter 124 (Stormwater Management Ordinance):
The new Stormwater Management Ordinance was written to implement the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.) as required by the Virginia Stormwater Management Act (Va. Code Ann. § 62.1-44.15:24, et seq.). It contains provisions from both the law and regulations. A table relating provisions of the ordinance to provisions in the law and regulations is included as Attachment I of the Staff Report. In addition, provisions have been included in the ordinance to facilitate compliance with the County's MS4 permit and incorporate elements of repealed Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage). The ordinance includes nine articles whose key provisions are as follows:

Article 1 General Provisions:

1) Administration. The ordinance is to be administered by the Director of the Department of Public Works and Environmental Services.

2) Exemptions. Exemptions from provisions of the Virginia Stormwater Management Act are incorporated. Only the major exemptions impacting building and construction included in the ordinance are listed here.

- All land disturbing activities equal to or less than 2,500 square feet in area that are not part of a larger common plan of development are exempt.
- Single-family dwellings separately built and disturbing less than 1 acre (*The Board to select a value within an advertised range of range of 2,500 sq. ft. to 1 acre.*) and not part of a larger common plan of development or sale, including: additions to existing single-family detached dwellings; accessory structures to single-family detached dwellings; and demolitions of single-family detached dwellings or accessory structures all subject to the following (*The Board may select any or all or none of the advertised conditions below.*):

    a) Control measures are not required to address a specific WLA for a pollutant that has been established in a TMDL and assigned to stormwater discharges from construction activities within the watershed; and
    b) The proposed construction meets one of the following conditions:
        i) Total imperviousness on the lot will be less than 2,500 square feet (*The Board to select a value within the advertised range of range of 1,000 sq.*

ft. to 5,000 sq. ft. or delete this half of the condition.) or 18% of the lot area (*The Board to select a value within the advertised range of range of 10 – 50% or delete this half of the condition.*), whichever is greater; or

ii) Water quality controls meeting requirements in effect at the time were provided with the original subdivision construction and are currently in place; or

iii) The property is served by an existing regional stormwater management facility providing water quality control.

In order to demonstrate compliance with conditions (ii) or (iii) above, an applicant for a land-disturbing permit need only certify that water quality controls were included as part of the approved subdivision plans and have not been removed or that the site drains to an existing regional stormwater management facility providing water quality control.

3) Other laws and regulations. Compliance with the Stormwater Management Ordinance will meet stormwater control requirements of the Chesapeake Bay Preservation Ordinance and the adequate outfall requirements (MS-19) of the Virginia Erosion and Sediment Control Regulations.

4) Approved land-disturbing activities with VSMP permit coverage and grandfathering.

- General Permit Coverage prior to July 1, 2014. If coverage is maintained, land-disturbing activities are not subject to the new requirements for 2 permit cycles (i.e. 10 years).
- Plats and plans including zoning actions approved prior to July 1, 2012, without general permit coverage prior to July 1, 2014, are not subject to the new requirements provided construction is completed prior to July 1, 2019.
- Projects with governmental bonding or debt financing issued prior to July 1, 2012, are not subject to the new requirements.

5) Chesapeake Bay Preservation Act Land-Disturbing Activities. Land-disturbing activities equal to or less than an acre must meet the new requirements for stormwater management but are not required to obtain VSMP permit coverage unless they are part of a larger common plan of development or sale that would disturb more than one acre of land.

<u>Article 2 General Administrative Criteria for Regulated Land-Disturbing Activities</u>:

1) The County may not approve any land-disturbing activity requiring a VSMP permit unless the applicant has provided evidence of VSMP permit coverage.

2) A County stormwater permit (This is a local permit separate and distinct from the state VSMP permit.) is required for all non-exempt land-disturbing activities.

3) The County stormwater permit is to be consolidated with the erosion and sediment control permit. A consolidated permit is required by the Act.

4) A stormwater management plan addressing permanent water quality and quantity controls is required for all non-exempt land-disturbing activities.

5) A pollution prevention plan is required for all land-disturbing activities subject to VSMP permit requirements. A pollution prevention plan addresses sources of pollution from the land-disturbing activity not directly related to stormwater such as spillage from refueling stations, wash water, trash collection, etc. The pollution prevention plan is reviewed by DEQ as part of the VSMP permit application and is not reviewed by County staff as part of the land-development review process.

6) The stormwater management plan, the erosion and sediment control plan, and the pollution prevention plan are collectively known as the Stormwater Pollution Prevention Plan (SWPP). The County is responsible for enforcement of the VSMP permit and related SWPP during construction inspection.

7) Requirements for bonding, long-term maintenance, and construction record drawings (as-builts) are included. These items are already required in connection with site, subdivision, and grading plans proposing public improvements or stormwater management facilities.
Article 3 Fees: See Appendix Q Amendments.

Article 4 Technical Criteria for Regulated Land-Disturbing Activities:

1) These criteria apply to all new land-disturbing activities that are not exempt or do not have existing permit coverage or are not grandfathered.

2) Water quality design criteria are provided for both new development and redevelopment. The new requirements meet but do not exceed the state minimum criteria except in instances where application of the Water Supply Protection Overlay District phosphorus reduction requirement may be more stringent than the state requirement. Compliance with the water quality design criteria is to be determined utilizing the Virginia Runoff Reduction Method developed by the state. This methodology is different than what is currently used by the County and its use is mandated under the Regulations.

3) Water quantity control criteria are provided for both channel protection and flood protection, known collectively as adequate outfall. Separate criteria are provided for manmade conveyance systems, natural channels, and restored channels. The minimum state requirements are significantly less stringent than current County requirements except for the extent of downstream review which is more stringent than current County requirements. A slightly modified version of the current County

requirements for adequate outfall is being retained along with the County's current detention requirement and the state's extent of downstream review.

4) As required by the Regulations, the ordinance includes a number of offsite compliance options for water quality control. Nutrient credits may be purchased through a nutrient credit exchange for small projects that do not generate large amounts of nutrients or for projects that achieve 75 percent of the required nutrient reduction onsite or for projects that have exhausted possibilities for full compliance onsite.

Article 5 Technical Criteria for Regulated Land-Disturbing Activities: Grandfathered Projects and Projects Subject to Time Limits on Applicability of Approved Design Criteria:

1) Article 5 contains the water quality control and adequate outfall requirements to be used with grandfathered projects and projects with existing VSMP permits as of July 1, 2014.

2) The requirements for water quality are what is currently required under the Chesapeake Bay Preservation Ordinance and the PFM and were approved by the Chesapeake Bay Local Assistance Board (which has since been dissolved) as an acceptable alternative to the State's requirements and methodology.

3) The state requirements for adequate outfall (stream channel erosion and flooding) as applied by the current PFM are included.

4) Developers have the option of using the new technical criteria in Article 4 in lieu of the technical criteria in Article 5.

Article 6 Exceptions:

Requirements for the granting of exceptions are directly from the State regulations. These requirements apply to both new and grandfathered projects.

Article 7 Appeals:

This article provides procedures and criteria for appeals of decisions by the Director. Appeals are subject to hearings, which are to be conducted by a hearing officer(s) appointed by the Director.

Article 8 Violations and Penalties:

1) This article provides for criminal violations and civil penalties in accordance with the Stormwater Management Act.

2) The Board will be asked to approve a suggested list of civil penalty amounts for use in administering these provisions.

Article 9 Illicit Discharges to the Storm Sewer System and State Waters:

1) This article establishes prohibitions against discharging to the County storm sewer system and state waters.

2) This article replaces Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage) of the County Code which are proposed to be repealed.

3) Standards for the inspection of industrial and commercial property discharging to the County MS4 are included.

Chapter 101 (Subdivision Ordinance):

Compliance with the requirements of the Stormwater Management Ordinance has been added to the minimum requirements for new subdivisions.

Chapter 104 (Erosion and Sedimentation Control):

During the 2013 legislative session, the Erosion and Sediment Control Law was re-enacted with regulatory authority and oversight of local programs transferred from the SWCB and DCR to the State Water Control Board and DEQ. The law and associated regulations also integrate erosion and sediment control requirements with stormwater management requirements, including VSMP permitting, and Chesapeake Bay preservation area requirements. The proposed amendments update the regulatory citations, definitions, administrative requirements, and conservation standards consistent with the re-enacted law and regulations. The proposed amendments also explicitly designate the Director of DPWES as responsible for administering the ordinance, incorporate a general right of entry provision for enforcement of the ordinance separate from the existing provisions for inspection related to permits, and incorporate variance provisions.

Chapter 112 (Zoning Ordinance):

Compliance with the requirements of the Stormwater Management Ordinance has been added to the minimum requirements for site plans.

Chapter 118 (Chesapeake Bay Preservation Ordinance):

The Chesapeake Bay Preservation Ordinance implements the Chesapeake Bay Preservation Area Designation and Management Regulations (4VAC50-90 et seq.). The regulations were revised, effective November 21, 2012, to eliminate stormwater

management requirements duplicated in the Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.), and clarify that enforcement of provisions relating to requirements for erosion and sediment control be conducted under provisions of the Erosion and Sediment Control Act. The proposed amendments reflect these regulatory changes. In addition, the Chesapeake Bay Exception Review Committee is being eliminated. This committee, appointed by the Board, was charged with review and approval of exception requests requiring public hearings that were not associated with zoning cases being heard concurrently by the Board. At the time the committee was created in 2003, the number of cases to be heard by the committee was projected to be significantly larger than it has turned out to be. In fact, the committee has averaged three public hearings per year since its inception. As a result, the committee meets on an irregular schedule and there are difficulties in finding citizens willing to serve on the committee. In the opinion of staff, the workload does not justify continuation of the committee. The review and approval of these types of exception requests will be transferred to the Board of Supervisors which is already hearing exception requests associated with ongoing zoning cases.

Appendix Q

Fees for activities related to local stormwater permits and state permits are incorporated into the general fee schedule for plan review and inspection for site and subdivision plans. The proposed amendments to Appendix Q incorporate fees for: Coverage Under the General Permit for Discharges of Stormwater from Construction Activities ($308) and Permits for Chesapeake Bay Preservation Act Land-Disturbing Activities ($308); Modification or Transfer of Registration Statements for the General Permit for Discharges of Stormwater from Construction Activities ($200 - $700 depending on disturbed acreage); Annual Permit Maintenance Fees ($20 - $1,400 depending on disturbed acreage); Modifications/Waivers/Exceptions ($710); and Review and Inspection of Stormwater Management and BMP facilities ($500 - $3,200 by type of facility) with a maximum cumulative total of $7,500. Fees for state permits will be paid directly to the state.

REGULATORY IMPACT:

The proposed Stormwater Management Ordinance is being adopted as required by the Virginia Stormwater Management Act and Regulations. Requirements for water quality and quantity control, currently located in the Public Facilities Manual and Chesapeake Bay Preservation Ordinance, are being consolidated in the new ordinance. Existing prohibitions related to pollution of state waters and discharges into County storm drains in Chapters 105 and 106 of the County Code are being expanded and consolidated in the new ordinance. The new ordinance establishes more stringent requirements for water quality controls than those currently contained in the PFM and Chesapeake Bay Preservation Ordinance. These requirements meet but do not exceed the minimum requirements of the Virginia Stormwater Management Act and Regulations. The new ordinance retains existing requirements currently in the PFM, with minor modifications, for water quantity control related to stream protection and flooding. These requirements

exceed the minimum requirements of the Virginia Stormwater Management Act and Regulations. The new ordinance creates a requirement for a local stormwater permit and a consolidated stormwater and erosion and sediment control permit as required by the Virginia Stormwater Management Act and Regulations. Under the new ordinance and in accordance with the Virginia Stormwater Management Act and Regulations, the County will be responsible for plan review and inspections for the state for VSMP permits and enforcement of VSMP permit violations. Under the Virginia Stormwater Management Act and Regulations, the threshold for the requirement to obtain a state permit has been increased from 2,500 square feet to one acre making it less stringent than current requirements.

In general, the new water quality control requirements will be more difficult to achieve for all development including County projects and result in the construction of more, albeit smaller, controls distributed throughout the project site. This impact is mitigated for land disturbances on existing residential lots by the exception provisions contained in the new ordinance and the option to purchase water quality control credits through a broker system set up by the state. It is unknown at this time if sufficient credits will be available to meet future demand for credits. The regulatory impacts also are mitigated by the provisions set forth in the ordinance for land-disturbing activities that have coverage under a state VSMP permit prior to July 1, 2014, and proposed land-disturbing activities that have County approvals prior to July 1, 2012, both of which are derived directly from the Virginia Stormwater Management Regulations. Projects that have coverage under a state VSMP permit are not subject to the new technical criteria in the proposed Stormwater Management Ordinance provided that construction is completed by July 1, 2024. Grandfathered projects are not subject to the new technical criteria provided that construction is completed by July 1, 2019. The types of projects grandfathered are currently valid proffered rezonings or P district rezonings or other rezonings with a plan of development, special exceptions, special permits, variances, preliminary or final subdivision plats, subdivision construction plans, preliminary or final site plans, or grading plans. In addition, County projects for which funding was obligated prior to July 1, 2012, are grandfathered until July 1, 2019, and County projects for which governmental bonding or public debt financing was issued prior to July 1, 2012, are grandfathered indefinitely.

The proposed PFM amendments are necessary to implement the new Stormwater Management Ordinance and the VSMP Permit Regulations. Requirements for water quality and quantity control, currently located in the PFM and Chesapeake Bay Preservation Ordinance, are being consolidated in the new ordinance. The primary regulatory impact of the PFM amendments is related to the limitations on use and location of BMPs and, if approved, the maintenance of additional types of BMPs in residential areas by the County.

With respect to the limitations on use and location of BMPs, the limitations are less restrictive than current requirements but more restrictive than what is permitted under the Regulations. Currently, all BMPs must be located on outlots in new residential

subdivisions except that some types of BMPs may be located on lots in residential subdivisions creating three or fewer lots with approval by the Director and on existing residential lots and BMPs may not be located in the VDOT right-of-way. Under the proposed amendments, the limit of three lots is being increased to seven lots and some BMPs may be located in the VDOT right-of-way subject to approval by VDOT. In order for BMPs to be located in the right-of-way, an agreement between the County and VDOT, similar to the one currently in place for the Tysons Corner Urban Center, will have to be developed. Staff has begun talks with VDOT but it may take some time to negotiate an acceptable agreement(s).

FISCAL IMPACT:
There is a need for two Code Compliance Investigator positions in FY 2014. Based on the actual increase in constructed BMPs above current ordinance BMP construction levels coupled with increased enforcement efforts, additional positions may need to be requested in future budget submissions. It is also anticipated that additional positions in the County Attorney's office may be needed in the future for enforcement activities. The need for additional maintenance staff will need to be reevaluated if the Board determines that the County should take over maintenance of most new BMP facilities. With respect to plan review and inspection activities, no new staff is being requested at this time.

It is difficult to assess what fiscal impact the addition of new BMP types and changes to the BMP design standards will have on the County, developers, or property owners. The primary fiscal impact is due to the increase in the number of BMPs required to meet the new water quality control requirements in the Stormwater Management Ordinance rather than the design standards for those BMPs. The increase in the number of BMPs per project would increase both design and construction costs.

If the number of BMP types eligible for public maintenance is expanded, the annualized cost for County maintenance of new BMPs added to the inventory of County maintained facilities is estimated to be approximately $0.6 million versus approximately $0.25 million under the current system. The costs to the County would increase by this amount every year. In addition, there would be additional costs if the County instituted a conversion program for existing privately maintained residential BMPs to be brought up to acceptable condition and turned over to the County. If all of the existing privately maintained residential BMPs were turned over to the County for maintenance (this likely would take many years), there would be an additional annualized cost estimated at $3.5 million. Any staffing costs associated with the conversion program would be offset by less enforcement activity. Therefore, the fiscal impact of a change to the types of BMPs maintained by the County would be approximately $3.5 million increasing at a rate of $0.6 million per year from current Stormwater Program funding.

Board Agenda Item
September 10, 2013

ENCLOSED DOCUMENTS:
Attachment 1 - Resolution
Attachment 2 - Staff Report Dated September 10, 2013

STAFF:
Robert A. Stalzer, Deputy County Executive
James Patteson, Director, Department of Public Works and Environmental Services (DPWES)
Michelle A. Brickner, Deputy Director, DPWES
Randy Bartlett, Deputy Director, DPWES

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RESOLUTION

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held in the Board Auditorium in the Government Center Building, Fairfax, Virginia, on September 10, 2013, at which meeting a quorum was present and the following resolution was adopted:

WHEREAS, the Virginia Stormwater Management Act (§62.1-44.15:24, et seq.) [the Act] requires that Fairfax County adopt a Stormwater Management Ordinance implementing the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.); and

WHEREAS, changes to the Act, Erosion and Sediment Control Law (§62.1-44.15:51, et seq.), and Chesapeake Bay Preservation Act (§62.1-44.15:67, et seq.) in 2013 consolidated and transferred authority for administering these laws and their associated regulations from the Soil and Water Conservation Board and the Department of Conservation and Recreation to the State Water Control Board and the Department of Environmental Quality; and

WHEREAS, implementation of these laws and associated regulations necessitate adoption of Chapter 124 (Stormwater Management Ordinance), repeal of Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage), and proposed amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance), 118 (Chesapeake Bay Preservation Ordinance), and Appendix Q (Land Development Services Fees) of The Code of the County of Fairfax, Virginia;

WHEREAS, Sections 15.2-107, 15.2-2204, 15.2-2241(A)(9), 15.2-2286(A)(6), 62.1-44.15:54(J), 62.1-44.15:25 and/or 62.1-44.15:29(A)(5) of the *Code of Virginia* and Virginia Administrative Code Sections 4VAC50-60-820, 4VAC50-60-825, and/or 4VAC50-60-830, provides for the collection of fees to cover the cost of review of subdivision and site plans, issuing permits, making inspections, advertising of notices and other expenses incidental to the administration of these activities or to the filing or processing of any appeal or amendment thereto; and

WHEREAS, the Act and associated regulations delegate responsibility for plan reviews and inspections related to the general VSMP permit for discharges from construction activities to localities with the state retaining responsibility for issuance of coverage under the general permit to operators (land disturbers); and

WHEREAS, the current fees charged by Land Development Services (LDS), Department of Public Works and Environmental Services (DPWES), related to plan review, permitting, and inspections, as set forth in Appendix Q (Land Development Services Fees) of the County Code do not fully address the costs for plan review and inspections related to the general VSMP permit for discharges from construction activities; and

WHEREAS, the public necessity, convenience, general welfare, and good practice require consideration of the proposed Stormwater Management Ordinance and revisions to Chapters 101, 104, 105, 106, 112, and 118 of the County Code; and

NOW THERFORE BE IT RESOLVED, for the foregoing reasons and as further set forth in the Staff Report, the Board of Supervisors authorize the advertisement of the proposed amendments to the County Code as recommended by staff.

A Copy Teste:

_____

Catherine A. Chianese
Clerk to the Board of Supervisors

DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES

STAFF REPORT

- [√] PROPOSED COUNTY CODE AMENDMENT
- [ ] PROPOSED PFM AMENDMENT
- [ ] APPEAL OF DECISION
- [ ] WAIVER REQUEST

Proposed Chapter 124 (Stormwater Management Ordinance), Repeal of Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage), and Proposed Amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance), 118 (Chesapeake Bay Preservation Ordinance), and Appendix Q (Land Development Services Fees) of The Code of the County of Fairfax, Virginia Re: Implementation of the Virginia Stormwater Management Act (Va. Code Ann. § 62.1-44.15:24, et seq.) and Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.).

Authorization to Advertise	September 10, 2013
Planning Commission Hearing	October 9, 2013
Board of Supervisors Hearing	December 3, 2013
Prepared by:	Code Development and Compliance Division JAF (703) 324-1780 September 10, 2013

STAFF REPORT

A. Issues:

Adoption of Chapter 124 (Stormwater Management Ordinance), repeal of Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage), and proposed amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance), 118 (Chesapeake Bay Preservation Ordinance), and Appendix Q (Land Development Services Fees) of The Code of the County of Fairfax, Virginia. The new ordinance and proposed amendments implement the Virginia Stormwater Management Act (Va. Code Ann. § 62.1-44.15:24, et seq.) and Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.). The Board also will be asked to consider a schedule of civil penalties for use in enforcing the Stormwater Management Ordinance.

B. Recommended Action:

Staff recommends that the Board of Supervisors (the Board) adopt proposed Chapter 124 (Stormwater Management Ordinance), repeal Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage), and adopt the proposed amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance), 118 (Chesapeake Bay Preservation Ordinance), and Appendix Q (Land Development Services Fees) of The Code of the County of Fairfax, Virginia. The new ordinance and proposed amendments implement the Virginia Stormwater Management Act (Va. Code Ann. § 62.1-44.15:24, et seq.) and Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.). Staff further recommends that the Board authorize staff to review plans, at the request of an applicant, based on the adopted amendments in advance of the effective date. The Board also will be asked to approve a schedule of recommended civil penalties for use in enforcing the Stormwater Management Ordinance.

C. Timing:

Board of Supervisors authorization to advertise – September 10, 2013

Planning Commission Public Hearing – October 9, 2013

Board of Supervisors Public Hearing – December 3, 2013

Effective Date – July 1, 2014, at 12:01 a.m. except that amendments to Articles 6 (Exceptions), 7 (Exception Review Committee), and 8 (Appeals) of Chapter 118 (Chesapeake Bay Preservation Ordinance) Chapters shall become effective on adoption.

D. Source:

Department of Public Works and Environmental Services (DPWES)

E. Coordination:

The proposed amendments have been prepared by the Department of Public Works and Environmental Services and coordinated with the Department of Planning and Zoning and the Office of the County Attorney.

F. Background:

The Virginia Soil and Water Conservation Board (SWCB) adopted final amendments to the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.) on May 24, 2011, with an effective date of September 13, 2011. An earlier version of the amended regulations was adopted in 2010 but suspended by the SWCB prior to becoming effective because of issues raised by localities and the public. During the 2012 and 2013 legislative sessions, the General Assembly adopted amendments to the Code of Virginia (Chapters 785 & 819 of the 2012 Acts of Assembly and Chapter 756 of the 2013 Acts of Assembly) transferring regulatory and enforcement authority for the Erosion and Sediment Control Act, the Stormwater Management Act, and the Chesapeake Bay Preservation Act to the State Water Control Board and Virginia Department of Environmental Quality (DEQ). During the 2013 legislative session, the General Assembly also adopted a separate amendment to the Stormwater Management Act (Va. Code Ann. § 62.1-44.15:33 (2013)) that placed constrains localities' ability to adopt more stringent requirements than the minimum requirements of the regulations. As a result of the amendment passed during the 2013 legislative session, the County will need to justify any more stringent requirements unless the requirements were in effect prior to January 1, 2013. Additional amendments to the VSMP Permit Regulations, the Virginia Erosion and Sediment Control Regulations (4 VAC 50-30 et seq.) and the Chesapeake Bay Preservation Area Designation and Management Regulations (4 VAC 50-90 et seq.) were adopted by the VSWCB on September 28, 2012, with an effective date of November 21, 2012. Staff anticipates that the regulations will need to be republished in 2013 because of the transfer of program oversight to the State Water Control Board and DEQ.

The adoption of a local stormwater management ordinance by Fairfax County is mandatory under the Virginia Stormwater Management Act (Act). The Act gives localities until June 13, 2013, to adopt local ordinances to comply with the regulations. However, pursuant to the Act, the SWCB granted the County an extension to June 13, 2014. Adoption of a Stormwater Management Ordinance and amendments to the Subdivision Ordinance, Erosion and Sedimentation Control Ordinance, Zoning Ordinance, and Chesapeake Bay Preservation Ordinance are necessary at this time to implement revisions to state laws and regulations. In addition, current Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage) are proposed to be repealed because they are being incorporated, with minor revisions, into the new Stormwater Management Ordinance. In a separate action

the Board is being asked to adopt related amendments to the Public Facilities Manual (PFM). After the County has amended its ordinances and the PFM, the State Water Control Board and DEQ will review the ordinances and PFM for consistency with state law and regulations. The County is required to submit the new and revised ordinances, revised PFM, a funding and staffing plan, and associated policies and procedures for administering the stormwater management program to DEQ by December 15, 2013. The final adopted ordinances must be submitted to DEQ by April 1, 2014.

The regulations delegate responsibility to localities for plan reviews and inspections related to the General VSMP Permit for Discharges from Construction Activities, and the state retains responsibility for issuance of coverage under the general permit to operators (land disturbers). This delegation will be effective July 1, 2014, which coincides with the effective date of the new general permit. Currently, DEQ performs all functions related to the general permit. The County's current responsibility related to the general permit is to inform DEQ when we have issued permits for land disturbing activity. Under the new regulations, localities may collect fees for plan review, inspection, and administrative functions related to the general permit. The regulations include a fee schedule for VSMP permits which is split between DEQ (28% of the total fee for initial coverage) and localities. Localities may increase or decrease the total fee provided that DEQ receives the amount listed as the state's share in the regulations. The new Stormwater Management Ordinance provides for DEQ's share of the fees to be paid directly to DEQ at the time permit coverage is requested. The County's share of the fees has been incorporated into the review and inspection fees for stormwater management facilities in the Land Development Services Fees in Appendix Q.

The Final Regulation Agency Background Document (June 10, 2011) prepared by DCR describes the issues associated with the regulatory action as follows:

> *The primary advantage of this regulatory action is enhanced water quality and management of stormwater runoff in the Commonwealth. Citizens often complain about flooding caused by increased amounts of stormwater runoff and the runoff is also a contributor to excessive nutrient enrichment and sedimentation in numerous rivers, lakes, and ponds throughout the state, as well as a continued threat to estuarine waters and the Chesapeake Bay. The water quality and quantity criteria established by this regulatory action will improve upon today's stormwater management program and assist the Commonwealth in reducing nutrient and sediment pollution statewide and meeting Chesapeake Bay restoration goals. The regulations will have numerous benefits including reductions in flood risk, avoidance of infrastructure costs through the use of LID practices, improved aquatic life, and enhancement of recreational and commercial fisheries.*
>
> *The implementation of local stormwater management programs will also have benefits for the regulated community. Today, construction activity*

operators must go to two sources in order to receive needed Erosion and Sediment Control (locality) and Stormwater (department) approvals. The development of local stormwater management programs will allow for both approvals to be received from a singular source, thus improving efficiency as well as saving time for the developer. Even in localities where the department is the stormwater program administrative authority, the program envisioned by these regulations will allow for greater customer service and oversight over today's more limited program.

The primary disadvantage of this regulatory action will be increased compliance costs in some instances for construction site operators. However, the final regulations have been modified in a number of ways to significantly reduce the fiscal impacts associated with compliance with the water quality and quantity technical standards and it is believed that the final regulations represent a reasonable balance between necessary water quality and quantity improvements and potential economic concerns. It should be noted that the offsite compliance options will help moderate compliance costs. It is anticipated that before the implementation of these regulations in 2014 that nutrient trading opportunities will be greatly expanded [The expansion of nutrient trading opportunities referenced in this 2011 document has not yet occurred; ed.].

Approximately 90 percent of the new Stormwater Management Ordinance consists of requirements from the state Stormwater Management Act and Regulations. For the remaining 10 percent of the ordinance, where the County had latitude to develop specific requirements, an extensive outreach program was implemented to gain input from stakeholders. Outreach efforts included:

- Stakeholder Meetings - Stakeholders included representatives from industry, citizens groups, design professionals, environmental groups, and other individuals interested in participating. A kickoff meeting was held on July 24, 2012; work sessions were held on September 24, 2012, October 17, 2012; and a close-out meeting was held on July 24, 2013.
- Web site (http://www.fairfaxcounty.gov/dpwes/stormwaterordinance.htm) – A website was created to keep the public updated on the ordinance adoption schedule, draft ordinances, and solicit input. Email notifications were sent to stakeholders to alert them to meetings and updates to draft ordinance postings on the website.
- Board Committee Presentations – Staff presented various options for the major policy issues at four Environmental Committee and Development Process Committee meetings between November 2012 and June 2013.
- Planning Commission Presentations – Staff presented an overview of the Stormwater Management Ordinance and the major policy issues to the Planning Commission Environmental Committee at two meetings between October 2012 and April 2013. Staff is scheduled to present an update on the ordinance to the Environmental Committee on September 19, 2013.

- Environmental Quality Advisory Council (EQAC) Presentations – Staff made presentations on the Stormwater Management Ordinance and policy issues at three EQAC meetings.
- Engineering Standards Review Committee (ESRC) – Staff worked with representatives on the ESRC from the development community, engineers, environmental groups, and citizen groups to develop the proposed amendments to the Public Facilities Manual.
- District Advisory Group Presentations – Staff presented various Stormwater Management Ordinance topics at meetings in the Mount Vernon, Braddock, and Providence Districts.

Through the overall outreach approach, the proposed Stormwater Management Ordinance represents an effort to achieve a balance between minimum state requirements, development community interests, and environmental interests.

G. Proposed Amendments

Key elements of the County's proposed ordinance and amendments to existing ordinances are presented below.

Chapter 124 (Stormwater Management Ordinance):
The new Stormwater Management Ordinance was written to implement the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.) as required by the Virginia Stormwater Management Act (Va. Code. Ann. § 62.1-44.15:24, et seq.). It contains provisions from both the law and regulations. A table relating provisions of the ordinance to provisions in the law and regulations is included as Attachment I of the Staff Report. In addition, provisions have been included in the ordinance to facilitate compliance with the County's MS4 permit and incorporate elements of repealed Chapters 105 (Pollution of State Waters) and 106

(Storm Drainage). The ordinance includes nine articles whose key provisions are as follows:

Article 1 General Provisions:

1) Administration. The ordinance is to be administered by the Director of the Department of Public Works and Environmental Services.

2) Exemptions. Exemptions from provisions of the Virginia Stormwater Management Act are incorporated. Only the major exemptions impacting building and construction included in the ordinance are listed here.

- All land disturbing activities equal to or less than 2,500 square feet in area that are not part of a larger common plan of development are exempt.
- Single-family dwellings separately built and disturbing less than 1 acre (*The Board to select a value within an advertised range of range of 2,500 sq. ft. to 1 acre.*) and not part of a larger common plan of development or sale, including: additions to existing single-family detached dwellings; accessory structures to single-family detached dwellings; and demolitions of single-family detached dwellings or accessory structures all subject to the following (*The Board may select any or all or none of the advertised conditions below.*):

a) Control measures are not required to address a specific WLA for a pollutant that has been established in a TMDL and assigned to stormwater discharges from construction activities within the watershed; and
b) The proposed construction meets one of the following conditions:

i) Total imperviousness on the lot will be less than 2,500 square feet (*The Board to select a value within the advertised range of range of 1,000 sq. ft. to 5,000 sq. ft. or delete this half of the condition.*) or 18% of the lot area (*The Board to select a value within the advertised range of range of 10 – 50% or delete this half of the condition.*), whichever is greater; or
ii) Water quality controls meeting requirements in effect at the time were provided with the original subdivision construction and are currently in place; or
iii) The property is served by an existing regional stormwater management facility providing water quality control.

In order to demonstrate compliance with conditions (ii) or (iii) above, an applicant for a land-disturbing permit need only certify that water quality controls were included as part of the approved subdivision plans and have not been removed or that the site drains to an existing regional stormwater management facility providing water quality control.

3) Other laws and regulations. Compliance with the Stormwater Management Ordinance will meet stormwater control requirements of the Chesapeake Bay Preservation Ordinance and the adequate outfall requirements (MS-19) of the Virginia Erosion and Sediment Control Regulations.

4) Approved land-disturbing activities with VSMP permit coverage and grandfathering.

- General Permit Coverage prior to July 1, 2014. If coverage is maintained, land-disturbing activities are not subject to the new requirements for 2 permit cycles (i.e. 10 years).
- Plats and plans including zoning actions approved prior to July 1, 2012, without general permit coverage prior to July 1, 2014, are not subject to the new requirements provided construction is completed prior to July 1, 2019.
- Projects with governmental bonding or debt financing issued prior to July 1, 2012, are not subject to the new requirements.

5) Chesapeake Bay Preservation Act Land-Disturbing Activities. Land-disturbing activities equal to or less than an acre must meet the new requirements for stormwater management but are not required to obtain VSMP permit coverage unless they are part of a larger common plan of development or sale that would disturb more than one acre of land.

<u>Article 2 General Administrative Criteria for Regulated Land-Disturbing Activities</u>:

1) The County may not approve any land-disturbing activity requiring a VSMP permit unless the applicant has provided evidence of VSMP permit coverage.

2) A County stormwater permit (This is a local permit separate and distinct from the state VSMP permit.) is required for all non-exempt land-disturbing activities.

3) The County stormwater permit is to be consolidated with the erosion and sediment control permit. A consolidated permit is required by the Act.

4) A stormwater management plan addressing permanent water quality and quantity controls is required for all non-exempt land-disturbing activities.

5) A pollution prevention plan is required for all land-disturbing activities subject to VSMP permit requirements. A pollution prevention plan addresses sources of pollution from the land-disturbing activity not directly related to stormwater such as spillage from refueling stations, wash water, trash collection, etc. The pollution prevention plan is reviewed by DEQ as part of the VSMP permit application and is not reviewed by County staff as part of the land-development review process.

6) The stormwater management plan, the erosion and sediment control plan, and the pollution prevention plan are collectively known as the Stormwater Pollution

Prevention Plan (SWPP). The County is responsible for enforcement of the VSMP permit and related SWPP during construction inspection.

7) Requirements for bonding, long-term maintenance, and construction record drawings (as-builts) are included. These items are already required in connection with site, subdivision, and grading plans proposing public improvements or stormwater management facilities.

Article 3 Fees: See Appendix Q Amendments.

Article 4 Technical Criteria for Regulated Land-Disturbing Activities:

1) These criteria apply to all new land-disturbing activities that are not exempt or do not have existing permit coverage or are not grandfathered.

2) Water quality design criteria are provided for both new development and redevelopment. The new requirements meet but do not exceed the state minimum criteria except in instances where application of the Water Supply Protection Overlay District phosphorus reduction requirement may be more stringent than the state requirement. Compliance with the water quality design criteria is to be determined utilizing the Virginia Runoff Reduction Method developed by the state. This methodology is different than what is currently used by the County and its use is mandated under the Regulations.

3) Water quantity control criteria are provided for both channel protection and flood protection, known collectively as adequate outfall. Separate criteria are provided for manmade conveyance systems, natural channels, and restored channels. The minimum state requirements are significantly less stringent than current County requirements except for the extent of downstream review which is more stringent than current County requirements. A slightly modified version of the current County requirements for adequate outfall is being retained along with the County's current detention requirement and the state's extent of downstream review.

4) As required by the Regulations, the ordinance includes a number of offsite compliance options for water quality control. Nutrient credits may be purchased through a nutrient credit exchange for small projects that do not generate large amounts of nutrients or for projects that achieve 75 percent of the required nutrient reduction onsite or for projects that have exhausted possibilities for full compliance onsite.

Article 5 Technical Criteria for Regulated Land-Disturbing Activities: Grandfathered Projects and Projects Subject to Time Limits on Applicability of Approved Design Criteria:

1) Article 5 contains the water quality control and adequate outfall requirements to be used with grandfathered projects and projects with existing VSMP permits as of July 1, 2014.

2) The requirements for water quality are what is currently required under the Chesapeake Bay Preservation Ordinance and the PFM and were approved by the Chesapeake Bay Local Assistance Board (which has since been dissolved) as an acceptable alternative to the State's requirements and methodology.

3) The state requirements for adequate outfall (stream channel erosion and flooding) as applied by the current PFM are included.

4) Developers have the option of using the new technical criteria in Article 4 in lieu of the technical criteria in Article 5.

Article 6 Exceptions:

Requirements for the granting of exceptions are directly from the State regulations. These requirements apply to both new and grandfathered projects.

Article 7 Appeals:

This article provides procedures and criteria for appeals of decisions by the Director. Appeals are subject to hearings, which are to be conducted by a hearing officer(s) appointed by the Director.

Article 8 Violations and Penalties:

1) This article provides for criminal violations and civil penalties in accordance with the Stormwater Management Act.

2) The Board will be asked to approve a suggested list of civil penalty amounts for use in administering these provisions.

Article 9 Illicit Discharges to the Storm Sewer System and State Waters:

1) This article establishes prohibitions against discharging to the County storm sewer system and state waters.

2) This article replaces Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage) of the County Code which are proposed to be repealed.

3) Standards for the inspection of industrial and commercial property discharging to the County MS4 are included.

Chapter 101 (Subdivision Ordinance):

Compliance with the requirements of the Stormwater Management Ordinance has been added to the minimum requirements for new subdivisions.

Chapter 104 (Erosion and Sedimentation Control):

During the 2013 legislative session, the Erosion and Sediment Control Law was re-enacted with regulatory authority and oversight of local programs transferred from the SWCB and DCR to the State Water Control Board and DEQ. The law and associated regulations also integrate erosion and sediment control requirements with stormwater management requirements, including VSMP permitting, and Chesapeake Bay preservation area requirements. The proposed amendments update the regulatory citations, definitions, administrative requirements, and conservation standards consistent with the re-enacted law and regulations. The proposed amendments also explicitly designate the Director of DPWES as responsible for administering the ordinance, incorporate a general right of entry provision for enforcement of the ordinance separate from the existing provisions for inspection related to permits, and incorporate variance provisions.

Chapter 112 (Zoning Ordinance):

Compliance with the requirements of the Stormwater Management Ordinance has been added to the minimum requirements for site plans.

Chapter 118 (Chesapeake Bay Preservation Ordinance):

The Chesapeake Bay Preservation Ordinance implements the Chesapeake Bay Preservation Area Designation and Management Regulations (4VAC50-90 et seq.). The regulations were revised, effective November 21, 2012, to eliminate stormwater management requirements duplicated in the Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.), and clarify that enforcement of provisions relating to requirements for erosion and sediment control be conducted under provisions of the Erosion and Sediment Control Act. The proposed amendments reflect these regulatory changes. In addition, the Chesapeake Bay Exception Review Committee is being eliminated. This committee, appointed by the Board, was charged with review and approval of exception requests requiring public hearings that were not associated with zoning cases being heard concurrently by the Board. At the time the committee was created in 2003, the number of cases to be heard by the committee was projected to be significantly larger than it has turned out to be. In fact, the committee has averaged three public hearings per year since its inception. As a result, the committee meets on an irregular schedule and there are difficulties in finding citizens willing to serve on the committee. In the opinion of staff, the workload does not justify continuation of the committee. The review and approval of these types of exception requests will be transferred to the Board of Superviaors which is already hearing exception requests associated with ongoing zoning cases.

Appendix Q
Fees for activities related to local stormwater permits and state permits are incorporated into the general fee schedule for plan review and inspection for site and subdivision plans. The proposed amendments to Appendix Q incorporate fees for:

Coverage Under the General Permit for Discharges of Stormwater from Construction Activities ($308) and Permits for Chesapeake Bay Preservation Act Land-Disturbing Activities ($308); Modification or Transfer of Registration Statements for the General Permit for Discharges of Stormwater from Construction Activities ($200 - $700 depending on disturbed acreage); Annual Permit Maintenance Fees ($20 - $1,400 depending on disturbed acreage); Modifications/Waivers/Exceptions ($710); and Review and Inspection of Stormwater Management and BMP facilities ($500 - $3,200 by type of facility) with a maximum cumulative total of $7,500. Fees for state permits will be paid directly to the state.

H. Regulatory Impact:

The proposed Stormwater Management Ordinance is being adopted as required by the Virginia Stormwater Management Act and Regulations. Requirements for water quality and quantity control, currently located in the Public Facilities Manual and Chesapeake Bay Preservation Ordinance, are being consolidated in the new ordinance. Existing prohibitions related to pollution of state waters and discharges into County storm drains in Chapters 105 and 106 of the County Code are being expanded and consolidated in the new ordinance. The new ordinance establishes more stringent requirements for water quality controls than those currently contained in the PFM and Chesapeake Bay Preservation Ordinance. These requirements meet but do not exceed the minimum requirements of the Virginia Stormwater Management Act and Regulations. The new ordinance retains existing requirements currently in the PFM, with minor modifications, for water quantity control related to stream protection and flooding. These requirements exceed the minimum requirements of the Virginia Stormwater Management Act and Regulations. The new ordinance creates a requirement for a local stormwater permit and a consolidated stormwater and erosion and sediment control permit as required by the Virginia Stormwater Management Act and Regulations. Under the new ordinance and in accordance with the Virginia Stormwater Management Act and Regulations, the County will be responsible for plan review and inspections for the state for VSMP permits and enforcement of VSMP permit violations. Under the Virginia Stormwater Management Act and Regulations, the threshold for the requirement to obtain a state permit has been increased from 2,500 square feet to one acre making it less stringent than current requirements.

In general, the new water quality control requirements will be more difficult to achieve for all development including County projects and result in the construction of more, albeit smaller, controls distributed throughout the project site. This impact is mitigated for land disturbances on existing residential lots by the exception provisions contained in the new ordinance and the option to purchase water quality control credits through a broker system set up by the state. It is unknown at this time if sufficient credits will be available to meet future demand for credits. The regulatory impacts also are mitigated by the provisions set forth in the ordinance for land-disturbing activities that have coverage under a state VSMP permit prior to July 1, 2014, and proposed land-disturbing activities that have County approvals prior to July 1, 2012, both of which are derived directly from the Virginia Stormwater

Management Regulations. Projects that have coverage under a state VSMP permit are not subject to the new technical criteria in the proposed Stormwater Management Ordinance provided that construction is completed by July 1, 2024. Grandfathered projects are not subject to the new technical criteria provided that construction is completed by July 1, 2019. The types of projects grandfathered are currently valid proffered rezonings or P district rezonings or other rezonings with a plan of development, special exceptions, special permits, variances, preliminary or final subdivision plats, subdivision construction plans, preliminary or final site plans, or grading plans. In addition, County projects for which funding was obligated prior to July 1, 2012, are grandfathered until July 1, 2019, and County projects for which governmental bonding or public debt financing was issued prior to July 1, 2012, are grandfathered indefinitely.

The proposed PFM amendments are necessary to implement the new Stormwater Management Ordinance and the VSMP Permit Regulations. Requirements for water quality and quantity control, currently located in the PFM and Chesapeake Bay Preservation Ordinance, are being consolidated in the new ordinance. The primary regulatory impact of the PFM amendments is related to the limitations on use and location of BMPs and, if approved, the maintenance of additional types of BMPs in residential areas by the County.

With respect to the limitations on use and location of BMPs, the limitations are less restrictive than current requirements but more restrictive than what is permitted under the Regulations. Currently, all BMPs must be located on outlots in new residential subdivisions except that some types of BMPs may be located on lots in residential subdivisions creating three or fewer lots with approval by the Director and on existing residential lots and BMPs may not be located in the VDOT right-of-way. Under the proposed amendments, the limit of three lots is being increased to seven lots and some BMPs may be located in the VDOT right-of-way subject to approval by VDOT. In order for BMPs to be located in the right-of-way, an agreement between the County and VDOT, similar to the one currently in place for the Tysons Corner Urban Center, will have to be developed. Staff has begun talks with VDOT but it may take some time to negotiate an acceptable agreement(s).

H. Fiscal Impact:

There is a need for two Code Compliance Investigator positions in FY 2014. Based on the actual increase in constructed BMPs above current ordinance BMP construction levels coupled with increased enforcement efforts, additional positions may need to be requested in future budget submissions. It is also anticipated that additional positions in the County Attorney's office may be needed in the future for enforcement activities. The need for additional maintenance staff will need to be reevaluated if the Board determines that the County should take over maintenance of most new BMP facilities. With respect to plan review and inspection activities, no new staff is being requested at this time.

It is difficult to assess what fiscal impact the addition of new BMP types and changes to the BMP design standards will have on the County, developers, or property owners. The primary fiscal impact is due to the increase in the number of BMPs required to meet the new water quality control requirements in the Stormwater Management Ordinance rather than the design standards for those BMPs. The increase in the number of BMPs per project would increase both design and construction costs.

If the number of BMP types eligible for public maintenance is expanded, the annualized cost for County maintenance of new BMPs added to the inventory of County maintained facilities is estimated to be approximately $0.6 million versus approximately $0.25 million under the current system. The costs to the County would increase by this amount every year. In addition, there would be additional costs if the County instituted a conversion program for existing privately maintained residential BMPs to be brought up to acceptable condition and turned over to the County. If all of the existing privately maintained residential BMPs were turned over to the County for maintenance (this likely would take many years), there would be an additional annualized cost estimated at $3.5 million. Any staffing costs associated with the conversion program would be offset by less enforcement activity. Therefore, the fiscal impact of a change to the types of BMPs maintained by the County would be approximately $3.5 million increasing at a rate of $0.6 million per year from current Stormwater Program funding.

I. Attached Documents:

Attachment A – Chapter 124 (Stormwater Management Ordinance)
Attachment B – Amendments to Chapter 101 (Subdivision Ordinance)
Attachment C – Amendments to Chapter 104 (Erosion and Sedimentation Control)
Attachment D – Amendments to Chapter 105 (Pollution of State Waters)
Attachment E – Amendments to Chapter 106 (Storm Drainage)
Attachment F – Amendments to Chapter 112 (Zoning Ordinance)
Attachment G – Amendments to Chapter 118 (Chesapeake Bay Preservation Ordinance)
Attachment H – Amendments to Appendix Q (Land Development Services Fees)
Attachment I – Table of State Law and Virginia Administrative Code Citations for Provisions in the Stormwater Management Ordinance.
Attachment J – Schedule of Civil Penalties

PROPOSED AMENDMENT
TO
THE CODE OF THE COUNTY OF FAIRFAX VIRGINIA
ADDING
CHAPTER 124 (STORMWATER MANAGEMENT ORDINANCE)

Amend the Code of the County of Fairfax Virginia by adding new Chapter 124 (Stormwater Management Ordinance to read as follows:

CHAPTER 124.

Stormwater Management Ordinance

Article 1. General Provisions.

§ 124-1-1. Title.
§ 124-1-2. Authority.
§ 124-1-3. Enactment.
§ 124-1-4. Purpose and Administration.
§ 124-1-5. Definitions.
§ 124-1-6. Areas of Applicability.
§ 124-1-7. Exemptions.
§ 124-1-8. Right of Entry.
§ 124-1-9. Severability.
§ 124-1-10. Applicability of and Conflicts with Other Laws and Regulations.
§ 124-1-11. Time Limits on Applicability of Approved Design Criteria.
§ 124-1-12. Grandfathering.
§ 124-1-13. Chesapeake Bay Preservation Act Land-Disturbing Activity.

Article 2. General Administrative Criteria for Regulated Land-Disturbing Activities.

§ 124-2-1. Applicability
§ 124-2-2. Permit Required.
§ 124-2-3. Annual Standards and Specifications for State Agencies, Federal Entities, and Other Specified Entities.
§ 124-2-4. Security for Performance.
§ 124-2-5. Monitoring, Reports, Investigations, and Inspections.
§ 124-2-6. Stormwater Pollution Prevention Plan Requirements.
§ 124-2-7. Stormwater Management Plans.
§ 124-2-8. Pollution Prevention Plans.
§ 124-2-9. Stormwater Management Plan Review.
§ 124-2-10. Long-term Maintenance of Permanent Stormwater Management Facilities.
§ 124-2-11. Construction Record Drawings.

Article 3. Fees.

§ 124-3-1. General.
§ 124-3-2. Exemptions.
§ 124-3-3. Fees for Coverage Under the General Permit for Discharges of Stormwater from Construction Activities and Permits for Chesapeake Bay Preservation Act Land-Disturbing Activities.
§ 124-3-4. Fees for the Modification or Transfer of Registration Statements for the

General Permit for Discharges of Stormwater from Construction Activities.
§ 124-3-5. Permit Maintenance Fees.

Article 4. Technical Criteria for Regulated Land-Disturbing Activities.

§ 124-4-1. Applicability.
§ 124-4-2. Water Quality Design Criteria Requirements.
§ 124-4-3. Water Quality Compliance.
§ 124-4-4. Water Quantity.
§ 124-4-5. Offsite Compliance Options.
§ 124-4-6. Design Storms and Hydrologic Methods.
§ 124-4-7. Stormwater Harvesting.
§ 124-4-8. Linear Development Projects.
§ 124-4-9. Comprehensive Stormwater Management Plans.

Article 5. Technical Criteria for Regulated Land-Disturbing Activities: Grandfathered Projects and Projects Subject to Time Limits on Applicability of Approved Design Criteria.

§ 124-5-1. Definitions.
§ 124-5-2. Applicability.
§ 124-5-3. General.
§ 124-5-4. Water Quality.
§ 124-5-5. Stream Channel Erosion.
§ 124-5-6. Flooding.
§ 124-5-7. Regional (watershed-wide) Stormwater Management Plans.

Article 6. Exceptions.

§ 124-6-1. Exceptions.

Article 7. Appeals.

§ 124-7-1. Right to Administrative Review.
§ 124-7-2. Hearings.
§ 124-7-3. Appeals of Final Orders.

Article 8. Violations and Penalties.

§ 124-8-1. General Provisions.
§ 124-8-2. Criminal Violations and Penalties.
§ 124-8-3. Civil Penalties.

Article 9. Illicit Discharges to the Storm Sewer System and State Waters

§ 124-9-1. Purpose.
§ 124-9-2. Responsibilities of the Director.
§ 124-9-3. Illicit Discharges to the Storm Sewer System and State Waters.
§ 124-9-4. Standards for Inspection of Industrial and Commercial Property Discharging to the County's Storm Sewer System.

ARTICLE 1.

General Provisions

Section 124-1-1. Title.

This Chapter shall hereafter be known, cited, and referred to as the "Stormwater Management Ordinance" of Fairfax County.

Section 124-1-2. Authority.

This ordinance is enacted pursuant to the authority and mandates of the Virginia Stormwater Management Act, Article 2.3 (§ 62.1-44.15:24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia, the Virginia Stormwater Management Program (VSMP) Permit Regulations (4VAC50-60 et seq.), and §§ 15.2-1200, 15.2-2109, and 15.2-2122 of Chapter 21 of Title 15.2 of the Code of Virginia.

Section 124-1-3. Enactment.

This Chapter shall be effective at 12:01 A.M. on July 1, 2014.

Section 124-1-4. Purpose and Administration.

The purpose and intent of this Chapter is to ensure the general health, safety, and welfare of the citizens of Fairfax County and to protect property, state waters, stream channels, and other natural resources from the potential harm of illicit discharges of pollutants and unmanaged stormwater by establishing requirements for managing stormwater and procedures whereby those requirements shall be administered and enforced. The Director shall be responsible for the administration of this Chapter. This Chapter establishes a local stormwater management program that shall be administered in conjunction with the County's MS4 program and erosion and sediment control program.

Section 124-1-5. Definitions.

The following words and terms used in this Chapter have the following meanings unless the context clearly indicates otherwise.

"Act" means the Virginia Stormwater Management Act, Article 2.3 (§ 62.1-44.15:24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

"Applicant" means any person submitting an application for a permit or requesting issuance of a permit under this Chapter.

"Best management practice" or "BMP" means schedules of activities, prohibitions of practices, including both structural and nonstructural practices, 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.

"Board" means the Fairfax County Board of Supervisors.

"Channel" means a natural or manmade waterway.

"Chesapeake Bay Preservation Act land-disturbing activity" means a land-disturbing activity including clearing, grading, or excavation that results in a land disturbance equal to or greater than 2,500 square feet and less than one acre.

"Code" or "the Code" means the Code of the County of Fairfax, Virginia.

"Common plan of development or sale" means a contiguous area where separate and distinct construction activities may be taking place at different times on different schedules.

"Comprehensive stormwater management plan" means a plan, which may be integrated with other land use plans or regulations, that specifies how the water quality components, quantity components, or both of stormwater are to be managed on the basis of an entire watershed or a portion thereof. The plan may also provide for the remediation of erosion, flooding, and water quality and quantity problems caused by prior development.

"Control measure" means any BMP, stormwater facility, or other method used to minimize the discharge of pollutants to state waters.

"Clean Water Act" or "CWA" means the federal Clean Water Act (33 USC § 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.

"Department" means the Department of Public Works and Environmental Services.

"Department of Conservation and Recreation" or "DCR" means the Virginia Department of Conservation and Recreation.

"Department of Environmental Quality" or "DEQ" means the Virginia Department of Environmental Quality.

"Development" means land disturbance and the resulting landform associated with the construction of residential, commercial, industrial, institutional, recreation, transportation, or utility facilities or structures or the clearing of land for nonagricultural or nonsilvicultural purposes.

"Director" means the Director of the Department of Public Works and Environmental Services or his designee.

"Flood fringe" means the portion of the floodplain outside the floodway that is usually covered with water from the 100-year flood or storm event. This includes, but is not limited to, the flood or floodway fringe designated by the Federal Emergency Management Agency.

"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, thereby causing or threatening damage.

"Floodplain" means the area adjacent to a channel, river, stream, or other water body that is susceptible to being inundated by water normally associated with the 100-year flood or storm event. This includes, but is not limited to any floodplain designated by the Federal Emergency Management Agency or meets the definition of floodplain in Chapter 112 (Zoning Ordinance) of the Code.

"Flood-prone area" means the component of a natural or restored stormwater conveyance system that is outside the main channel. Flood-prone areas may include, but are not limited to, the floodplain, the floodway, the flood fringe, wetlands, riparian buffers or other areas adjacent to the main channel.

"Floodway" means the channel of a river or other watercourse and the adjacent land areas, usually associated with flowing water, that must be reserved in order to discharge the 100-year flood or storm event without cumulatively increasing the water surface elevation more than one foot . This includes, but is not limited to, any floodway designated by the Federal Emergency Management Agency.

"General permit" means the state permit titled General Permit for Discharges from Construction Activities found in Part XIV of the Regulations (4 VAC 50-60-1100 et seq.) authorizing a category of discharges under the CWA and the Act within a geographical area of the Commonwealth of Virginia.

"Hydrologic Unit Code" or "HUC" means a watershed unit established in the most recent version of Virginia's 6th Order National Watershed Boundary Dataset.

"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to a VPDES or state permit (other than the state permit for discharges from the municipal separate storm sewer), discharges resulting from fire-fighting activities, and discharges identified by and in compliance with 4VAC50-60-1220.C.2.

"Impervious cover" means a surface composed of material that significantly impedes or prevents natural infiltration of water into soil.

"Inspection" means an on-site review of the project's compliance with the permit or the state permit, the Fairfax County stormwater management program, and any applicable design criteria; or an on-site review to obtain information or conduct surveys or investigations necessary in the implementation or enforcement of the Act, the Regulations, and this Chapter.

"Land disturbance" or "land-disturbing activity" means a man-made change to the land surface that potentially changes its runoff characteristics including clearing, grading, or

excavation, except that the term shall not include those exemptions specified in § 124-1-7 of this Chapter.

"Layout" means a conceptual drawing sufficient to provide for the specified stormwater management facilities required at the time of approval.

"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; (iii) highway construction projects; (iv) construction of stormwater channels and stream restoration activities; and (v) water and sewer lines. Private subdivision roads or streets shall not be considered linear development projects.

"Localized flooding" refers to smaller scale flooding that may occur outside of a stormwater conveyance system. This may include high water, ponding or standing water from stormwater runoff, which is likely to cause property damage or unsafe conditions.

"Main channel" means the portion of the stormwater conveyance system that contains the base flow and small frequent storm events.

"Minor modification" means, for the purposes of this Chapter, minor modification or amendment of an existing state permit before its expiration for the reasons listed at 40 CFR 122.63 and as specified in 4VAC50-60-640. Minor modification for the purposes of this Chapter also means other modifications and amendments not requiring extensive review and evaluation including, but not limited to, changes in EPA promulgated test protocols, increasing monitoring frequency requirements, changes in sampling locations, and changes to compliance dates within the overall compliance schedules. A minor state permit modification or amendment does not substantially alter state permit conditions, substantially increase or decrease the amount of surface water impacts, increase the size of the operation, or reduce the capacity of the facility to protect human health or the environment.

"Municipal separate storm sewer system" or “MS4” means a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains:

1. Owned or operated by a federal, state, city, town, county, district, association, or other public body, created by or pursuant to state law, having jurisdiction or delegated authority for erosion and sediment control and stormwater management, or a designated and approved management agency under § 208 of the CWA that discharges to surface waters;
2. Designed or used for collecting or conveying stormwater;
3. That is not a combined sewer; and
4. That is not part of a publicly owned treatment works.

"Municipal Separate Storm Sewer System Management Program" or "MS4 Program" means a management program covering the duration of a state permit for a municipal separate storm

sewer system that includes a comprehensive planning process that involves public participation and intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the CWA and regulations and the Act and attendant regulations, using management practices, control techniques, and system, design and engineering methods, and such other provisions that are appropriate.

"Natural channel design concepts" means the utilization of engineering analysis based on fluvial geomorphic processes to create, rehabilitate, restore, or stabilize an open conveyance system for the purpose of creating or recreating a stream that conveys its bankfull storm event within its banks and allows larger flows to access its floodplain.

"Natural stream" means a tidal or nontidal watercourse that is part of the natural topography. It usually maintains a continuous or seasonal flow during the year and is characterized as being irregular in cross-section with a meandering course. Natural streams may include sections of braided channels or wetlands as determined by the Director. Constructed channels such as drainage ditches or swales shall not be considered natural streams; however, channels designed utilizing natural channel design concepts may be considered natural streams.

"Operator" means the owner or operator of any facility or activity subject to the Act, the Regulations, and this Chapter.

"Peak flow rate" means the maximum instantaneous flow from a prescribed design storm at a particular location.

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

"Permit" or "VSMP authority permit" means an approval to conduct a land-disturbing activity issued by the Director for the initiation of a land-disturbing activity, in accordance with this Chapter, and which may only be issued after evidence of general permit coverage has been provided, where applicable.

"Permittee" means the person to whom the state or County permit is issued, including any owner or operator whose construction site is covered under a state construction general permit.

"Person" means any individual, corporation, partnership, association, state, municipality, commission, or political subdivision of a state, governmental body, including a federal, state, or local entity as applicable, any interstate body or any other legal entity.

"Point of discharge" means a location at which concentrated stormwater runoff is released.

"Pollutant" means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 USC § 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and

agricultural waste discharged into water. It does not mean:

1. Sewage from vessels; or
2. Water, gas, or other material that is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well if the well is used either to facilitate production or for disposal purposes is approved by the State Water Control Board and if the State Water Control Board determines that the injection or disposal will not result in the degradation of ground or surface water resources.

"Pollution" means such alteration of the physical, chemical or biological properties of any state waters as will or is likely to create a nuisance or render such waters (a) harmful or detrimental or injurious to the public health, safety or welfare, or to the health of animals, fish or aquatic life; (b) unsuitable with reasonable treatment for use as present or possible future sources of public water supply; or (c) unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses, provided that (i) an alteration of the physical, chemical, or biological property of state waters, or a discharge or deposit of sewage, industrial wastes or other wastes to state waters by any owner which by itself is not sufficient to cause pollution, but which, in combination with such alteration of or discharge or deposit to state waters by other owners, is sufficient to cause pollution; (ii) the discharge of untreated sewage by any owner into state waters; and (iii) contributing to the contravention of standards of water quality duly established by the State Water Control Board, are "pollution" for the terms and purposes of this Chapter.

"Postdevelopment" refers to conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site.

"Predevelopment" refers to the conditions that exist at the time that plans for the land development of a tract of land are submitted to Fairfax County. Where phased development or plan approval occurs (preliminary grading, demolition of existing structures, roads and utilities, etc.), the existing conditions at the time prior to the first item being submitted shall establish predevelopment conditions.

"Prior developed lands" means land that has been previously utilized for residential, commercial, industrial, institutional, recreation, transportation or utility facilities or structures, and that will have the impervious areas associated with those uses altered during a land-disturbing activity.

“Public Facilities Manual” or “PFM” means the Fairfax County Public Facilities Manual which contains design and construction standards adopted by the Board.

“Regulations” means the Virginia Stormwater Management Program (VSMP) Permit Regulations (4VAC50-60-10 *et seq*, as amended).

"Runoff coefficient" means the fraction of total rainfall that will appear at a conveyance as runoff.

"Runoff" or "stormwater runoff" means that portion of precipitation that is discharged across

the land surface or through conveyances to one or more waterways.

"Runoff characteristics" include maximum velocity, peak flow rate, volume, and flow duration.

"Runoff volume" means the volume of water that runs off the site from a prescribed design storm.

"Site" means the land or water area where any facility or land-disturbing activity is physically located or conducted, a parcel of land being developed, or a designated area of a parcel of land being developed, including adjacent land used or preserved in connection with the facility or land-disturbing activity. Areas channelward of mean low water in tidal Virginia shall not be considered part of a site.

"Site hydrology" means the movement of water on, across, through and off the site as determined by parameters including, but not limited to, soil types, soil permeability, vegetative cover, seasonal water tables, slopes, land cover, and impervious cover.

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

"State" means the Commonwealth of Virginia.

“State Permit” means an approval to conduct a land-disturbing activity issued by the SWCB in the form of a state stormwater individual permit or coverage issued under a state general permit or an approval issued by the SWCB for stormwater discharges from an MS4. Under these state permits, the Commonwealth imposes and enforces requirements pursuant to the federal Clean Water Act and regulations, the Act, and the Regulations.

“State Water Control Board” or “SWCB” means the Virginia State Water Control Board.

"State Water Control Law" means Chapter 3.1 (§ 62.1-44.2 et seq.) of Title 62.1 of the Code of Virginia.

"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.

"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 conveyance system" means a combination of drainage components that are used to convey stormwater discharge, either within or downstream of the land-disturbing activity. This includes:

(i) "Manmade stormwater conveyance system" means a pipe, ditch, vegetated swale, or

other stormwater conveyance system constructed by man except for restored stormwater conveyance systems;

(ii) "Natural stormwater conveyance system" means the main channel of a natural stream and the flood-prone area adjacent to the main channel. Natural stormwater conveyance systems may include sections of braided channels or wetlands as determined by the Director; or

(iii) "Restored stormwater conveyance system" means a stormwater conveyance system that has been designed and constructed using natural channel design concepts. Restored stormwater conveyance systems include the main channel and the flood-prone area adjacent to the main channel.

"Stormwater management facility" means a control measure 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(s) containing material for describing methods for complying with the requirements of this Chapter.

"Stormwater Pollution Prevention Plan" or "SWPPP" means a document, prepared in accordance with good engineering practices, that identifies potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site and meets the requirements of the Chapter.

"Subdivision" means the same as defined in Chapter 101 (Subdivision) of the Code.

"Total maximum daily load" or "TMDL" means the sum of the individual wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources, natural background loading and a margin of safety. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. The TMDL process provides for point versus nonpoint source trade-offs.

"Virginia Stormwater Management Act" means Article 2.3 (§ 62.1-44.15:24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

"Virginia Stormwater BMP Clearinghouse website" means a state sponsored website that contains detailed design standards and specifications for control measures that may be used in Virginia to comply with the requirements of the Virginia Stormwater Management Act and associated regulations.

"Virginia Stormwater Management Handbook" means a collection of pertinent information that provides general guidance for compliance with the Act and associated regulations developed by the Department of Environmental Quality.

"Virginia Stormwater Management Program " or "VSMP" means a program approved by the VSWCB after September 13, 2011, that has been established by a locality to manage the quality and quantity of runoff resulting from land-disturbing activities and shall include such items as local ordinances, rules, permit requirements, annual standards and specifications, policies and

guidelines, technical materials, and requirements for plan review, inspection, enforcement, where authorized in the Act and associated regulations, and evaluation consistent with the requirements of the Act and associated regulations.

"Wasteload allocation" or "wasteload" or "WLA" means the portion of a receiving surface water's loading or assimilative capacity allocated to one of its existing or future point sources of pollution. WLAs are a type of water quality-based effluent limitation.

"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 124-1-6. Areas of Applicability.

This Chapter and all regulations adopted hereunder shall apply to all land located within the unincorporated areas of Fairfax County.

Section 124-1-7. Exemptions.

Notwithstanding any other provisions of this Chapter, the following activities are exempt, unless otherwise required by federal law:

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;

2. Clearing of lands specifically for agricultural purposes and the management, tilling, planting or harvesting of agricultural, horticultural, or forest crops; livestock feedlot operations, or as additionally set forth by the State Water Control Board in regulations, including engineering operations as follows: construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds, ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage, and land irrigation; however, this exception shall not apply to harvesting of forest crops unless the area on which harvesting occurs is reforested artificially or naturally in accordance with the provisions of Chapter 11 of the Code of Virginia (§ 10.1-1100 et seq.) or is converted to bona fide agricultural or improved pasture use as described in subsection B of § 10.1-1163, Code of Virginia;

3. Single-family dwellings separately built and disturbing less than 1 acre (*The Board to select a value within an advertised range of range of 2,500 sq. ft. to 1 acre.*) and not part of a larger common plan of development or sale, including: additions to existing single-family detached dwellings; accessory structures to single-family detached dwellings; and demolitions of single-family detached dwellings or accessory structures all subject to the following (*The Board may select any or all or none of the advertised conditions below.*):

a) Control measures are not required to address a specific WLA for a pollutant that has been established in a TMDL and assigned to stormwater discharges from construction activities within the watershed; and

b) The proposed construction meets one of the following conditions:

i) Total imperviousness on the lot will be less than 2,500 square feet (*The Board to select a value within the advertised range of range of 1,000 sq. ft. to 5,000 sq. ft. or delete this*

half of the condition.) or 18% of the lot area (*The Board to select a value within the advertised range of range of 10 – 50% or delete this half of the condition.*), whichever is greater; or

ii) Water quality controls meeting requirements in effect at the time were provided with the original subdivision construction and are currently in place; or

iii) The property is served by an existing regional stormwater management facility providing water quality control.

In order to demonstrate compliance with conditions (ii) or (iii) above, an applicant for a land-disturbing permit need only certify that water quality controls were included as part of the approved subdivision plans and have not been removed or that the site drains to an existing regional stormwater management facility providing water quality control.

4. Land-disturbing activities that disturb less than or equal to 2,500 square feet except for land-disturbing activities that are part of a larger common plan of development or sale;

5. Discharges to a sanitary sewer or a combined sewer system;

6. Activities under a State or federal reclamation program to return an abandoned property to an agricultural or open land use;

7. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original construction of the project. The paving of an existing road with a compacted or impervious surface and reestablishment of existing associated ditches and shoulders shall be deemed routine maintenance if performed in accordance with this subsection; and

8. Conducting land-disturbing activities in response to a public emergency where the related work requires immediate authorization to avoid imminent endangerment to human health or the environment. In such situations, the County shall be advised of the disturbance within seven days of commencing the land-disturbing activity and compliance with the administrative requirements of this Chapter is required within 30 days of commencing the land-disturbing activity.

Section 124-1-8. Right of Entry.

A. The Director, or any duly authorized agent of the Director, may, at reasonable times and under reasonable circumstances, enter any establishment or upon any property, public or private, for the purpose of obtaining information or conducting surveys or investigations necessary in the enforcement of the provisions of the Act and this Chapter.

B. In accordance with a performance bond with surety, cash escrow, letter of credit, any combination thereof, or such other legal arrangement, the Director, or any duly authorized agent of the Director also may enter any establishment or upon any property, public or private, for the purpose of initiating or maintaining appropriate actions that are required by the permit conditions associated with a land-disturbing activity when a permittee, after proper notice, has failed to take acceptable action within the time specified.

C. If the Director, or any duly authorized agent of the Director, has been refused access to a property for the purpose of conducting an investigation under this Article, he may obtain a search warrant upon demonstrating, to the satisfaction of any judge or magistrate or other person having the authority to issue warrants, that probable cause exists to support issuance of a search or administrative warrant to conduct an inspection or investigation necessary to carry out the provisions of this Chapter.

Section 124-1-9. Severability.

If any of the articles, sections, paragraphs, sentences, clauses, or phrases of this Chapter shall be declared unconstitutional or invalid by a valid judgment or decree of a court of competent jurisdiction, such unconstitutionality or invalidity shall not affect the validity of the Chapter in its entirety or any of the remaining articles, sections, paragraphs, sentences, clauses, and phrases.

Section 124-1-10. Applicability of and Conflicts with Other Laws and Regulations.

A. Nothing in this Chapter shall be construed as limiting the applicability of other laws and regulations, including, but not limited to, the CWA, the Virginia Stormwater Management Act, the Virginia Erosion and Sediment Control Law, and the Chesapeake Bay Preservation Act and all applicable regulations adopted in accordance with those laws with the following exceptions: compliance with the requirements of this Chapter shall be considered to meet the stormwater management requirements under the Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.) and attendant regulations and Chapter 118 of the Code; and compliance with the minimum standards set out in **§**124-4-4 shall be deemed to satisfy the requirements of 4VAC50-30-40.19 (Minimum Standard 19 of the Virginia Erosion and Sediment Control Regulations) and Chapter 104 of the Code.

B. Nothing in the Regulations shall be construed as limiting the rights of other federal agencies, state agencies, or the County to impose more stringent technical criteria or other requirements as allowed by law.

C. The Department of Environmental Quality shall consider any requirements imposed by this Chapter that are more stringent than those imposed by the Regulations and any requirements of a comprehensive stormwater management plan in its review of state agency projects.

D. Nothing in this Chapter shall be construed as authorizing the County to regulate, or to require prior approval by the County for, a state or federal project, unless authorized by separate statute.

E. Whenever any provision of this Chapter imposes a greater requirement or a higher standard than is required in any State or Federal statute or other County ordinance or regulation, the provision of this Chapter shall govern. Whenever any provision of any State or Federal statute or other County ordinance or regulation imposes a greater requirement or a higher standard than is required by this Chapter, the provision of such State or Federal statute or other County ordinance or regulation shall govern.

Section 124-1-11. Time Limits on Applicability of Approved Design Criteria.

Beginning with the General Permit for Discharges of Stormwater from Construction Activities issued July 1, 2009, all land-disturbing activities that receive general permit coverage shall be conducted in accordance with Article 4 or Article 5 technical criteria in place at the time of initial state permit coverage and shall remain subject to those criteria for an additional two state permit cycles, except as provided for in subsection D of § 124-1-12. After the two additional state permit cycles have passed, or should permit coverage not be maintained, portions of the project not under construction shall be subject to technical criteria adopted after the

original state permit coverage was issued. For land-disturbing projects issued coverage under the July 1, 2009, permit and for which coverage was maintained, such projects shall remain subject to the technical criteria of Article 5 for an additional two state permits.

Section 124-1-12. Grandfathering.

A. Until June 30, 2019, any land-disturbing activity for which a currently valid proffered rezoning or P district rezoning or other rezoning with a plan of development, special exception, special permit, variance, preliminary or final subdivision plat, subdivision construction plan, preliminary or final site plan, or grading plan, was approved by the County prior to July 1, 2012, and for which no coverage under the VSMP General Permit for Discharges of Stormwater from Construction Activities has been issued prior to July 1, 2014, shall be considered grandfathered and shall not be subject to the technical criteria of Article 4, but shall be subject to the technical criteria of Article 5 for those areas that were included in the approval, provided that the Director finds that such proffered rezoning or P district rezoning or other rezoning with a plan of development, special exception, special permit, variance, preliminary or final subdivision plat, subdivision construction plan, preliminary or final site plan, or grading plan provides sufficient information to demonstrate that the resulting land-disturbing activity will be compliant with the requirements of Article 5 and include, as a minimum, the following: (i) a conceptual drawing that identifies the location of the proposed stormwater facilities; (ii) pre- and post-development calculations that detail the required pollutant reduction necessary to comply with the water quality design criteria; and (iii) calculations necessary to determine compliance with the water quantity design criteria. In the event that the County-approved document is subsequently modified or amended in a manner such that there is no increase over the previously approved plat or plan in the amount of phosphorus leaving each point of discharge of the land-disturbing activity through stormwater runoff, and such that there is no increase over the previously approved plat or plan in the volume or rate of runoff, the grandfathering shall continue as before.

B. Until June 30, 2019, for locality, state, and federal projects for which there has been an obligation of locality, state, or federal funding, in whole or in part, prior to July 1, 2012, or for which the Department of Conservation and Recreation has approved a stormwater management plan prior to July 1, 2012, such projects shall be considered grandfathered and shall not be subject to the technical criteria of Article 4, but shall be subject to the technical criteria of Article 5 for those areas that were included in the approval.

C. For land-disturbing activities grandfathered under subsections A and B above, construction must be completed by June 30, 2019 or portions of the project not under construction shall become subject to the technical criteria of Article 4. For the purpose of administering the grandfathering requirements only, construction is considered complete when requirements for termination of state permit coverage have been met.

D. In cases where governmental bonding or public debt financing has been issued for a project prior to July 1, 2012, such project shall be subject to the technical criteria of Article 5.

E. Nothing in this section shall preclude an operator from constructing to a more stringent standard at their discretion.

Section 124-1-13. Chesapeake Bay Preservation Act Land-Disturbing Activity.

In order to protect the quality of state waters and to control the discharge of stormwater pollutants from land-disturbing activities, runoff associated with Chesapeake Bay Preservation Act land-disturbing activities shall be controlled unless otherwise exempt under § 124-1-7. Such land-disturbing activities shall not require completion of a registration statement or require coverage under the General Permit for Discharges of Stormwater from Construction Activities unless they are part of a larger common plan of development or sale that ultimately will disturb equal to or greater than one acre of land but shall be subject to the following technical criteria and program and administrative requirements:

A. An erosion and sediment control plan consistent with the requirements of Chapter 104 (Erosion and Sedimentation Control) of the Code and the Virginia Erosion and Sediment Control Law and regulations must be designed and implemented during land disturbing activities. Prior to land disturbance, this plan must be approved by the Director in accordance with Chapter 104 and the Virginia Erosion and Sediment Control Law and attendant regulations.

B. A stormwater management plan consistent with the requirements of this Chapter and the Virginia Stormwater Management Act and regulations must be designed and implemented during the land disturbing activity. The stormwater management plan shall be developed and submitted in accordance with § 124-2-7. Prior to land disturbance, this plan must be approved by the Director.

C. Exceptions may be requested in accordance with Article 6.

D. Long-term maintenance of stormwater management facilities shall be provided for and conducted in accordance with § 124-2-10.

E. Water quality design criteria in § 124-4-2 shall be applied to the site.

F. Water quality compliance shall be achieved in accordance with § 124-4-3.

G. Channel protection and flood protection shall be achieved in accordance with § 124-4-4.

H. Offsite compliance options in accordance with § 124-4-5 shall be available to Chesapeake Bay Preservation Act land-disturbing activities.

I. Such land-disturbing activities shall be subject to the design storm and hydrologic methods set out in § 124-4-6, linear development controls in § 124-4-8, and criteria associated with stormwater impoundment structures or facilities in the PFM.

ARTICLE 2.

General Administrative Criteria for Regulated Land-Disturbing Activities.

Section 124-2-1. Applicability.

This Part applies to all regulated land-disturbing activities unless exempt under § 124-1-7.

Section 124-2-2. Permit Required.

A. A person shall not conduct any land-disturbing activity without a stormwater permit. Permits will not be issued until the following items have been submitted to the County and approved by the Director as prescribed herein:

1. A permit application that includes a state VSMP permit registration statement except for Chesapeake Bay Preservation Act land-disturbing activities;
2. Evidence of VSMP permit coverage except for Chesapeake Bay Preservation Act land-disturbing activities;
3. An erosion and sediment control plan in accordance with Chapter 104 of the Code; and
4. A stormwater management plan meeting the requirements of § 124-2-7.

B. No permit shall be issued until the fees required to be paid pursuant to Article 3 of this Chapter are received, and the Applicant has provided surety for performance as required pursuant to § 124-2-4.

C. Permit applications shall be acted on within 60 days after it has been determined by the Director to be a complete application. The Director may either issue the permit or deny the permit and shall provide written rationale for the denial. Any permit application that has been previously disapproved shall be acted on within 45 days after the application has been revised, resubmitted for approval, and deemed complete.

Section 124-2-3. Annual Standards and Specifications for State Agencies, Federal Entities, and Other Specified Entities.

A. State entities, including the Department of Transportation, and for linear projects set out in subsection B, electric, natural gas, and telephone utility companies, interstate and intrastate natural gas pipeline companies shall, and federal entities and authorities created pursuant to § 15.2-5102 of the Code of Virginia may, annually submit a single set of standards and specifications for Department of Environmental Quality approval that describes how land-disturbing activities shall be conducted. Such standards and specifications shall be consistent with the requirements of the Act and associated regulations, including regulations governing the General Virginia Stormwater Management Program (VSMP) Permit for Discharges of Stormwater from Construction Activities (4 VAC 50-60-1100 et seq.), and the Erosion and Sediment Control Law (§ 62.1-44.15.51 et seq.)) and associated regulations. Each project constructed in accordance with the requirements of the Act, its attendant regulations, and where required standards and specifications shall obtain coverage issued under the state general permit prior to land disturbance.

B. Linear projects subject to annual standards and specifications include:

1. Construction, installation, or maintenance of electric transmission, natural gas, and telephone utility lines and pipelines, and water and sewer lines; and
2. Construction of the tracks, rights-of-way, bridges, communication facilities, and other related structures and facilities of a railroad company.

Linear projects not included in subdivisions 1 and 2 shall comply with the requirements of this

Chapter.

Section 124-2-4. Security for Performance.

Prior to approval to begin land-disturbing activity, the applicant shall submit a performance bond with surety, cash escrow, letter of credit, any combination thereof, or such other legal arrangement acceptable to the County, to ensure that measures could be taken by the County at the applicant's expense should the applicant fail, after proper notice, within the time specified to take or complete all appropriate actions which may be required of him by the permit conditions as a result of the applicant's land-disturbing activity. If the County takes such action upon such failure by the applicant, the County may collect from the applicant for the difference should the amount of the reasonable cost of such action exceed the amount of the security held. Within 60 days of the completion of the requirements of the permit conditions, such bond, cash escrow, letter of credit or other legal arrangement, or the unexpended or unobligated portion thereof, shall be refunded to the applicant or terminated. These requirements are in addition to all other provisions of law relating to the issuance of permits and are not intended to otherwise affect the requirements for such permits including performance guarantees for items unrelated to the stormwater permit.

Section 124-2-5. Monitoring, Reports, Investigations, and Inspections.

A. The Director (i) shall provide for periodic inspections of the installation of stormwater management measures, (ii) may require monitoring and reports from the person responsible for meeting the permit conditions to ensure compliance with the permit and to determine whether the measures required in the permit provide effective stormwater management, and (iii) conduct such investigations and perform such other actions as are necessary to carry out the provisions of this Chapter.

B. Land-disturbing activity shall be inspected during construction for:

1. Compliance with the approved erosion and sediment control plan;
2. Compliance with the approved stormwater management plan;
3. Development, updating, and implementation of a pollution prevention plan; and
4. Development and implementation of any additional control measures necessary to address a TMDL.

C. Every permit applicant, permittee, or any person subject to state permit requirements under this Chapter shall furnish, when requested by the County, such application materials, plans, specifications, and other pertinent information as may be necessary to determine the effect of his discharge on the quality of state waters, or such other information as may be necessary to accomplish the purposes of this Chapter.

Section 124-2-6. Stormwater Pollution Prevention Plan Requirements.

A. A stormwater pollution prevention plan shall include, but not be limited to, an approved erosion and sediment control plan, an approved stormwater management plan, a pollution

prevention plan for regulated land-disturbing activities, and a description of any additional control measures necessary to address a TMDL pursuant to subsection E.

B. An erosion and sediment control plan consistent with the requirements of the Virginia Erosion and Sediment Control Law and regulations, Chapter 104, and the PFM must be designed and implemented during construction activities. Prior to land disturbance, this plan must be approved by the Director in accordance with the Virginia Erosion and Sediment Control Law and attendant regulations, Chapter 104, and the PFM.

C. A stormwater management plan consistent with the requirements of § 124-2-7 must be designed and implemented during construction activities. Prior to land disturbance, this plan must be approved by the Director.

D. A pollution prevention plan consistent with the requirements § 124-2-8 must be developed before land disturbance commences.

E. In addition to the above requirements, if a specific WLA for a pollutant has been established in a TMDL and is assigned to stormwater discharges from a construction activity, additional control measures must be identified and implemented by the operator so that discharges are consistent with the assumptions and requirements of the WLA in a State Water Control Board approved TMDL.

F. The stormwater pollution prevention plan must address the following requirements, to the extent otherwise required by state law or regulations and any applicable requirements of a state permit in 4 VAC 50-60-1170:

1. Control stormwater volume and velocity within the site to minimize soil erosion;
2. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;
3. Minimize the amount of soil exposed during construction activity;
4. Minimize the disturbance of steep slopes;
5. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
6. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible;
7. Minimize soil compaction and, unless infeasible, preserve topsoil;
8. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed within a period of time determined by the County. In drought stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be

employed as specified by the County; and

9. Utilize outlet structures that withdraw water from the surface, unless infeasible, when discharging from basins and impoundments.

G. The SWPPP shall be amended whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to state waters and that has not been previously addressed in the SWPPP. The SWPPP must be maintained at a central location onsite. If an onsite location is unavailable, notice of the SWPPP's location must be posted near the main entrance at the construction site.

Section 124-2-7. Stormwater Management Plans.

A. A stormwater management plan shall be developed and submitted to the County. The stormwater management plan shall be implemented as approved or modified by the Director and shall be developed in accordance with the following:

1. A stormwater management plan for a land-disturbing activity shall apply the stormwater management technical criteria set forth in Article 4 or Article 5 as applicable to the entire land disturbing activity.

2. A stormwater management plan shall consider all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff.

3. Stormwater management plans shall meet all requirements of the PFM.

B. A complete stormwater management plan shall include the following elements:

1. Information on the type of and location of stormwater discharges, information on the features to which stormwater is being discharged including surface waters, and predevelopment and postdevelopment drainage areas;

2. Contact information including the name, address, and telephone number of the owner and the tax reference number and parcel number of the property or properties affected;

3. A narrative that includes a description of current site conditions and final site conditions and any proffers or conditions relating to stormwater management;

4. A general description of the proposed stormwater management facilities and the mechanism through which the facilities will be operated and maintained after construction is complete;

5. Information on the proposed stormwater management facilities, including the type of facilities, location, including geographic coordinates, acres treated, and the surface waters into which the facility will discharge;

6. Hydrologic and hydraulic computations, including runoff characteristics;

7. Documentation and calculations verifying compliance with the water quality and quantity requirements of this Chapter;

8. A map or maps of the site that depicts the topography of the site and includes:

a. All contributing drainage areas;

b. Existing streams, ponds, culverts, ditches, wetlands, other water bodies, and floodplains;

c. Soil types, forest cover, and other vegetative areas;

d. Current land use including existing structures, roads, and locations of known utilities and easements;

e. Sufficient information on adjoining parcels to assess the impacts of stormwater from the site on these parcels;

f. The limits of clearing and grading, and the proposed drainage patterns on the site;

g. Proposed buildings, roads, parking areas, utilities, and stormwater management facilities; and

h. Proposed land use with tabulation of the percentage of surface area to be adapted to various uses, including but not limited to planned locations of utilities, roads, and easements.

9. If an operator intends to meet the requirements established in § 124-4-2 or § 124-4-4 through the use of off-site compliance options, where applicable, then a letter of availability from the off-site provider must be included.

10. Any other information deemed necessary by the Director to evaluate potential impacts of the proposed land-disturbing activity.

C. Stormwater management plans shall be appropriately sealed and signed by a professional registered in the Commonwealth of Virginia pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1.

Section 124-2-8. Pollution Prevention Plans.

A. A plan for implementing pollution prevention measures during construction activities shall be developed, implemented and updated as necessary. The pollution prevention plan shall detail the design, installation, implementation and maintenance of effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:

1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

2. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and

3. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

B. The pollution prevention plan shall include effective best management practices to prohibit the following discharges:

1. Wastewater from washout of concrete, unless managed by an appropriate control;

2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and

4. Soaps or solvents used in vehicle and equipment washing

C. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.

Section 124-2-9. Stormwater Management Plan Review.

A. A stormwater management plan shall be approved or disapproved by the Director in accordance with the following:

1. The completeness of a plan shall be determined in accordance with § 124-2-7.B. The applicant shall be notified of any determination within 15 calendar days of receipt of the plan. Where available to the applicant, electronic communication may be considered communication in writing.

a. If within those 15 calendar days the plan is deemed to be incomplete, the applicant shall be notified in writing of the reasons the plan is deemed incomplete.

b. If a determination of completeness is made and communicated to the applicant within the 15 calendar days, an additional 60 calendar days from the date of the communication will be allowed for the review of the plan.

c. If a determination of completeness is not made and communicated to the applicant within the 15 calendar days, the plan shall be deemed complete as of the date of submission and a total of 60 calendar days from the date of submission will be allowed for the review of the plan.

d. Any plan that has been previously disapproved shall be reviewed within 45 calendar days of the date of resubmission.

2. During the review period, the plan shall be approved or disapproved and the decision communicated in writing to the person responsible for the land-disturbing activity or his designated agent. If the plan is not approved, the reasons for not approving the plan shall be provided in writing. Approval or denial shall be based on the plan's compliance with the requirements of this Chapter and all applicable codes, regulations, and policies, as determined by the Director. Where available to the applicant, electronic communication may be considered communication in writing.

3. If a plan meeting all requirements of this Chapter and all applicable codes, regulations, and policies, as determined by the Director, is submitted and no action is taken within the time specified above, the plan shall be deemed approved.

B. Each approved plan may be modified as follows:

1. Modifications to an approved stormwater management plan shall be allowed only after review and written approval by the Director. Requests for modifications containing all required information shall be approved or disapproved in writing within 60 calendar days of receipt of such requests.

2. Based on an inspection, the Director may require amendments to the approved

stormwater management plan to address any deficiencies within a time frame set by the Director.

C. The Director will not provide authorization to begin land disturbance until provided evidence of state permit coverage, where it is required, in accordance with § 124-2-2.

Section 124-2-10. Long-term Maintenance of Permanent Stormwater Management Facilities.

A. Provisions for long-term responsibility for and maintenance of stormwater management facilities and other techniques specified to manage the quality and quantity of runoff are required. For all facilities and techniques intended to be privately maintained, such requirements shall be set forth in a Private Maintenance Agreement recorded in the Fairfax County land records prior to approval to begin land-disturbing activity. Private Maintenance Agreements shall, at a minimum:

1. Be submitted in a form acceptable to the Director for review and approval and executed prior to the approval of the stormwater management plan;
2. Be stated to run with the land;
3. Provide for all necessary access to the property for purposes of maintenance and regulatory inspections;
4. Provide for inspections and maintenance and the submission of inspection and maintenance reports to the County on an annual basis;
5. Be enforceable by all appropriate governmental parties;
6. Ensure that measures could be taken by the County to maintain the stormwater management facilities or perform inspections at the owner's expense should the owner fail to maintain the stormwater management facilities in good working order in accordance with the maintenance specifications in the agreement or perform the periodic inspections required by the agreement;
7. Provide that in the event the County, pursuant to the agreement, performs work of any nature or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the owner will reimburse the County for all costs incurred by the County; and
8. Provide for liens to be placed on the property should the owner fail to reimburse the County for costs incurred by the County.

B. The Director may utilize the inspection reports of the owner of a stormwater management facility as part of an inspection program established in subsection C of this section if the inspection is conducted by a person who is licensed as a professional engineer, architect, landscape architect, or land surveyor pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1; a person who works under the direction and oversight of the licensed professional engineer, architect, landscape architect, or land surveyor; or a person who holds an appropriate certificate of competence from the SWCB.

C. The Director shall establish an inspection program that ensures that stormwater management facilities are being adequately maintained as designed after completion of land-disturbing activities. The inspection programs shall:

1. Be approved by the SWCB;

2. Ensure that each stormwater management facility is inspected by the Director, or his designee, not to include the owner, except as provided in subsections B and E of this section, at least once every five years; and

3. Be documented by records.

Section 124-2-11. Construction Record Drawings.

Upon satisfactory completion, inspection and approval of the installation of all required permanent stormwater management facilities, a construction record drawing (a.k.a. as-built) for permanent stormwater management facilities shall be submitted to the Director for review and approval for conformance with the approved stormwater management plan. Construction record drawings shall be prepared in accordance with the provisions set forth in the Public Facilities Manual. The construction record drawing shall be appropriately sealed and signed by a professional registered in the Commonwealth of Virginia, pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia, certifying that the stormwater management facilities have been constructed in accordance with the approved plan. The Director may elect not to require construction record drawings for stormwater management facilities for which maintenance agreements are not required pursuant to § 124-2-10.B.

ARTICLE 3.

Fees.

Section 124-3-1 General.

This Article establishes the fees associated with coverage under the General Permit for Discharges of Stormwater from Construction Activities (permits for stormwater management for land-disturbing activities) permit maintenance, modification, and transfer, and permits for Chesapeake Bay Preservation Act land-disturbing activities.

A. The fees for general permit coverage, permit or registration statement modification, or permit transfers are considered separate actions and shall be assessed a separate fee, as applicable.

B. Persons whose coverage under the General Permit for Discharges of Stormwater from Construction Activities has been revoked shall reapply to DEQ for an Individual Permit for Discharges of Stormwater from Construction Activities.

C. Requests for a state permit, state permit modification, or general permit coverage shall not be processed until the fees required pursuant to this Article are paid.

D. General permit coverage maintenance fees shall be paid annually to the County by the anniversary date of general permit coverage. No state permit will be reissued or automatically continued without payment of the required fee. General permit coverage maintenance fees shall be applied until a Notice of Termination is effective.

E. All incomplete payments will be deemed as nonpayments. The Department of Environmental Quality or the County, as applicable, shall provide notification to the applicant of any incomplete payments. Interest may be charged for late payments at the underpayment rate set forth in § 58.1-15 of the Code of Virginia and is calculated on a monthly basis at the applicable periodic rate. A 10% late payment fee shall be charged to any delinquent (over 90 days past due) account. The Department of Environmental Quality and the County are entitled to all remedies available under the Code of Virginia in collecting any past due amount.

Section 124-3-2 Exemptions.

A. No state permit application fees will be assessed to:

1. State permittees who request minor modifications to permits as defined in § 124-1-5 or other minor amendments at the discretion of the County.

2. State permittees whose permits are modified or amended at the request of the County or DEQ by the State Water Control Board. This does not include errors in the registration statement identified by the County, DEQ, or State Water Control Board or errors related to the acreage of the site.

B. State permit modifications at the request of the state permittee resulting in changes to stormwater management plans that require additional review by the County shall not be exempt pursuant to this section and shall be subject to fees specified under §124-3-4.

Section 124-3-3 Fees for Coverage Under the General Permit for Discharges of Stormwater from Construction Activities and Permits for Chesapeake Bay Preservation Area Land-Disturbing Activities.

The state's portion of the fees for coverage under the General Permit for Discharges of Stormwater from Construction Activities shall be paid directly to the state in accordance with 4VAC50-60-700 et seq. The fee due to the state shall be the Department of Environmental Quality portion of the total fee to be paid by the applicant listed in 4VAC50-60-820. Fees for permits for Chesapeake Bay Preservation Act land-disturbing activities and the County's portion of the fees for coverage under the General Permit for Discharges of Stormwater for Construction Activities shall be paid to the County at such times and amounts as provided for in Appendix Q of the Code.

Section 124-3-4. Fees for the Modification or Transfer of Registration Statements for the General Permit for Discharges of Stormwater from Construction Activities.

Fees for the modification or transfer of registration statements for the General Permit for Discharges of Stormwater from Construction Activities shall be paid to the County at such times and amounts as provided for in Appendix Q of the Code. If the permit modifications result in changes to stormwater management plans that require additional review by the County, such reviews shall be subject to the fees set out in this section. The fee assessed shall be based on the total disturbed acreage of the site. In addition to the permit modification fee, modifications

resulting in an increase in total disturbed acreage shall pay the difference in the initial permit fee paid and the permit fee that would have applied for the total disturbed acreage in § 124-3-3

Section 124-3-5. Permit Maintenance Fees.

Annual permit maintenance fees for General Permits for Discharges of Stormwater from Construction Sites including expired permits that have been administratively continued and Chesapeake Bay Preservation Act land-disturbing activities shall be paid to the County at such times and amounts as provided for in Appendix Q of the Code. With respect to the General Permit for Discharges of Stormwater from Construction Activities, these fees shall apply until the permit coverage is terminated

ARTICLE 4.

Technical Criteria for Regulated Land-Disturbing Activities.

Section 124-4-1. Applicability.

Except as grandfathered in §124-1-12, this Article establishes the minimum technical criteria that shall be employed to protect the quality and quantity of state waters from the potential harm of unmanaged stormwater runoff resulting from land-disturbing activities.

Section 124-4-2. Water Quality Design Criteria Requirements.

A. In order to protect the quality of state waters and to control the discharge of stormwater pollutants from regulated activities, the following minimum design criteria and standards for stormwater management shall be applied to the site.

1. New development. The total phosphorus load of new development projects shall not exceed 0.41 pounds per acre per year, as calculated pursuant to §124-4-3.

2. Development on prior developed lands.

a. For land-disturbing activities disturbing greater than or equal to one (1) acre that result in no net increase in impervious cover from the predevelopment condition, the total phosphorus load shall be reduced at least 20% below the predevelopment total phosphorus load.

b. For regulated land-disturbing activities disturbing less than one (1) acre that result in no net increase in impervious cover from the predevelopment condition, the total phosphorus load shall be reduced at least 10% below the predevelopment total phosphorus load.

c. For land-disturbing activities that result in a net increase in impervious cover over the predevelopment condition, the design criteria for new development shall be applied to the increased impervious area. Depending on the area of disturbance, the criteria of subdivisions (a) or (b) above, shall be applied to the remainder of the site.

d. In lieu of subdivision (c), the total phosphorus load of a linear development project occurring on prior developed lands shall be reduced 20% below the predevelopment total phosphorus load.

e. The total phosphorus load shall not be required to be reduced to below the applicable standard for new development unless a more stringent standard has been established

by the County.

B. The Board has established a Water Supply Protection Overlay District (WSPOD) in the Occoquan Watershed to prevent water quality degradation of the Occoquan Reservoir due to pollutant loadings within the watershed. WSPOD boundaries have been established on the Official Zoning Map. Use limitations are established which require that there shall be water quality control measures designed to reduce the projected phosphorus runoff by at least one-half for any subdivision which is subject to the provisions of Chapter 101 of the Code or any use requiring the approval of a site plan in accordance with the provisions of Article 17 of Chapter 112 of the Code, unless a modification or waiver is approved by the Director. In no instance shall the requirement for water quality control measures be modified or waived except where existing site characteristics make the provision impractical or unreasonable on-site and an alternative provision is not or cannot be accommodated off-site, and where it can be established that the modification or waiver will not affect the achievement of the water quality goals for the public water supply watershed as set forth in the adopted comprehensive plan.

C. Compliance with subsections A and B above shall be determined in accordance with §124-4-3.

D. Requirements of all applicable TMDL action plans developed by the County in accordance with the County's MS4 permit shall be met.

Section 124-4-3. Water Quality Compliance.

A. Compliance with the water quality design criteria set out in subsections A and B of §124-4-2 shall be determined by utilizing the Virginia Runoff Reduction Method or another equivalent methodology that is approved by the State Water Control Board.

B. The BMPs listed in 4VAC50-60-65.B are approved for use, subject to the restrictions and conditions in the PFM, as necessary to effectively reduce the phosphorus load and runoff volume in accordance with the Virginia Runoff Reduction Method. Other approved BMPs found on the Virginia Stormwater BMP Clearinghouse Website may also be utilized, subject to review and approval by the Director. Design specifications and the pollutant removal efficiencies for all approved BMPs are found on the Virginia Stormwater BMP Clearinghouse Website. Modifications to the design specifications, to address local requirements, are included in the PFM.

C. Where a site drains to more than one HUC, the pollutant load reduction requirements shall be applied independently within each HUC unless reductions are achieved in accordance with a comprehensive watershed stormwater management plan in accordance with § 124-4-9. Pollutant load reduction requirements to meet TMDL action plans developed by the County in accordance with the County's MS4 permit shall be applied independently to the areas of the site subject to the TMDL.

D. Offsite alternatives where allowed in accordance with § 124-4-5 may be utilized to meet the design criteria of subsection A of § 124-4-2.

Section 124-4-4. Water Quantity.

A. Channel protection and flood protection shall be addressed in accordance with the minimum standards set out in this section.

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

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

a. The manmade stormwater conveyance system shall convey the postdevelopment peak flow rate from the two-year 24-hour storm event without causing erosion of the system. Detention of stormwater or downstream improvements may be incorporated into the approved land-disturbing activity to meet this criterion, at the discretion of the Director; or

b. The peak discharge requirements for concentrated stormwater flow to natural stormwater conveyance systems in criteria 3a or 3b of this subsection shall be met.

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

a. The development shall be consistent, in combination with other stormwater runoff, with the design parameters of the restored stormwater conveyance system that is functioning in accordance with the design objectives; or

b. The peak discharge requirements for concentrated stormwater flow to natural stormwater conveyance systems in criteria 3a or 3b of this subsection shall be met.

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

a. In accordance with the following methodology:

$$Q_{Developed} \leq (Q_{Forest} * RV_{Forest})/RV_{Developed}$$

Where:

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

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

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

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

b. In accordance with another methodology that is determined by the Director to

achieve equivalent results and is approved by the State Water Control Board.

c. If the maximum peak flow rate for the 2-year 24-hour storm can be conveyed within the system from the point of discharge to the limit of analysis without causing erosion, the maximum peak flow rate from the one-year 24-hour storm following the land-disturbing activity may be calculated in accordance with the following methodology:

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

Under no condition shall $Q_{Developed}$ be greater than $Q_{Pre\text{-}Developed}$

Where:
I.F. (Improvement Factor) = 0.8 for sites > 1 acre or 0.9 for sites <u>< 1 acre</u>
$Q_{Developed}$ = The allowable peak flow rate of runoff from the developed site.
$RV_{Developed}$ = The volume of runoff from the site in the developed condition.
$Q_{Pre\text{-}Developed}$ = The peak flow rate of runoff from the site in a pre-developed condition.
$RV_{Pre\text{-}Developed}$ = The volume of runoff from the site in a pre-developed condition.

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

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

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

C. Flood protection. Concentrated stormwater flow shall be released into a stormwater conveyance system and shall meet criteria 1, 2, or 3 below, where applicable, from the point of discharge to a point to the limits of analysis in subsection 5 as demonstrated by use of acceptable hydrologic and hydraulic methodologies:

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

2. Concentrated stormwater flow to stormwater conveyance systems that currently experience localized flooding during the 10-year 24-hour storm event. The point of discharge releases stormwater into a stormwater conveyance system that, following the land-disturbing activity, confines the postdevelopment peak flow rate from the 10-year 24-hour storm event within the stormwater conveyance system to avoid the localized flooding. Detention of

stormwater or downstream improvements may be incorporated into the approved land-disturbing activity to meet this criterion, at the discretion of the Director.

3. Localized flooding is defined as follows:

a. For manmade stormwater conveyance systems, localized flooding occurs when: the capacity of the channel, pipe system, or culvert is exceeded for the 10-year 24-hour storm event or the design storm, whichever is greater; or existing dwellings or buildings constructed under an approved building permit are flooded by the 100-year storm event.

b. For natural stormwater conveyance systems, localized flooding occurs when: the capacity of the channel, or a system of braided channels or wetlands as determined by the Director, is exceeded for the 2-year 24-hour storm event; or existing dwellings or buildings constructed under an approved building permit are flooded by the 100-year storm event.

c. For a restored stormwater conveyance system that has been designed using natural channel design concepts, localized flooding occurs when: the capacity of the channel and overbanks are exceeded for the stated design storm; or existing dwellings or buildings constructed under an approved building permit are flooded by the 100-year storm event.

4. As an alternative to criteria 1 or 2 above, detention of stormwater may be provided that releases the postdevelopment peak flows for the 2-year 24-hour storm event and the 10-year 24-hour storm event at rates that are determined utilizing the method in § 124-4-4.B.3a or b. If this method is used, the downstream review analysis shall be limited to providing cross-sections to show a defined channel or man-made drainage facility, and checking for flooding of existing dwellings or buildings constructed under an approved building permit from the 100-year storm event for the extent of review described in 5 below.

5. Limits of analysis. Unless § 124-4-4.C.4 is utilized to comply with the flood protection criteria, stormwater conveyance systems shall be analyzed for compliance with flood protection criteria to a point where:

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

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

c. The stormwater conveyance system enters a mapped floodplain or other flood prone area, adopted by ordinance.[1]

6. If an existing dwelling or a building constructed under an approved building permit, which is located within the extent of review described in § 124-4-4.C.5, is flooded by the 100-year storm, the peak flow of the 100-year storm at the development site shall be reduced to a level below the pre-development based on the methodology in § 124-4-4.B.3a or b.

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[1] Floodplains adopted by ordinance include any Special Flood Hazard Area depicted on the County's Flood Insurance Rate Map or any floodplain included in Appendix A of the Code.

D. Detention. Unless waived by the Director, the postdevelopment peak flow for the 2-year 24-hour storm event shall be released at a rate that is equal to or less than the predevelopment peak flow rate from the 2-year 24-hour storm event and the postdevelopment peak flow for the 10-year 24-hour storm event shall be released at a rate that is less than or equal to the predevelopment peak flow rate from the 10-year 24-hour storm event. In the Four Mile Run watershed, the postdevelopment peak flow for the 100-year storm event shall be released at a rate that is equal to or less than the predevelopment peak flow rate from the 100-year storm unless it is contraindicated by the watershed model developed for the Four Mile Run Watershed Management Program.

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

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

G. Predevelopment and postdevelopment runoff characteristics and site hydrology shall be verified by site inspections, topographic surveys, available soil mapping or studies, and calculations consistent with good engineering practices. Guidance provided in the Virginia Stormwater Management Handbook and by the Virginia Stormwater BMP Clearinghouse shall be considered appropriate practices as modified and supplemented by the Public Facilities Manual.

Section 124-4-5. Offsite Compliance Options.

A. The Director, at his discretion, may allow an operator to use the following offsite compliance options to meet required phosphorus nutrient reductions:

1. Offsite controls utilized in accordance with a comprehensive stormwater management plan adopted pursuant to § 124-4-9 for the local watershed within which a project is located;
2. A locality pollutant loading pro rata share program established pursuant to § 15.2-2243 of the Code of Virginia or similar local funding mechanism;
3. The nonpoint nutrient offset program established pursuant to § 62.1-44.15:35 of the Code of Virginia;
4. Any other offsite options approved by an applicable state agency or state board; and
5. When an operator has additional properties available within the same HUC or upstream

HUC that the land-disturbing activity directly discharges to or within the same watershed as determined by the Director, offsite stormwater management facilities on those properties may be utilized to meet the required phosphorus nutrient reductions from the land-disturbing activity.

B. Notwithstanding subsection A, and pursuant to § 62.1-44.15:35, operators shall be allowed to utilize offsite options identified in subsection A under any of the following conditions:

1. Less than five acres of land will be disturbed;

2. The postconstruction phosphorus control requirement is less than 10 pounds per year; or

3. At least 75% of the required phosphorus nutrient reductions are achieved on-site. If at least 75% of the required phosphorus nutrient reductions can not be met on-site, and the operator can demonstrate to the satisfaction of the Director that (i) alternative site designs have been considered that may accommodate on-site best management practices, (ii) on-site best management practices have been considered in alternative site designs to the maximum extent practicable, (iii) appropriate on-site best management practices will be implemented, and (iv) full compliance with postdevelopment nonpoint nutrient runoff compliance requirements cannot practicably be met on-site, then the required phosphorus nutrient reductions may be achieved, in whole or in part, through the use of off-site compliance options.

C. Notwithstanding subsections A and B, offsite options shall not be allowed:

1. Unless the selected offsite option achieves the necessary nutrient reductions prior to the commencement of the operator's land-disturbing activity. In the case of a phased project, the operator may acquire or achieve offsite nutrient reductions prior to the commencement of each phase of land-disturbing activity in an amount sufficient for each phase.

2. In contravention of local water quality-based limitations at the point of discharge that are (i) consistent with the determinations made pursuant to subsection B of § 62.1-44.19:7 of the Code of Virginia, (ii) contained in a municipal separate storm sewer system (MS4) program plan accepted by the Department of Environmental Quality, or (iii) as otherwise may be established or approved by the State Water Control Board. Such limitations include but are not limited to the phosphorous reduction requirement in the Water Supply Protection Overlay District and any applicable nutrient-based TMDL in Fairfax County.

D. In order to meet the requirements of § 124-4-4, offsite options 1 and 2 of subsection A above may be utilized.

F. In accordance with § 62.1-44.15:35F of the Code of Virginia, nutrient credits used pursuant to subsection A shall be generated in the same or adjacent eight-digit hydrologic unit code as defined by the United States Geological Survey as the permitted site except as otherwise limited in subsection C. Nutrient credits outside the same or adjacent eight-digit hydrologic unit code may only be used if it is determined by the Director that no credits are available within the same or adjacent eight-digit hydrologic unit code when the Director accepts the final site design. In such cases, and subject to other limitations imposed in this section, credits available within the same tributary may be used. In no case shall credits from another tributary be used.

Section 124-4-6. Design Storms and Hydrologic Methods.

A. Unless otherwise specified, the prescribed design storms are the one-year, two-year, and 10-year 24-hour storms using the site-specific rainfall precipitation frequency data recommended by the U.S. National Oceanic and Atmospheric Administration (NOAA) Atlas 14. Partial duration time series shall be used for the precipitation data.

B. Unless otherwise specified, all hydrologic analyses shall be based on the existing watershed characteristics and how the ultimate development condition of the subject project will be addressed.

C. The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) synthetic 24-hour rainfall distribution and models, including, but not limited to TR-55 and TR-20; hydrologic and hydraulic methods developed by the U.S. Army Corps of Engineers; or other standard hydrologic and hydraulic methods, shall be used to conduct the analyses described in this part.

D. For drainage areas of 200 acres or less, the Rational Method may be used for evaluating peak discharges.

E. For drainage areas of 200 acres or less, the Rational Method may be used for evaluating volumetric flows to stormwater conveyances.

Section 124-4-7. Stormwater Harvesting.

In accordance with § 62.1-44.15:28 of the Code of Virginia, stormwater harvesting is encouraged for the purposes of landscape irrigation systems, fire protection systems, flushing water closets and urinals, and other water handling systems to the extent such systems are consistent with federal, state, and County regulations.

Section 124-4-8. Linear Development Projects.

Linear development projects, not subject to annual standards and specifications administered and enforced by the Department of Environmental Quality, shall control postdevelopment stormwater runoff in accordance with a site-specific stormwater management plan or a comprehensive watershed stormwater management plan developed in accordance with this Chapter.

Section 124-4-9. Comprehensive Stormwater Management Plans.

The County may develop comprehensive stormwater management plans to be approved by the Department of Environmental Quality that meet the water quality objectives, quantity objectives, or both of this Chapter:

1. Such plans shall ensure that offsite reductions equal to or greater than those that would be

required on each contributing site are achieved within the same HUC or within another locally designated watershed. Pertaining to water quantity objectives, the plan may provide for implementation of a combination of channel improvement, stormwater detention, or other measures that are satisfactory to the local stormwater management program to prevent downstream erosion and flooding.

2. If the land use assumptions upon which the plan was based change or if any other amendments are deemed necessary by the local stormwater management program, such program shall provide plan amendments to the Department of Environmental Quality for review and approval.

3. During the plan's implementation, the local stormwater management program shall document nutrient reductions accredited to the BMPs specified in the plan.

4. State and federal agencies may develop comprehensive stormwater management plans, and may participate in locality-developed comprehensive stormwater management plans where practicable and permitted by the local stormwater management program.

ARTICLE 5.

Technical Criteria for Regulated Land-Disturbing Activities: Grandfathered Projects and Projects Subject to Time Limits on Applicability of Approved Design Criteria.

Section 124-5-1. Definitions.

For the purposes of Article 5 only, the following words and terms have the following meanings unless the context clearly indicates otherwise:

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

"Aquatic bench" means a 10- to 15-foot wide bench around the inside 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, assumed to be 18%.

"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 collector pipe system beneath the planting bed.

"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.

"Development" means the construction, rehabilitation, rebuilding or substantial alteration of residential, commercial, industrial, institutional, recreational, transportation, or utility uses, facilities or structures which results in a net increase in impervious area within an RPA and/or a net increase in impervious area within an RMA of greater than 20%, relative to conditions prior to development.

"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.

"Infiltration facility" means a stormwater management facility that temporarily impounds runoff and discharges it via infiltration 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 nonrainfall periods. Infiltration basin, infiltration trench, infiltration dry well, and porous pavement shall be considered infiltration facilities.

"Intensely Developed Area" or "IDA" means an area of existing development and infill sites where development is concentrated and little of the natural environment remains as of July 1, 1993 and which is so designated on the map of Chesapeake Bay Preservation Areas adopted by the Board of Supervisors pursuant to § 118-1-9. An IDA must satisfy at least one of the following conditions as of July 1, 1993: development has severely altered the natural state of the area such that it has more than fifty percent (50%) impervious surface; public sewer and water systems, or a constructed stormwater drainage system, or both, have been constructed and serve the area as of the date of adoption of this Chapter; or housing density is equal to or greater than four dwelling units per acre.

"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.

"Planning area" means a designated portion of the parcel on which the land development project 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.

"Redevelopment" means the substantial alteration, rehabilitation, or rebuilding of a property for residential, commercial, industrial, or other purposes where there is no net increase in impervious area by the proposed redevelopment within an RPA and no more than a net increase in impervious area within an RMA of 20% relative to conditions prior to redevelopment, or any construction, rehabilitation, rebuilding, or substantial alteration of residential, commercial, industrial, institutional, recreational, transportation, or utility uses, facilities or structures within an IDA.

"Resource Management Area" or "RMA" means that component of the Chesapeake Bay Preservation Area comprised of lands that, if improperly used or developed, have a potential for

causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area.

"Resource Protection Area" or "RPA" means that component of the Chesapeake Bay Preservation Area comprised of lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation of 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 from runoff entering the Bay and its tributaries, and minimize the adverse effects of human activities on state waters and aquatic resources.

"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 basin 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 baseflow, groundwater supply, or a sizeable drainage area, to maintain the desired water surface elevations to support emergent vegetation.

"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 nonrainfall periods.

"Stormwater extended detention basin" or "extended detention basin" means a stormwater management facility that temporarily impounds runoff and discharges it through a hydraulic outlet structure over a specified 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 nonrainfall 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 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.

"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 natural 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.

"Water quality volume" means the volume equal to the first 1/2 inch of runoff multiplied by the impervious surface of the land development project.

Section 124-5-2. Applicability.

This part specifies the technical criteria for regulated land-disturbing activities that are not subject to the technical criteria of Article 4 in accordance with § 124-1-12. Regulated land-disturbing activities may comply with the technical criteria of Article 4 in lieu of the technical requirements of this article in accordance with § 124-1-12 paragraph E.

Section 124-5-3. 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 that 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 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.

D. Construction of stormwater management facilities or modifications to channels shall comply with all applicable laws regulations, and ordinances. Evidence of approval of all necessary permits shall be presented.

E. Impounding structures that are not covered by the Impounding Structure Regulations (4VAC50-20) shall, at a minimum, be engineered for structural integrity during the 100-year storm event and shall comply with the requirements of § 6-1600 of the PFM.

F. Predevelopment and postdevelopment runoff rates shall be verified by calculations that are consistent with good engineering practices and the PFM.

G. Outflows from a stormwater management facility or stormwater conveyance system shall be discharged to an adequate channel.

H. 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 development project. Hydrologic parameters shall reflect the ultimate land disturbance and shall be used in all engineering calculations.

I. All stormwater management facilities shall have an inspection and maintenance plan that identifies the owner and the responsible party for carrying out the inspection and maintenance plan.

J. 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.

K. Natural channel characteristics shall be preserved to the maximum extent practicable.

L. Land-disturbing activities shall comply with Chapter 104 (Erosion and Sedimentation Control) of the County Code and the Virginia Erosion and Sediment Control Law (§ 62.1-44.15:51 et seq. of the Code of Virginia) and attendant regulations.

M. Flood control and stormwater management facilities that drain or treat water from multiple development projects or from a significant portion of a watershed may be allowed in resource protection areas defined in the Chesapeake Bay Preservation Act , provided that (i) the County has conclusively established that the location of the facility within the resource protection area is the optimum location; (ii) the size of the facility is the minimum necessary to provide necessary flood control, stormwater treatment, or both; and (iii) the facility must be consistent with a stormwater management program that has been approved by the State Water Control Board, Soil and Water Conservation Board, the Chesapeake Bay Local Assistance Board, or the Board of Conservation and Recreation.

Section 124-5-4. Water Quality.

The requirements set forth below are what is currently in the PFM and were approved by the Chesapeake Bay Local Assistance Board as an acceptable alternative to the State's

requirements and methodology.

A. For any development or redevelopment, stormwater runoff shall be controlled by the use of BMPs as follows:

1. For development, the projected total phosphorus runoff pollution load for the proposed development shall be reduced by no less than forty (40) percent compared to phosphorus loads projected for the development without BMPs. This requirement shall not apply to any development that does not require a site plan pursuant to Article 17 of the Zoning Ordinance, that does not require subdivision approval pursuant to Chapter 101 of the Fairfax County Code, and that does not result in an impervious area of 18% or greater on the lot or parcel on which the development will occur.

2. For development and redevelopment within the Water Supply Protection Overlay District, the phosphorus removal requirements for the overlay district shall apply if such requirements impose a higher standard than the requirements of this Chapter.

3. For redevelopment of any property not currently served by one or more BMPs, the total phosphorus runoff pollution load from the property shall be reduced by at least ten (10) percent from the phosphorus runoff pollution load prior to redevelopment.

4. For redevelopment of any property that is currently and adequately served by one or more BMPs, the projected phosphorus runoff pollution load after redevelopment shall not exceed the existing phosphorus runoff pollution load.

5. BMPs shall be reviewed, modified, waived and/or approved by the Director in accordance with Article 6 of the Public Facilities Manual in effect on June 30, 2014.

B. The following options shall be considered to comply with this Section:

1. Incorporation on the site of BMPs that achieve the required control as set forth in paragraphs (1) through (5) above. For the purposes of this subsection, the "site" may include multiple projects or properties that are adjacent to one another or lie within the same drainage area where a single BMP or a system of BMPs will be utilized by those projects in common to satisfy water quality protection requirements;

2. Compliance with a locally adopted regional stormwater management program, which may include a Virginia Pollution Discharge Elimination System (VPDES) permit issued by the Department of Environmental Quality or the Department of Conservation and Recreation to a local government for its municipally owned separate storm sewer system discharges, that is reviewed and found by the State Water Control Board or the Soil and Water Conservation Board to achieve water quality protection equivalent to that required by this subsection; or

3. Compliance with a site-specific VPDES permit issued by the Department of Environmental Quality, provided that the local government specifically determines that the permit requires measures that collectively achieve water quality protection equivalent to that required by this subsection.

C. Any maintenance, alteration, use or improvement to an existing structure or use that does not degrade the quality of surface water discharge, as determined by the Director, may be exempted from the requirements of subsection A.

Section 124-5-5. Stream Channel Erosion.

A. 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.

B. Land-disturbing activity shall comply with subdivision 19 of 4VAC50-30-40 of the Erosion and Sediment Control Regulations, promulgated pursuant to Article 2.4 (§ 62.1-44.15:51 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

C. Land-disturbing activity shall comply with the requirements of Chapter 6 of the Fairfax County Public Facilities Manual in effect on June 30, 2014.

D. In addition to subsections B and C of this section, the County, by local ordinance may, or the State Water Control Board by state regulation may, adopt more stringent channel analysis criteria or design standards to ensure that the natural level of channel erosion, to the maximum extent practicable, will not increase due to the land-disturbing activities. These criteria may include, but are not limited to, the following:

1. Criteria and procedures for channel analysis and classification.
2. Procedures for channel data collection.
3. Criteria and procedures for the determination of the magnitude and frequency of natural sediment transport loads.
4. Criteria for the selection of proposed natural or manmade channel linings.

Section 124-5-6. Flooding.

A. 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.

B. The 10-year postdeveloped peak rate of runoff from the development site shall not exceed the 10-year predeveloped peak rate of runoff.

C. Land-disturbing activity shall comply with the requirements of Chapter 6 of the Fairfax County Public Facilities Manual in effect on July 30, 2014.

D. Linear development projects shall not be required to control postdeveloped stormwater runoff for flooding, except in accordance with a watershed or regional stormwater management plan.

Section 124-5-7. Regional (watershed-wide) Stormwater Management Plans.

Water quality requirements and where allowed, water quantity requirements, may be achieved in accordance with §§ 124-4-5 and 124-4-9.

ARTICLE 6.

Exceptions.

Section 124-6-1. Exceptions.

A. Exceptions to the provisions of Articles 4 or 5 of this Chapter may be granted by the Director. An exception may be granted provided that:

1. The exception is the minimum necessary to afford relief;
2. Reasonable and appropriate conditions shall be imposed as necessary upon any exception granted so that the intent of the Act and this Chapter are preserved;
3. Granting the exception will not confer any special privileges that are denied in other similar circumstances; and
4. Exception requests are not based upon conditions or circumstances that are self-imposed or self-created.

B. Economic hardship alone is not sufficient reason to grant an exception from the requirements of this Chapter.

C. Under no circumstance will an exception to the requirement that the land-disturbing activity obtain required state permits be granted nor will the use of a BMP not found on the Virginia Stormwater BMP Clearinghouse Website be approved except where allowed under Article 5.

D. Exceptions to requirements for phosphorus reductions shall not be allowed unless offsite options available through § 124-4-5 have been considered and found not available.

E. In no instance shall the requirement for BMPs meeting the provisions of the Water Supply Protection Overlay District be modified or waived except where existing site characteristics make the provision impractical or unreasonable on-site and an alternative provision is not or cannot be accommodated off-site, and where it can be established that the modification or waiver will not affect the achievement of the water quality goals for the public water supply watershed as set forth in the adopted comprehensive plan.

ARTICLE 7.

Appeals.

Section 124-7-1. Right to Administrative Review.

A. The Director shall appoint a hearing officer or officers for the purpose of hearing appeals of actions or the failure to take action by the Director under this Chapter.

B. Any permit applicant, permittee, person subject to state permit requirements under this Chapter, or person subject to an enforcement action under this Chapter who is aggrieved by an

action or inaction by the Director pursuant to this Chapter without a formal hearing may demand in writing a formal hearing by the hearing officer, provided that a petition requesting a hearing is filed with the Director within 30 days after notice of the Director's action is received by the aggrieved party. As provided for in this Chapter, the Director may seek an injunction in the absence of an administrative hearing.

Section 124-7-2. Hearings

A. Any hearing for administrative review of an action or inaction by the Director held pursuant to § 124-7-1 shall be conducted by the hearing officer.

B. After a petition requesting a hearing is filed with the Director, the Director or hearing officer shall issue a notice of hearing to the aggrieved party providing the date, time, and location of the hearing, and shall include the facts and legal requirements related to the challenged action. The notice of hearing shall be issued in accordance with the notice requirements of § 124-8-1(F).

C. The County and the aggrieved party may present evidence including witnesses regarding the facts and occurrences giving rise to the action subject to review. The aggrieved party may examine any of the County's witnesses.

D. A verbatim record of the proceedings of any hearing for administrative review under this Chapter shall be made.

E. The hearing officer shall have the power to issue subpoenas and subpoenas duces tecum, and at the request of any party shall issue such subpoenas. The failure of a witness without legal excuse to appear or to testify or to produce documents shall be acted upon by the Director, whose action may include the procurement of an order of enforcement from the circuit court. Witnesses who are subpoenaed shall receive the same fees and reimbursement for mileage as in civil actions.

F. The hearing officer shall issue a final order within 30 days after the conclusion of the hearing, which shall be served upon the parties, become part of the record, and briefly state the findings, conclusions, reasons, or basis therefor upon the evidence presented by the record and relevant to the basic law under which the agency is operating and, as appropriate, an order imposing civil charges under Va. Code Ann. § 62.1-44.15:48(D)(2).

Section 124-7-3. Appeals of Final Orders.

The permit applicant, permittee, or person to whom a final order is issued by the hearing officer may seek judicial review of the final order issued by the hearing officer by appeal to the Circuit Court of Fairfax County on the record of the proceedings before the hearing officer. To commence an appeal, a party shall file a petition in the Circuit Court of Fairfax County within 30 days of the date of the final order issued by the hearing officer. Failure to do so shall constitute a waiver of the right to appeal.

ARTICLE 8.

Violations and Penalties.

Section 124-8-1. General Provisions.

A. Any person, whether owner, lessee, principal, agent, employee or otherwise, who violates any of the provisions of this Chapter, or permits any such violations, or fails to comply with any of the requirements hereof, or who fails to comply with the conditions of any permit issued in connection with the requirements of the Act or this Chapter shall be subject to the enforcement provisions of this Chapter. The County may pursue enforcement in accordance with any of the remedies provided herein.

B. Upon becoming aware of any violation of any provisions of this Chapter, the Director, or his designee, may issue a verbal warning and request to take corrective action for any such violation to the property owner or the person committing or permitting the same, and may serve a Notice of Violation on the property owner or the person committing or permitting the violation of this Chapter. The notice of violation shall (i) specify the provisions of this Chapter which have been violated, (ii) identify the remedial measures necessary to cure the violation, and (iii) provide a reasonable time in which to remedy the violations. Failure to take steps to comply with notice Notice of Violation within the time provided for therein shall constitute a separate violation of this Chapter.

C. If a permittee or a person receiving a Notice of Violation fails to comply within the time specified therein, the County may issue a Stop Work Order requiring the owner, permittee, person responsible for carrying out an approved plan, or the person conducting the land-disturbing activities without an approved plan or required permit to cease all land-disturbing activities until the violation of the permit has ceased, or an approved plan and required permits are obtained, and specified corrective measures have been completed. Such orders shall become effective upon service. Failure to comply with a Stop Work Order shall constitute a separate violation of this Chapter.

D. If the County finds that any such violation is grossly affecting or presents an imminent and substantial danger of causing harmful erosion of lands or sediment deposition in waters within the watersheds of the Commonwealth or otherwise substantially impacting water quality, it may issue, without advance notice or hearing, an Emergency Order directing such person to cease immediately all land-disturbing activities on the site and shall provide an opportunity for a hearing, after reasonable notice as to the time and place thereof, to such person, to affirm, modify, amend, or cancel such Emergency Order. If a person who has been issued such order is not complying with the terms thereof, the County may institute a proceeding in accordance with subsection H. Failure to comply with an Emergency Order shall constitute a separate violation of this Chapter.

E. It is unlawful and constitutes a separate violation of this Chapter for any person to fail to comply with any Stop Work Order or Emergency Order issued in accordance with this Article. Any person violating or failing, neglecting, or refusing to obey any rule, regulation, ordinance,

approved standard and specification, order, or any permit condition issued by the County, or any provisions of this Article may be compelled in a proceeding instituted in any appropriate court by the Director, on behalf of the Board of Supervisors, to obey same and to comply therewith by injunction, mandamus, or other appropriate remedy.

F. The service requirement under this Chapter shall be satisfied if any Notice of Violation or other order is delivered by registered or certified mail, return receipt requested or in person to the property owner or his authorized representative, the permittee, or the person committing or permitting a violation of this Chapter.

G. Any person violating or failing, neglecting, or refusing to obey any injunction, mandamus, or other remedy obtained pursuant to this section shall be subject, in the discretion of the court, to a civil penalty in accordance with the provisions of the Article.

H. The Director may apply to the Fairfax County Circuit Court for injunctive relief to enjoin a violation or a threatened violation of any provision of this Chapter without the necessity of showing that an adequate remedy at law does not exist.

Section 124-8-2. Criminal Violations and Penalties.

A. Any person who willfully or negligently violates any provision of this Chapter, excluding Article 9, any condition of a permit or state permit, or any order of a court shall be guilty of a misdemeanor punishable by confinement in jail for not more than 12 months and a fine of not less than $2,500 nor more than $32,500, either or both. Any person who knowingly violates any provision this Chapter, excluding provisions of Article 9, any condition of a permit or state permit or any order of a court issued as herein provided, or who knowingly makes any false statement in any form required to be submitted under this Chapter or knowingly renders inaccurate any monitoring device or method required to be maintained under this Chapter, shall be guilty of a felony punishable by a term of imprisonment of not less than one year nor more than three years, or in the discretion of the jury or the court trying the case without a jury, confinement in jail for not more than 12 months and a fine of not less than $5,000 nor more than $50,000 for each violation. Any defendant that is not an individual shall, upon conviction of a violation under this subsection, be sentenced to pay a fine of not less than $10,000. Each day of violation of each requirement shall constitute a separate offense.

B. Any person who knowingly violates any provision of this Chapter, excluding Article 9, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily harm, shall, upon conviction, be guilty of a felony punishable by a term of imprisonment of not less than two years nor more than 15 years and a fine of not more than $250,000, either or both. A defendant that is not an individual shall, upon conviction of a violation under this subsection, be sentenced to pay a fine not exceeding the greater of $1 million or an amount that is three times the economic benefit realized by the defendant as a result of the offense. The maximum penalty shall be doubled with respect to both fine and imprisonment for any subsequent conviction of the same person under this subsection.

Section 124-8-3. Civil Penalties.

A. Any person who violates any provision of this Chapter or standards and specifications adopted or approved thereunder, neglects or refuses to comply with any order issued hereunder by the Director or a court, shall be subject to a civil penalty not to exceed $32,500 for each violation within the discretion of the court. Each day of violation of each requirement shall constitute a separate offense.

B. Violations for which a civil penalty may be imposed under this subsection shall include but are not limited to the following:

(i) No state permit registration;
(ii) No SWPPP;
(iii) Incomplete SWPPP;
(iv) SWPPP not available for review;
(v) No approved erosion and sediment control plan;
(vi) Failure to install stormwater BMPs or erosion and sediment controls;
(vii) Stormwater BMPs or erosion and sediment controls improperly installed or maintained;
(viii) Operational deficiencies;
(ix) Failure to conduct required inspections;
(x) Incomplete, improper, or missed inspections;
(xi) Discharges not in compliance with the requirements of Section 4VAC 50-60-1170 of the general permit; and
(xii) Illicit discharges into the Storm Sewer System and State Waters, and illicit connections to the County MS4 under Article 9 of this Chapter.

C. The Director may issue a summons for collection of the civil penalty and the action may be prosecuted in the appropriate circuit court. Any civil penalties assessed by a court as a result of a summons issued by Fairfax County shall be paid into the treasury of Fairfax County, except where the violator is Fairfax County, or its agent. Such civil penalties paid into the treasury of Fairfax County are to be used for the purpose of minimizing, preventing, managing, or mitigating pollution of the waters of the locality and abating environmental pollution therein in such manner as the court may, by order, direct.

D. With the consent of any person who has violated or failed, neglected, or refused to obey this Chapter, any condition of a permit or state permit, or any order of the VSMP authority, the Director may provide, in an order issued against such person, for the payment of civil charges or violations in specific sums, not to exceed the limit specified in this section. Any civil charges collected shall be paid into the treasury of Fairfax County.

ARTICLE 9

Illicit Discharges to the Storm Sewer System and State Waters

Section 124-9-1. Purpose.

The purpose of this Article is to enable the County to comply with state and federal laws and regulations, including the Clean Water Act (33 U.S.C. §§ 1251 et seq.), and the County's MS4 permit by preventing the discharge of non-stormwater substances into the Fairfax County Municipal Separate Storm Sewer System ("County MS4") and to prevent discharges of prohibited substances into waters of the Commonwealth of Virginia that are located within the jurisdictional boundaries of the County and five miles beyond such jurisdictional boundary. The objective of this Article is to:

A. Prevent the discharge of non-stormwater and/or prohibited substances into the County MS4 and state waters;

B. Prevent illicit connections to the County MS4;

C. Facilitate compliance with the state-issued Fairfax County Municipal Separate Stormwater Sewer System permit; and

D. Authorize the Director to investigate and enforce violations of this Article.

Section 124-9-2. Responsibilities of the Director.

The Director shall have direct charge over the County MS4, including responsibility for the operation, maintenance, and administration thereof, and responsibility for the enforcement of violations of this Article.

Section 124-9-3. Illicit Discharges to the Storm Sewer System and State Waters.

A. It shall be unlawful for any Person to discharge or deposit, or to cause or allow to be discharged or deposited any wastes, trash, leaves, grass clippings, soil, oil, petroleum products, noxious or flammable substances, or any matter causing or adding pollution in any state waters of this County or on any property in this County in any manner so as to allow any such substance to be washed into state waters by storm or flood water. Nothing in this section shall prohibit the discharge or deposit of waste in state waters when such discharging has been approved by a state agency.

B. It shall be unlawful for any Person to discharge or deposit, or to cause or allow to be discharged or deposited in the County MS4, any wastes, trash, leaves, grass clippings, oil, petroleum products, noxious or flammable substances, or any matter causing or adding pollution; provided however, that leaves may be piled at curbs during such seasons and in such areas as may now or in the future be furnished mechanical leaf collection service. It is the intent of this provision to prohibit the entry into the County MS4 of any substance, whether solid or liquid, other than naturally occurring surface or subsurface waters.

C. It shall be unlawful to connect any plumbing fixtures, drains, appurtenances, or appliances that discharge any substance other than stormwater into the County MS4.

Section 124-9-4. Standards for Inspection of Industrial and Commercial Property Discharging to the County MS4.

The Director shall develop a program for the routine inspection of properties, which because of the nature of the industrial or commercial use thereon, present a high risk of discharging non-stormwater substances to the County MS4 that may, in the opinion of the Director, result in a significant pollutant load. The Director shall make publicly available the methodology and criteria for including properties in the inspection program and the basis for selecting a particular property for inspection under this program.

PROPOSED AMENDMENTS
TO
CHAPTER 101 (SUBDIVISION)
OF THE CODE OF THE COUNTY OF FAIRFAX VIRGINIA

Amend Article 2, Subdivision Application Procedure and Approval Process, Section 101-2-1, Minimum Requirements, by revising paragraphs (12) and (13), to read as follows:

(12) Drainage and flood control. Improvements for the purpose of adequate control of stormwater shall be required by the Director according to the standards and criteria duly adopted in Chapters 118 and 124 of the County Code and the Public Facilities Manual.

(13) Stormwater quality. All required Water Quality Impact Assessments, site-specific determinations of water bodies with perennial flow, Resource Protection Area Boundary Delineations and Resource Management Area Boundary Delineations shall be submitted and adequate measures shall be provided in compliance with Chapters 118 and 124 of the County Code and the Public Facilities Manual.

PROPOSED AMENDMENTS
TO
CHAPTER 104 (EROSION AND SEDIMENTATION CONTROL)
OF THE CODE OF THE COUNTY OF FAIRFAX VIRGINIA

Amend Article 1, Purpose and Administration, by revising Section 104-1-1, Purpose, to read as follows:

Section 104-1-1. Purpose and administration.

Pursuant to the powers granted by general law, including the provisions of Code of Virginia, Title 62.1, Chapter 3.1, Article 2.4 ~~Title 10.1, Chapter 5, Article 4~~, Erosion and Sediment Control Law, this Chapter is adopted for the following purposes: To conserve and protect the land, water, air, vegetation and other natural resources of Fairfax County; to alleviate erosion, siltation and other harmful effects of land-disturbing activities on neighboring land and streams, by ensuring that the owner of the property on which land-disturbing activities are to be carried out provides adequate controls of erosion and sedimentation; and takes necessary measures to preserve and protect trees and other vegetation during all phases of any land-disturbing activity. The Director shall be responsible for the administration of this Chapter.

Amend Article 1, Purpose and Administration, by revising Section 104-1-2, Applicability; regulated land-disturbing activities; submission and approval of a conservation plan, to read as follows:

Section 104-1-2. Applicability; regulated land-disturbing activities; submission and approval of a conservation plan.

Except as noted herein, no person may engage in any land-disturbing activity in Fairfax County until he has submitted to the County a conservation plan for the land-disturbing activity and the plan has been reviewed and approved by the Director. The conservation plan shall be included in the grading plan required under Paragraph 3 of Part 6 of Article 2 of the Zoning Ordinance unless the following applies. Where the land disturbing activity results from the demolition of a single family dwelling, demolition of an accessory structure to a single family dwelling, construction of an addition to a single family dwelling as defined in Chapter 61 of the Code, or construction of an accessory structure to a single family dwelling, that results in a disturbed area of 5,000 square feet or less and does not require the installation of water quality controls or other drainage improvements, the conservation plan may be included in a plat certified by a land surveyor, engineer, landscape architect or architect authorized by the State to practice as such meeting the requirements of Part 6 of Article 18 of the Zoning Ordinance in lieu of a grading plan. The standards in ~~Section~~ § 104-1-8 are to be used by the applicant when making a submittal under the provisions of this Chapter and in the preparation of a conservation plan. The Director, in considering the adequacy of a submitted plan, shall be guided by these standards. In addition, as a prerequisite to engaging in the land-disturbing activities shown on the approved plan, the person responsible for carrying out the plan shall provide the name of an

individual holding a certificate of competence to the Director, as provided in § 62.1-44.15:52 ~~Section 10.1-561~~ of the Code of Virginia, who will be in charge of and responsible for carrying out the land-disturbing activity. Failure to provide the name of an individual holding a certificate of competence prior to engaging in land-disturbing activities may result in revocation of the approval of the plan and the person responsible for carrying out the plan shall be subject to the penalties provided in this Chapter. In order to prevent further erosion, the County may require approval of a conservation plan for any land identified as an erosion impact area. The provisions of this Article shall not limit the powers or duties presently exercised by the State Water Control Board or the Department of Mines, Minerals and Energy.

(a) Electric, natural gas and telephone utility companies, interstate and intrastate natural gas pipeline companies and railroad companies shall file general erosion and sediment control specifications annually with the ~~Virginia Soil and Water Conservation~~ State Water Control Board for review and approval in accordance with § 62.1-44.15:55.D ~~Section 10.1.563.D~~ of the Virginia Code.

(b) Any person engaging, in more than one jurisdiction, in the creation and operation of wetland mitigation or stream restoration banks, which have been approved and are operated in accordance with applicable federal and state guidance, laws, or regulations for the establishment, use, and operation of wetland mitigation or stream restoration banks, pursuant to a mitigation banking instrument signed by the Department of Environmental Quality, the Marine Resources Commission, or the U.S. Army Corps of Engineers, may, at the option of that person, file general erosion and sediment control specifications for wetland mitigation or stream restoration banks annually with the ~~Virginia Soil and Water Conservation~~ State Water Control Board for review and approval in accordance with § 62.1-44.15:55.E ~~Section 10.1-563.E~~ of the Virginia Code. Approval of general erosion and sediment control specifications by the ~~Virginia Soil and Water Conservation~~ State Water Control Board does not relieve the owner or operator from compliance with any other Fairfax County ordinances and regulations including requirements to submit plans and obtain permits as may be required by such ordinances and regulations.

(c) Except as provided for in § 62.1-44.15:56 ~~Section 10.1-564~~ of the Virginia Code, land-disturbing activities undertaken by an agency of the Commonwealth of Virginia shall be exempt from the requirements of this Chapter. Notwithstanding § 62.1-44.15:56 of the Virginia Code, public institutions of higher education, including community colleges, colleges, and universities, shall be subject to project review and compliance for state erosion and sediment control requirements by the Director, unless such institution submits annual specifications to the Department of Conservation and Recreation, in accordance with § 62.1-44.15:56 A (i) of the Virginia Code.

Amend Article 1, Purpose and Administration, Section 104-1-3 Plan review and approval, by revising paragraph (b) to read as follows:

(b) The Director must act on all plans submitted within forty-five (45) days from receipt thereof by either approving said plan in writing or by disapproving said plan in writing and giving the specific reasons for its disapproval. When a plan submitted for approval under this Section is found upon review by the Director to be inadequate, he/she shall specify such

modifications, terms, and conditions as will permit approval of the plan and communicate these requirements to the applicant. If no action is taken by the Director within the time specified above, the plan shall be deemed approved and the person authorized to proceed with the proposed activity. Where proposed land-disturbing activities involve lands under the jurisdiction of more than one (1) local erosion and sediment control program, at the option of the applicant, an erosion and sediment control plan may be submitted to the State Water Control Board ~~Soil and Water Conservation Board~~ for review and approval rather than to each jurisdiction concerned.

Amend Article 1, Purpose and Administration, Section 104-1-3 Plan review and approval, by adding new paragraph (f) to read as follows:

(f) The Director may waive or modify any of the standards that are deemed inappropriate or too restrictive for site conditions, by granting a variance. A variance may be granted under these conditions:

(1) At the time of plan submission, an applicant may request a variance to become part of the approved erosion and sediment control plan. The applicant shall explain the reasons for requesting variances in writing. Specific variances which are allowed by the Director shall be documented in the plan.

(2) During construction, the person responsible for implementing the approved plan may request a variance in writing from the Director. The Director shall respond in writing either approving or disapproving such a request. If the Director does not approve a variance within 10 days of receipt of the request, the request shall be considered to be disapproved. Following disapproval, the applicant may resubmit a variance request with additional documentation.

(3) The Director shall consider variance requests judiciously, keeping in mind both the need of the applicant to maximize cost effectiveness and the need to protect off-site properties and resources from damage.

Amend Article 1, Purpose and Administration, by revising Section 104-1-4, Approved plan required for issuance of grading, building or other permits; security for performance, to read as follows:

Section 104-1-4. - Approved plan required for issuance of grading, building or other permits; security for performance.

Neither the Director, nor any agency authorized under any law to issue grading, building, or other permits for activities involving land-disturbing activities, may issue any such permits unless the applicant submits with his application an approved conservation plan, ~~and~~ certification that the plan will be followed, and, where required, evidence of VSMP permit coverage. Prior to issuance of any permit, the person responsible for carrying out the plan shall provide the name of an individual holding a certificate of competence to the Director, as provided by Virginia Code, § 62.1-44.15:52 ~~§ 10.1-561~~, who will be in charge of and responsible for carrying out the land-disturbing activity. The Director, prior to issuance of any permit, may also require from any applicant a reasonable performance bond with surety, cash

escrow, letter of credit, any combination thereof, or such other legal arrangement acceptable to the Director, to ensure that measures could be taken by the County at the applicant's expense should he fail, after proper notice, within the time specified to initiate or maintain appropriate conservation action which may be required of him by the approved plan as a result of his land-disturbing activity. If the County takes such conservation action upon any failure by the permittee, the County may collect from the permittee the reasonable cost of such action which exceeds the amount of security held. Following the issuance of any permit, the Director, or his agents, shall have the right to enter and inspect the permittee's property at all times prior to release of the project. Within 60 days of the completion of adequate stabilization of the land-disturbing activity, as determined by the Director, such bond, cash escrow, letter of credit or other legal arrangement, or the unexpended or unobligated portion thereof shall be refunded to the applicant or terminated. These requirements are in addition to all other provisions of law relating to the issuance of such permits and are not intended to otherwise affect the requirements for such permits.

Amend Article 1, Purpose and Administration, by revising Section 104-1-5, Monitoring and inspections, to read as follows:

Section 104-1-5. Monitoring and inspections.

The Director shall provide for periodic inspections of any land-disturbing activity in accordance with Section 4VAC50-30-60.B of the Virginia Erosion and Sediment Control Regulations and require that an individual holding a certificate of competence, as provided by Virginia Code, § 62.1-44.15:52 ~~§ 10.1-561~~, will be in charge of and responsible for carrying out the land-disturbing activity. Failure to provide the name of an individual holding a certificate of competence prior to engaging in land-disturbing activities may result in revocation of the approval of the plan and the person responsible for carrying out the plan shall be subject to the penalties provided in this Chapter. The Director may require monitoring and reports from the person responsible for carrying out the plan to ensure compliance with (1) the approved plan, and (2) the field practices specified in the standards defined herein, to determine whether the measures required in the plan and standards are effective in preserving and protecting trees and other vegetation, and controlling erosion and sediment resulting from the land-disturbing activities. Notice of such right of inspection shall be included in the permit. The owner, permittee, or person responsible for carrying out the plan shall be given notice of the inspection. If the Director determines that the permittee has failed to comply with the plan, the standards defined herein, or this Section, the Director shall immediately serve upon the permittee, his agent, or the person responsible for carrying out the plan either in person or by registered or certified mail to the address specified by the permittee in his permit application, or by delivery at the site of the permitted activities to the agent or employee of the permittee supervising such activities a notice to comply.

Such notice shall specifically set forth the measures needed to comply with the plan and shall specify the time within which such measures shall be completed. If the permittee fails to comply within the time specified, he may be subject to revocation of the permit; furthermore, the permittee or the person responsible for carrying out the plan shall be deemed to be in violation of this Article and shall be subject to the penalties provided by this Article.

Amend Article 1, Purpose and Administration, by revising Section 104-1-7, Definitions, to read as follows:

For the purpose of this Chapter, the following terms shall have the meanings respectively ascribed to them by this Section:

(a) Applicant means any person submitting an erosion and sediment control plan for approval or requesting the issuance of a permit, when required, authorizing land-disturbing activities to commence.

(b) Board means the Virginia State Water Control Board ~~Soil and Water Conservation Board~~.

(c) *Certified inspector* means an employee or agent of a ~~program~~ VESCP authority who (i) holds a certificate of competence from the Board in the area of project inspection or (ii) is enrolled in the Board's training program for project inspection and successfully completes such program within one (1) year after enrollment.

(d) *Certified plan reviewer* means an employee or agent of a ~~program~~ VESCP authority who (i) holds a certificate of competence from the Board in the area of plan review, (ii) is enrolled in the Board's training program for plan review and successfully completes such program within one (1) year after enrollment, or (iii) is licensed as a professional engineer, architect, ~~certified~~ landscape architect or land surveyor pursuant to Code of Virginia, Title 54.1, Chapter 4, Article 1, ~~Sections~~ § 54.1-400 et seq., or is a professional soil scientist as defined in Code of Virginia, Title 54.1, Chapter 22, § 54.1-2200 et seq.

(e) *Certified program administrator* means an employee or agent of a ~~program~~ VESCP authority who (i) holds a certificate of competence from the Board in the area of program administration or (ii) is enrolled in the Board's training program for program administration and successfully completes such program within one (1) year after enrollment.

(f) *Clearing* means removing or causing to be removed the vegetation growing in the soil which protects and stabilizes the soil. Such removing or causing to be removed shall include any intentional or negligent act to (1) cut down, (2) remove all or a substantial part of, or (3) damage a tree or other vegetation which will cause the tree or other vegetation to decline and/or die. Such acts shall include but not be limited to damage inflicted upon the root system of the vegetation by the application of toxic substances, by the operation of equipment and vehicles, by storage of materials, or by the damage of natural grade due to unapproved excavation or filling, or damage caused by the unapproved alteration of natural physical conditions.

(g) *Conservation plan or erosion and sediment control plan or plan* means a document containing methods for the conservation of soil and water and other natural resources of a unit or group of units of land, pursuant to the requirements of this Chapter. It may include appropriate maps, an appropriate soil and water plan inventory and management information with needed interpretations, and a record of decisions contributing to conservation treatment. The plan shall

contain all major conservation decisions to assure that the entire unit or units of land will be so treated to achieve the conservation objectives and demonstrate compliance with the standards of ~~Section~~ § 104-1-8. The conservation plan shall contain the tree conservation requirements specified in Chapter 122 of the Code and in Chapter 12 of the Public Facilities Manual.

(h) *Conservation standards or standards* shall be defined in ~~Section~~ § 104-1-8, "Conservation standards," of this Article.

(i) *Director* means the Director of the Department of Public Works and Environmental Services, or his/her agent.

(j) *Disturbed land area* means that land on which the soil has been disturbed or on which soil disturbances may be caused by natural elements due to clearing of the vegetation or on which pavement or other impervious surfaces have been placed over existing pervious surfaces.

(k) *Engage* means to take part in or to allow, direct or permit another person to take part in, a land-disturbing activity.

(l) *Erosion impact area* means an area of land not associated with current land-disturbing activities but subject to persistent soil erosion resulting in the delivery of sediment onto neighboring properties or into state waters. This definition shall not apply to any lot or parcel of land 10,000 square feet or less used for residential purposes or to shorelines where the erosion results from wave action or other coastal processes.

(m) *Land-disturbing activity* means any ~~land~~ man-made change to the land surface that ~~which~~ may result in soil erosion from water or wind and the movement of sediments into State waters or onto lands in the Commonwealth, including, but not limited to, clearing, grading, excavating, transporting, and filling of land, paving of existing pervious areas or otherwise creating new impervious areas, except that the term shall not include:

(1) Minor land-disturbing activities such as home gardens and individual home landscaping, repairs and maintenance work;

(2) Individual service connections;

(3) Installation, maintenance or repair of any underground public utility lines when such activity occurs on an existing hard-surfaced road, street or sidewalk provided such land-disturbing activity is confined to the area of the road, street or sidewalk ~~which~~ that is hard surfaced;

(4) Septic tank lines or drainfields unless included in an overall plan for land-disturbing activity relating to construction of the building to be served by the septic tank system;

(5) Permitted s~~S~~urface or deep mining operations and projects, or oil and gas operations and projects conducted pursuant to Code of Virginia Title 45.1;

~~(6) Exploration or drilling for oil and gas including the well site, roads, feeder lines and off-site disposal areas;~~

(6~~7~~) Tilling, planting, or harvesting ~~or~~ of agricultural, horticultural, or forest crops, ~~or~~ livestock feedlot operations, or as additionally set forth by the Board in regulation; including engineering operations as follows: the construction of terraces, terrace outlets, check dams,

desilting basins, dikes, ponds, ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage and land irrigation; however, this exception shall not apply to harvesting of forest crops unless the area on which harvesting occurs is reforested artificially or naturally in accordance with the provisions of Virginia Code, Chapter 11~~, Section~~ (§ 10.1-1100 et seq.) of Title 10.1 or is converted to bona fide agricultural or improved pasture use as described in Subsection (B) of § 10.1-1163;

(7~~8~~) Repair or rebuilding of the tracks, rights-of-way, bridges, communication facilities and other related structures and facilities of a railroad company.

(8~~9~~) Agricultural engineering operations, including but not limited to the construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds not required to comply with the Dam Safety Act (Virginia Code, ~~Section~~ § 10.1-604 et seq.), ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage and land irrigation;

(9~~10~~) Disturbed land areas for commercial or noncommercial uses of 2,500 square feet or less in size;

(10~~11~~) Installation of fence and sign posts or telephone and electric poles and other kinds of posts or poles;

(11~~12~~) Shoreline erosion control projects on tidal waters when all of the land-disturbing activities are within the regulatory authority of and approved by the Fairfax County Wetlands Board, the Marine Resources Commission or the United States Army Corps of Engineers; however, any associated land that is disturbed outside of this exempted area shall remain subject to this Chapter;

(12~~13~~) Emergency work to protect life, limb or property, and emergency repairs; however, if the land-disturbing activity would have required an approved erosion and sediment control plan, if the activity were not an emergency, then the land area disturbed shall be shaped and stabilized in accordance with the requirements of the Director.

(n) *Natural channel design concepts* means the utilization of engineering analysis and fluvial geomorphic processes to create, rehabilitate, restore, or stabilize an open conveyance system for the purpose of creating or recreating a stream that conveys its bankfull storm event within its banks and allows larger flows to access its bankfull bench and its floodplain.

(o~~n~~) *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.

(p) *Peak flow rate* means the maximum instantaneous flow from a given storm condition at a particular location.

(q~~o~~) *Permittee* means the person to whom the permit authorizing land-disturbing activities is issued or the person who certified that the approved erosion and sediment control plan will be followed.

(r~~p~~) *Person* means any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, county, city, town, or other political subdivision of this State, any interstate body, or any other legal entity.

~~(q) *Plan-approving authority* means the Director.~~

~~(r) Program authority means the County of Fairfax, Virginia which has adopted an erosion and sediment control program which has been approved by the Board.~~

(s) *Runoff volume* means the volume of water that runs off the land development project from a prescribed storm event.

(t~~s~~) *Soil and water conservation district means* a political subdivision of ~~this~~ the Commonwealth organized in accordance with the provisions of Virginia Code Article 1.5 (§ 10.1-1187.21 et seq.) of Chapter 11.1 of Title 10.1. ~~Article 3 (Section 10.1-506 et seq.) of Chapter 5~~

(u~~t~~) *State waters* means all waters on the surface and under the ground wholly or partially within or bordering the Commonwealth or within its jurisdiction.

(v~~u~~) *Vegetation* includes but is not limited to trees, shrubs and plants of any kind.

(w) *Virginia Erosion and Sediment Control Program* or *VESCP* means a program approved by the Board that has been established by a VESCP authority for the effective control of soil erosion, sediment deposition, and nonagricultural runoff associated with a land-disturbing activity to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources and shall include such items where applicable as local ordinances, rules, permit requirements, annual standards and specifications, policies and guidelines, technical materials, and requirements for plan review, inspection, enforcement where authorized in this article, and evaluation consistent with the requirements of this article and its associated regulations.

(x) *Virginia Erosion and Sediment Control Program authority* or *VESCP* authority means the County of Fairfax, Virginia which has been approved by the Board to operate a VESCP.

Amend Article 1, Purpose and Administration, by adding new paragraph (c) to Section 104-1-8, Conservation Standards, to read as follows:

(c) Stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to Virginia Code §§ 62.1-44.15:52, 62.1-44.15:54 or 62.1-44.15:65 or this section. Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural or man-made channels if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 24-hour period the expected rainfall resulting from the one-year, 24-hour storm; and (iii) reduce the allowable peak flow rate resulting from the 1.5-year, two-year, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested

peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirement for natural or man-made channels as defined in regulations promulgated pursuant to Virginia Code §§ 62.1-44.15:54 or 62.1-44.15:65 or this section. For plans approved on and after July 1, 2014, the flow rate capacity and velocity requirements of this subsection shall be satisfied by compliance with water quantity requirements in the Stormwater Management Act (Virginia Code § 62.1-44.15:24 et seq.) and attendant regulations, unless such land-disturbing activities are in accordance with the grandfathering provisions of the Virginia Stormwater Management Program (VSMP) Permit Regulations.

Amend Article 1, Purpose and Administration, by adding new Section 104-1-13, Right of Entry, to read as follows:

Section 104-1-13, Right of Entry

The Director or any duly authorized agent of the Director may, at reasonable times and under reasonable circumstances, enter any establishment or upon any property, public or private, for the purpose of obtaining information or conducting surveys or investigations necessary in the enforcement of the provisions of Virginia Erosion and Sediment Control Law and this Chapter.

PROPOSED AMENDMENT
TO
THE CODE OF THE COUNTY OF FAIRFAX VIRGINIA
REPEALING
CHAPTER 105 (POLLUTION OF STATE WATERS)

Amend The Code of the County of Fairfax Virginia by repealing Chapter 105 (Pollution of State Waters) in its entirety.

~~CHAPTER 105 (POLLUTION OF STATE WATERS)~~

~~Article 1. General Provisions.~~

~~Section 105-1-1. Pollution of state waters.~~

~~(a) It shall be unlawful for any person to discharge, deposit or cause or allow to be discharged or deposited in any state waters of this County any wastes, rubbish, trash, garbage, dirt, soil, sand, silt, clay, oil or any matter causing or aiding pollution or to discharge, deposit or cause or allow to be discharged or deposited any wastes, rubbish, trash, garbage, dirt, soil, sand, silt, clay, oil or any matter causing or aiding pollution on any property in this County in any manner so as to allow such to be washed into any State waters by storm or flood water.~~

~~(b) "Pollution" and "state waters," as used in this Section shall be as defined by § 62.1-44.3, Va. Code Ann.~~

~~(c) Nothing contained in this Section shall prohibit the discharge of deposit of waste into state waters when such discharging has been approved by the State Water Control Board.~~

PROPOSED AMENDMENT
TO
THE CODE OF THE COUNTY OF FAIRFAX VIRGINIA
REPEALING
CHAPTER 106 (STORM DRAINAGE)

Amend The Code of the County of Fairfax Virginia by repealing Chapter 106 (Storm Drainage) in its entirety.

~~CHAPTER 106 (STORM DRAINAGE)~~

~~Article 1. General Provisions.~~

~~Section 106-1-1. Storm drainage facilities; maintenance and cleanliness.~~

~~(a) It shall be unlawful for any person to deposit or cause to be deposited, in any public storm drainage facility, including gutters and ditches, any substance, included but not limited to, trash, grass clippings, petroleum products, or other noxious or flammable substance; provided, however, that leaves may be piled at curbs during such seasons and in such areas as may now or in the future be furnished mechanical leaf collection service.~~

~~(b) It is intent of this Section to prohibit the entry into public storm drainage facilities of any substance, whether solid or liquid, other than surface or subsurface waters.~~

PROPOSED AMENDMENT
TO
CHAPTER 112 (ZONING ORDINANCE)
OF
THE CODE OF THE COUNTY OF FAIRFAX VIRGINIA

This proposed Zoning Ordinance amendment is based on the Zoning Ordinance in effect as of September 10, 2013 and there may be other proposed amendments which may affect some of the numbering, order or text arrangement of the paragraphs or sections set forth in this amendment, which other amendments may be adopted prior to action on this amendment. In such event, any necessary renumbering or editorial revisions caused by the adoption of any Zoning Ordinance amendments by the Board of Supervisors prior to the date of adoption of this amendment will be administratively incorporated by the Clerk in the printed version of this amendment following Board adoption.

Amend Article 17, Site Plans, as follows:

- **Amend Part 1, General Requirements, as follows:**

  - **Amend Sect. 17-105, Minor Site Plans, by revising Par. 2H to read as follows:**

    2. A minor site plan shall be submitted on six (6) copies of a form provided by the Director and shall be accompanied by six (6) copies of a plan depicting the existing and proposed uses and improvements. Minor site plans shall be subject to the fees set forth in Sect. 109 below and each plan shall be accompanied by a receipt evidencing the payment of all such required fees. Minor site plans shall include, when applicable, the following information:

       H. Delineation of any Resource Protection Area and Resource Management Area, description of existing/proposed outfall system and how stormwater quality, quantity and detention will be accommodated in accordance with the Public Facilities Manual and Chapter ~~118~~ 124 of The Code.

  - **Amend Sect. 17-106, Required Information on Site Plans, by revising Par. 30 to read as follows:**

    All site plans shall contain a cover sheet as prescribed by the Director and the following information, where applicable, unless the Director determines, based upon written justification submitted with the plan, that the information is unnecessary for a complete review of the site plan. Site plans shall also be prepared in accordance with the provisions of the Public Facilities Manual and shall be submitted in metric measurements or the English equivalent to metric measurements; provided, however,

that in the event of any discrepancy between the English and metric measurements used to express any standard in this Ordinance, the English measure shall control.

30. Provisions for the adequate disposition of natural and storm water in accordance with Chapter ~~118~~ 124 of The Code and the Public Facilities Manual, indicating the location, size, type and grade of ditches, catch basins and pipes and connections to existing drainage systems, existing and proposed storm drainage easements, and on-site storm water detention and water quality control facilities where deemed appropriate and necessary by the Director.

-Amend Part 2, Required Improvements, Sect. 17-201, Improvements to be Provided, by revising Par. 8 to read as follows:

In furtherance of the purposes of this Ordinance and to assure the public safety and general welfare and except as provided for in the Commercial Revitalization District provisions, no site plan or minor site plan shall be approved unless the Director is assured that the following improvements either exist or will be made or the Director has established that the requirement for the improvements may be modified or waived, based on information provided by the applicant, and a determination by the Director that such improvements are unnecessary, and such modification or waiver will not adversely affect other required improvements and compliance with all other applicable requirements. The Director may attach conditions to any such modification or waiver to assure that the results of the modification or waiver will be in accordance with the purpose and intent of this Part:

8. Installation of an adequate drainage system for the disposition of storm and natural water in accordance with the provisions of Chapter ~~118~~ 124 of The Code and the Public Facilities Manual. Appeals of decisions made pursuant to Chapter ~~118~~ 124 of The Code which are appealable shall be processed in accordance with Article ~~8~~ 7 of Chapter ~~118~~ 124.

PROPOSED AMENDMENT
TO
CHAPTER 118 (CHESAPEAKE BAY PRESERVATION ORDINANCE)
OF
THE CODE OF THE COUNTY OF FAIRFAX VIRGINIA

Amend Article 1. General Provisions and Definitions, by revising Section 118-1-2 Authority, to read as follows:

Section 118-1-2. Authority.

This ordinance is enacted pursuant to the authority and mandates of the Chesapeake Bay Preservation Act, Article 2.5 (§ 62.1-44.15:67 et seq.) of Chapter 3.1 of Title 62.1 [formerly Article 1 (§ ~~Sections~~ 10.1-2100, et seq.) of Chapter 21 of Title 10.1], of the *Code of Virginia*.

Amend Article 1. General Provisions and Definitions, by revising Section 118-1-6, Definitions, paragraphs (f), (g), (k), and (v) to read as follows:

(f) "Chesapeake Bay Preservation Area" or "CBPA" means any land designated by the County pursuant to Part III of the Chesapeake Bay Preservation Area Designation and Management Regulations and § 62.1-44.15:72 ~~Section 10.1-2107~~ of the *Code of Virginia*. A Chesapeake Bay Preservation Area shall consist of a Resource Protection Area and a Resource Management Area.

(g) "Development" means the construction, rehabilitation, rebuilding or substantial alteration of residential, commercial, industrial, institutional, recreational, transportation, or utility uses, facilities or structures ~~which results in a net increase in impervious area within an RPA and/or a net increase in impervious area within an RMA of greater than 20%, relative to conditions prior to development~~.

(k) "Impervious area" or "impervious surface" means a surface composed of any material that significantly impedes or prevents natural infiltration of water into the soil. Impervious surfaces include, but are not limited to, roofs, buildings, streets, and concrete, asphalt, or compacted gravel surfaces. ~~"Impervious area" or "impervious surface" does not include the water surface area of a swimming pool.~~

(v) "Redevelopment" means the process of developing land that is or has been previously developed ~~substantial alteration, rehabilitation, or rebuilding of a property for residential, commercial, industrial, or other purposes where there is no net increase in impervious area by the proposed redevelopment within an RPA and no more than a net increase in impervious area within an RMA of 20% relative to conditions prior to redevelopment, or any construction, rehabilitation, rebuilding, or substantial alteration of residential, commercial, industrial, institutional, recreational, transportation, or utility uses, facilities or structures within an IDA~~.

Amend Article 2 Allowed Uses, Development and Redevelopment, by revising Section 118-2-1 Allowed Uses, Development and Redevelopment in Resource Protection Areas paragraphs (b) and (e) to read as follows:

(b) Redevelopment outside of IDAs only if there is no increase in the amount of imperious cover and no further encroachment within the RPA~~, including~~ and all development or redevelopment within IDAs, subject to compliance with the performance criteria of Article 3 of

this Chapter; and

(e) Flood control and stormwater management facilities that drain or treat water from multiple development projects or from a significant portion of a watershed, provided that:

(1) Such facilities are allowed and constructed in accordance with the Stormwater Management Act (§ 62.1-44.15:24 et seq.) of the Code of Virginia, the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.), and Chapter 124 of the Code;

(2 ~~1~~) The Director has conclusively established that location of the facility within the Resource Protection Area is the optimum location;

(3 ~~2~~) The size of the facility is the minimum necessary to provide necessary flood control or stormwater treatment, or both;

(4 ~~3~~) The facility must be consistent with ~~Fairfax County's stormwater management program as approved by the Chesapeake Bay Local Assistance Board~~ a comprehensive stormwater management plan approved in accordance with 4 VAC 50-60-92 of the VSMP Permit Regulations;

(5 ~~4~~) All applicable permits for construction in state or federal waters must be obtained from the appropriate state and federal agencies, such as the U.S. Army Corps of Engineers, the Virginia Department of Conservation and Recreation, the Virginia Department of Environmental Quality, and the Virginia Marine Resources Commission; ~~and~~

(6 ~~5~~) Approval must be received from the Director prior to construction; and

(7). Routine maintenance is allowed to be performed on such facilities to assure that they continue to function as designed.

It is not the intent of this subsection to allow a best management practice that collects and treats runoff from only an individual lot or some portion of the lot to be located within a Resource Protection Area.

Amend Article 3 Land Use and Development Performance Criteria, by revising Section 118-3-2. General Performance Criteria for Resource Management Areas and Resource Protection Areas to read as follows:

Section 118-3-2. General Performance Criteria for Resource Management Areas and Resource Protection Areas.

Unless ~~waived or modified by other~~ an exception is granted pursuant to provisions of this Chapter, it shall be demonstrated to the satisfaction of the Director that any use, development, or redevelopment of land in Chesapeake Bay Preservation Areas meets the following performance criteria:

(a) No more land shall be disturbed than is necessary to provide for the proposed use, development, or redevelopment.

(b) Indigenous vegetation shall be preserved to the maximum extent practicable consistent with the use, development, or redevelopment proposed.

~~(c) Where the best management practices utilized require regular or periodic maintenance in order to continue their functions, such maintenance shall be ensured through a maintenance agreement with the owner or through some other mechanism or agreement that achieves an~~

~~equivalent objective.~~

(c~~d~~) Impervious cover shall be minimized consistent with the use, development, or redevelopment proposed.

(d~~e~~) Any land disturbing activity that exceeds an area of 2,500 square feet shall comply with the requirements of Chapter 104 of the ~~Fairfax~~ County Code. The construction of single family dwellings, septic tanks and drainfields shall not be exempt from this requirement. Enforcement for noncompliance with the erosion and sediment control requirements referenced in this criteria shall be conducted under the provisions of Chapter 104 of the County Code.

(e~~f~~) For any development or redevelopment, stormwater runoff shall be controlled by the use of best management practices (BMPs) in accordance with the requirements of Chapter 124 of the County Code. ~~as follows:~~

~~(1) For development, the projected total phosphorus runoff pollution load for the proposed development shall be reduced by no less than forty (40) percent compared to phosphorus loads projected for the development without BMPs. This requirement shall not apply to any development that does not require a site plan pursuant to Article 17 of the Zoning Ordinance, that does not require subdivision approval pursuant to Chapter 101 of the Fairfax County Code, and that does not result in an impervious area of 18% or greater on the lot or parcel on which the development will occur.~~

~~(2) For development and redevelopment within the Water Supply Protection Overlay District, the phosphorus removal requirements for the overlay district shall apply if such requirements impose a higher standard than the requirements of this Chapter.~~

~~(3) For redevelopment of any property not currently served by one or more BMPs, the total phosphorus runoff pollution load from the property shall be reduced by at least ten (10) percent from the phosphorus runoff pollution load prior to redevelopment.~~

~~(4) For redevelopment of any property that is currently and adequately served by one or more BMPs, the projected phosphorus runoff pollution load after redevelopment shall not exceed the existing phosphorus runoff pollution load.~~

~~(5) Best management practices (BMPs) shall be reviewed, modified, waived and/or approved by the Director in accordance with Article 6 of the Public Facilities Manual. Waivers or modifications shall be subject to the following criteria:~~

~~(i) The requested waiver or modification to the criteria is the minimum necessary to afford relief;~~

~~(ii) Granting the waiver or modification will not confer upon the applicant any special privileges that are denied by this part to other property owners who are subject to its provisions and who are similarly situated;~~

~~(iii) The waiver or modification is in harmony with the purpose and intent of this part and is not of substantial detriment to water quality;~~

~~(iv) The waiver or modification request is not based upon conditions or circumstances that are self-created or self-imposed;~~

~~(v) Reasonable and appropriate conditions are imposed, as warranted, that will prevent the allowed activity from causing a degradation of water quality; and~~

~~(vi) Other findings, as appropriate and required herein, are met.~~

~~(6) The following options shall be considered to comply with paragraph (f) of this Section:~~

~~(i) Incorporation on the site of BMPs that achieve the required control as set forth in paragraphs (1) through (5) above. For the purposes of this subsection, the "site" may include~~

~~multiple projects or properties that are adjacent to one another or lie within the same drainage area where a single BMP or a system of BMPs will be utilized by those projects in common to satisfy water quality protection requirements;~~

~~(ii) Compliance with a locally adopted regional stormwater management program, which may include a Virginia Pollution Discharge Elimination System (VPDES) permit issued by the Department of Environmental Quality to a local government for its municipally owned separate storm sewer system discharges, that is reviewed and found by the Chesapeake Bay Local Assistance Board to achieve water quality protection equivalent to that required by this subsection; or~~

~~(iii) Compliance with a site-specific VPDES permit issued by the Department of Environmental Quality, provided that the local government specifically determines that the permit requires measures that collectively achieve water quality protection equivalent to that required by this subsection.~~

~~(7) The requirements of paragraph (f) of this Section may be waived or modified for a property if the Director determines that the provision of BMPs is not practical or desirable due to constraints imposed by the dimensions or location of the property. Waivers or modifications shall be subject to the following criteria:~~

~~(i) The requested waiver or modification to the criteria is the minimum necessary to afford relief;~~

~~(ii) Granting the waiver or modification will not confer upon the applicant any special privileges that are denied by this part to other property owners who are subject to its provisions and who are similarly situated;~~

~~(iii) The waiver or modification is in harmony with the purpose and intent of this part and is not of substantial detriment to water quality;~~

~~(iv) The waiver or modification request is not based upon conditions or circumstances that are self-created or self-imposed;~~

~~(v) Reasonable and appropriate conditions are imposed, as warranted, that will prevent the allowed activity from causing a degradation of water quality; and~~

~~(vi) Other findings, as appropriate and required herein, are met.~~

~~(8) Any maintenance, alteration, use or improvement to an existing structure or use that does not degrade the quality of surface water discharge, as determined by the Director, may be exempted from the requirements of paragraph (f).~~

(f~~g~~) The Director shall require certification on all plans of development that all wetlands permits required by law will be obtained prior to commencement of land disturbing activities in any area subject to the plan of development review. No land disturbing activity on the land subject to the plan of development shall commence until all such permits have been obtained by the applicant and evidence of such permits has been provided to the Director.

(g~~h~~) All on-site sewage disposal systems requiring a Virginia Pollutant Discharge Elimination System (VPDES) permit shall be subject to the restrictions imposed by the State Water Control Board or the Virginia Department of Health. All on-site sewage disposal systems not requiring a VPDES permit shall be administered by the Director of the Department of Health and shall comply with the following provisions:

(1) Each disposal system shall be pumped out at least once every five years.

(2) For new development or redevelopment, each disposal system shall be provided with a reserve sewage disposal site with a capacity at least equal to that of the primary sewage disposal site.

(i) Compliance with Chapter 68 of the Fairfax County Code shall be deemed to constitute compliance with this requirement. This requirement shall not apply to any parcel of land for which a site plan or preliminary subdivision plat was filed on or before May 21, 1973, and approved by November 20, 1976 if the Director of the Department of Health determines the parcel to have insufficient capacity to accommodate a reserve sewage disposal site except as may be required in the Commonwealth of Virginia Sewage Handling and Disposal Regulations.

(ii) Building shall be prohibited on the area of all such sewage disposal sites, including the reserve sewage disposal site, until the structure is connected to a public sewer or an on-site sewage treatment system which operates under a permit issued by the State Water Control Board.

(h~~i~~) Land upon which agricultural activities are being conducted, including but not limited to crop production, pasture, and dairy and feedlot operations, or lands otherwise defined as agricultural land by the local government, shall have a soil and water quality conservation assessment conducted that evaluates the effectiveness of existing practices pertaining to soil erosion and sediment control, nutrient management, and management of pesticides, and where necessary, results in a plan that outlines additional practices needed to ensure that water quality protection is being accomplished consistent with the Chesapeake Bay Preservation Act and this chapter.

(1) Recommendations for additional conservation practices need address only those conservation issues applicable to the tract or field being assessed. Any soil and water quality conservation practices that are recommended as a result of such an assessment and are subsequently implemented with financial assistance from federal or state cost-share programs must be designed, consistent with cost-share practice standards effective in January 1999 in the "Field Office Technical Guide" of the U.S. Department of Agriculture Natural Resources Conservation Service or the June 2000 edition of the "Virginia Agricultural BMP Manual" of the Virginia Department of Conservation and Recreation, respectively. Unless otherwise specified in this section, general standards pertaining to the various agricultural conservation practices being assessed shall be as follows:

(i) For erosion and sediment control recommendations, the goal shall be, where feasible, to prevent erosion from exceeding the soil loss tolerance level, referred to as "T," as defined in the "National Soil Survey Handbook" of November 1996 in the "Field Office Technical Guide" of the U.S. Department of Agriculture Natural Resources Conservation Service. However, in no case shall erosion exceed the soil loss consistent with an Alternative Conservation System, referred to as an "ACS", as defined in the "Field Office Technical Guide" of the U.S. Department of Agriculture Natural Resources Conservation Service.

(ii) For nutrient management, whenever nutrient management plans are developed, the operator or landowner must provide soil test information, consistent with the Virginia Nutrient Management Training and Certification Regulations (4 VAC 5-15).

(iii) For pest chemical control, referrals shall be made to the local cooperative extension agent or an Integrated Pest Management Specialist of the Virginia Cooperative Extension Service. Recommendations shall include copies of applicable information from the "Virginia Pest Management Guide" or other Extension materials related to pest control.

(2) A higher priority shall be placed on conducting assessments of agricultural fields and tracts adjacent to Resource Protection Areas. However, if the landowner or operator of such a

tract also has Resource Management Area fields or tracts in his operation, the assessment for that landowner or operator may be conducted for all fields or tracts in the operation. When such an expanded assessment is completed, priority must return to Resource Protection Area fields and tracts.

(3) The findings and recommendations of such assessments and any resulting soil and water quality conservation plans will be submitted to the Northern Virginia Soil and Water Conservation District Board, which will be the plan-approving authority.

(i) Unless required by other provisions of the County Code, the Director may grant exceptions to the requirements of this Section subject to the following criteria:

(1) The requested exception to the criteria is the minimum necessary to afford relief;

(2) Granting the exception will not confer upon the applicant any special privileges that are denied by this article to other property owners who are subject to its provisions and who are similarly situated;

(3) The exception is in harmony with the purpose and intent of this article and is not of substantial detriment to water quality;

(4) The exception request is not based upon conditions or circumstances that are self-created or self-imposed;

(5) Reasonable and appropriate conditions are imposed, as warranted, that will prevent the allowed activity from causing a degradation of water quality; and

(6) Other findings, as appropriate and required herein, are met.

Amend Article 3 Land Use and Development Performance Criteria, by revising Section 118-3-3 Additional Performance Criteria for Resource Protection Areas paragraph (c) to read as follows:

(c) Redevelopment, outside of IDAs, is allowed within RPAs only if there is no increase in the amount of impervious area within the RPA and no further encroachment within the RPA and shall conform to ~~the criteria set forth in this Chapter~~ all applicable erosion and sediment control and stormwater management criteria in Chapters 104 and 124 of the County Code as well as all applicable stormwater management requirements of Commonwealth of Virginia and federal agencies.

Amend Article 5 Nonconformities, Waivers, Exceptions, and Exemptions, by revising Section 118-5-2. Public Utilities, Railroads, Public Roads, and Facilities Exemptions paragraph (a) to read as follows:

(a) The construction, installation, operation and maintenance of electric, natural gas, fiber-optic and telephone transmission lines, railroads, and public roads and their appurtenant structures in accordance with:

(1) The Erosion and Sediment Control Law (§ 62.1-44.15:51~~Section 10.1-560~~ et seq. of the *Code of Virginia*) and with Chapter 104 of the ~~Fairfax~~ County Code and with the Stormwater Management Act (§ 62.1-44.15:24 ~~Section 10.1-603.1~~ et seq. of the *Code of Virginia*) and with Chapter 124 of the County Code;

(2) An erosion and sediment control plan and a stormwater management plan approved by the Virginia Department of Conservation and Recreation; or

(3) Local water quality protection criteria at least as stringent as the above state

requirements will be deemed to constitute compliance with this chapter.

The exemption of public roads is further conditioned on the optimization of the road alignment and design, consistent with other applicable requirements, to prevent or otherwise minimize encroachment in the Resource Protection Area and adverse effects on water quality.

Amend Article 5 Nonconformities, Waivers, Exceptions, and Exemptions, by revising Section 118-5-4. Waivers for Loss of Buildable Area in a Resource Protection Area paragraph (a) to read as follows:

(a) When the application of the RPA buffer area would result in the effective loss of a reasonable buildable area on a lot or parcel recorded prior to October 1, 1989, in accordance with all applicable provisions of the County Code in effect at the time of recordation, encroachments into the buffer area may be approved by the Director in accordance with the following criteria:

(1) Encroachments into the buffer area shall be the minimum necessary to achieve a reasonable buildable area for a principal structure and necessary utilities;

(2) Where practicable, a vegetated area that will maximize water quality protection, mitigate the effects of the buffer encroachment, and is equal to the area of encroachment into the buffer area shall be established elsewhere on the lot or parcel;

(3) The encroachment may not extend into the seaward 50 feet of the buffer area;

(4) The proposed development shall not exceed 10,000 square feet of land disturbance in the RPA buffer, exclusive of land disturbance necessary for the installation of a soil absorption field associated with an individual sewage disposal facility and land disturbance necessary to provide access to the lot or parcel and principal structure pursuant to Section 118-2-1(d);

(5) The proposed development shall not create more than 5,000 square feet of impervious surface within the RPA buffer, exclusive of impervious surface necessary to provide access to the lot or parcel and principal structure pursuant to Section 118-2-1(d);

(6) The lot or parcel must meet the minimum lot size specified for the zoning district in which located or meet the requirements of Section 2-405 of Chapter 112, the Zoning Ordinance, and any other applicable ordinances and laws;

(7) The requirements of Section 118-3-2 shall be satisfied or waived pursuant to Section ~~118-3-2(f)(7)~~ 118-3-2(i); and

(8) The requirements of Section 118-3-3 shall be satisfied except as specifically provided for in this section to permit an encroachment into the RPA buffer area.

Amend Article 6 Exceptions, by revising Sections 118-6-1 Granting of Exceptions, 118-6-2 Conduct of Public Hearings, 118-6-3 Required Notice for Public Hearings, and 118-6-7 Exceptions for Loss of Buildable Area in a Resource Protection Area to read as follows:

Section 118-6-1. Granting of Exceptions.

Exceptions to the criteria and requirements of this Chapter to permit encroachment into the RPA that do not qualify for administrative review under Article 5 may be granted ~~by the Exception Review Committee or~~ by the Board of Supervisors ~~in conjunction with a rezoning or special exception approval~~ as set forth in this Article with appropriate conditions necessary to preserve the purposes and intent of this Chapter. No exception shall be granted under this Article except after notice and a public hearing and upon the findings as required herein. All exception requests shall be in writing and submitted to the Director. All exception requests shall be submitted in accordance with the requirements of Section 118-6-5 unless modified by the

Director and will not be accepted until all the submission requirements have been met. Except as noted below, the Director shall, within 90 days of receipt of a complete application for an exception pursuant to this Article, unless an extended period is mutually agreed to by the applicant and the Director, forward such exception request to the Board of Supervisors ~~Exception Review Committee~~ for a public hearing along with a recommendation for approval, denial, or approval with conditions. All exception requests for property that is also the subject of a rezoning or special exception application shall be scheduled concurrently for public hearing with the rezoning or special exception application within twelve (12) months of the date of acceptance, unless an extended period is agreed to by the applicant, and shall be forwarded by the Director to the Board of Supervisors for public hearing along with a recommendation of approval, denial or approval with conditions. If an application is denied or dismissed by the ~~Exception Review Committee or~~ Board of Supervisors, no new application concerning any or all of the same property for the same general use as applied for originally shall be heard by ~~said Exception Review Committee or~~ the Board for a period of less than twelve (12) months from the date of action by the ~~Exception Review Committee or~~ Board on the original application unless otherwise waived by the ~~Exception Review Committee or~~ Board. If an application is withdrawn prior to commencement of the public hearing, there shall be no limit on a rehearing. If an application is withdrawn after commencement of the public hearing, no new application concerning any or all of the same property for the same general use as applied for originally shall be heard by ~~said Exception Review Committee or~~ the Board of Supervisors for a period of less than twelve (12) months from the date of action by the ~~Exception Review Committee or~~ Board on the original application unless otherwise waived by the ~~Exception Review Committee or~~ Board. The time limits set forth in Section 15.2-2259 of the *Code of Virginia* shall be tolled during the pendency of an exception request. Approval of an exception shall constitute approval for the normal and routine maintenance of the facilities which are developed.

Section 118-6-2. Conduct of Public Hearings.

All public hearings required by this Article shall be conducted in accordance with the following provisions:

(a) No public hearing shall be held unless the required notice for same has been satisfied in accordance with the provisions of Section 118-6-3.

(b) All hearings shall be open to the public. Any person may appear and testify at such hearing, either in person or by an authorized agent or attorney.

~~(c) The Exception Review Committee shall by general rule prescribe procedures for the conduct of hearings to be heard by the Exception Review Committee.~~

(c) ~~(d)~~ The Chairman of the ~~Exception Review Committee~~ Board of Supervisors, upon a vote of the majority of the members, may continue or defer a hearing. If a hearing has been opened and public testimony has been received and there is cause for continuation of a hearing, no formal notice as required by Section 118-6-3 shall be required if the hearing is continued to a date certain. If a hearing is concluded, but action is deferred until a future date, no formal notice as set forth in Section 118-6-3 shall be required prior to action being taken. If a hearing has not been opened, and there is cause for deferral of the hearing, written notice to adjacent property owners as required by Section 118-6-3 shall be remailed, except such notice shall be mailed not less than five (5) days in advance of the public hearing.

Section 118-6-3. Required Notice for Public Hearings.

No public hearing shall be held unless documented evidence can be presented that the notice requirements herein have been satisfied. The subject of the public hearing need not be advertised

in full, but may be advertised by reference. Every such advertisement shall contain a descriptive summary of the proposed action and shall contain a reference to the place or places within the County where copies of the subject of the public hearing may be examined.

(a) Exceptions not associated with proposed rezoning or special exception applications.

1. ~~(a)~~ Publication: Public notice of any hearing to be held ~~by the Exception Review Committee~~ shall be published once a week for two (2) successive weeks in a local newspaper having general circulation in the County. ~~Such~~ The second notice shall be published not less than five (5) days nor more than twenty-one (21) days before the date of the hearing, and there shall be a minimum of six (6) days between the first and second publication. The notice shall specify the date, time and place of the hearing and the nature of the matter before the ~~Exception Review Committee~~ Board of Supervisors. The public notice shall be the responsibility of the ~~Exception Review Committee~~ Director.

2. ~~(b)~~ Written Notice to Applicant: ~~For an application for an exception to be heard by the Exception Review Committee, the Exception Review Committee~~ The Director shall send written notice of the public hearing to the applicant. Such written notice shall be sent by either first class or certified mail postmarked a minimum of twenty (20) days before the day of the hearing.

3. ~~(c)~~ Written Notice to Adjacent Property Owners: ~~For applications to be heard by the Exception Review Committee, the~~ The applicant shall send written notice to all owners of property abutting and immediately across the street from and within 500 feet of the subject property and one (1) homeowner association or civic association within the immediate area as approved by the ~~Department of Public Works and Environmental Services~~ Director. Such notice shall include notice to owners of properties abutting and immediately across the street and within 500 feet of the subject property which lie in an adjoining county or city. If such notice does not result in the notification of five (5) different property owners, then additional notices shall be sent to other property owners in the immediate vicinity so that notices are sent to different owners of not less than five (5) properties. Notice shall be sent to the last known address of the owner(s) as shown in the current Real Estate Tax Assessment files. Notice to homeowner associations or civic associations shall be sent to the registered office address kept on file with the State Corporation Commission. The applicant shall send a copy of the notification letter to the Board Member in whose district the subject property is located on the same date the abutting property owners are notified. All written notice shall be sent by certified mail, return receipt requested, and postmarked not less than fifteen (15) days prior to the hearing as evidenced by the postmark date on the white receipts for the certified mailings. Written notice shall include the tax map reference number, the street address of the parcel, the date, time and place of the hearing, and the nature of the matter before the ~~Exception Review Committee~~ Board of Supervisors. A party's actual notice of, or participation in, the proceedings for which the written notice is required shall waive the right of that party to challenge the validity of the proceeding due to failure of the party to receive the written notice required.

(b) ~~(d)~~ Exceptions associated with proposed rezoning or special exception applications.

If an exception is heard concurrently with a public hearing on proposed rezoning or special exception applications, notification of the proposed exception shall be conducted concurrently with the rezoning and special exception notification and shall meet the requirements of Article 18 of the Zoning Ordinance in lieu of paragraph ~~(c)~~ (a) above.

Section 118-6-7. Exceptions for Loss of Buildable Area in a Resource Protection Area.

Where the application of the RPA criteria will result in the effective loss of a reasonable

buildable area on a lot or parcel recorded prior to November 18, 2003, in accordance with all applicable provisions of the County Code in effect at the time of recordation and the proposed development does not satisfy the criteria for an administrative waiver by the Director under Section 118-5-4, exceptions may be approved in accordance with the following criteria:

(a) The proposed development does not exceed 10,000 square feet of land disturbance, exclusive of land disturbance necessary for the installation of a soil absorption field associated with an individual sewage disposal facility and land disturbance necessary to provide access to the lot or parcel and principal structure pursuant to Section 118-2-1(d);

(b) The proposed development does not create more than 5,000 square feet of impervious surface within an RPA, exclusive of impervious surface necessary to provide access to the lot or parcel and principal structure pursuant to Section 118-2-1(d);

(c) The lot or parcel must meet the minimum lot size specified for the zoning district in which located or meet the requirements of Section 2-405 of Chapter 112, the Zoning Ordinance, and any other applicable ordinances and laws;

(d) Where practicable, a vegetated area that will maximize water quality protection, mitigate the effects of the buffer encroachment, and is equal to the area of encroachment into the buffer area shall be established elsewhere on the lot or parcel;

(e) The requirements of Section 118-3-2 shall be satisfied or an exception granted ~~waived~~ pursuant to Section ~~118-3-2(f)(7)~~ 118-3-2(i); and

(f) The requirements of Section 118-3-3 shall be satisfied except as specifically provided for in this section to permit an encroachment into the RPA buffer area.

Delete Article 7 Exception Review Committee in its entirety.

ARTICLE 7.

~~Exception Review Committee.~~ Deleted by Amendment xx-13-118, adopted December 3, 2013, effective December 4, 2013.

~~**Section 118-7-1. Purpose.**~~

~~The purpose of the Exception Review Committee shall be to administer the provisions of Article 6 of this Chapter in such a manner that the intent of the Chapter is maintained.~~

~~**Section 118-7-2. Authority and Establishment.**~~

~~The Exception Review Committee is established in accordance with the requirements of this Chapter and 9 VAC 10-20-140. The official title of this body shall be the "Exception Review Committee".~~

~~**Section 118-7-3. Membership.**~~

~~(a) The Exception Review Committee shall be composed of eleven (11) members, all of whom shall be residents of the County, with demonstrated knowledge of and interest in environmental issues and shall be appointed by the Board of Supervisors for a term of four (4) years. There shall be one (1) member representing each Magisterial District and two (2) at-large members.~~

~~(b) Members shall exempt themselves from voting on any action in which their financial interests or those of their immediate family or employer are directly involved.~~

~~**Section 118-7-4. Officers.**~~

~~The officers of the Exception Review Committee shall consist of a Chairman, Vice-Chairman, and Secretary.~~

~~The Chairman, Vice-Chairman, and Secretary shall be elected by majority vote of the Exception Review Committee at the first Committee meeting each calendar year.~~

~~Section 118-7-5. Meetings.~~

~~(a) The Exception Review Committee shall meet at a time and place to be designated by resolution of the Exception Review Committee.~~

~~(b) Six (6) members of the Exception Review Committee shall constitute a quorum but a lesser number may meet and adjourn.~~

~~(c) Special meetings may be called by the Chairman provided at least five (5) days notice of such meeting is given each member in writing.~~

~~(d) All public hearings conducted by the Exception Review Committee shall be in accordance with the provisions of Section 118-6-2. All hearings shall be open to the public, and any person affected may appear and testify at such hearing, either in person or by an authorized agent or attorney.~~

~~Section 118-7-6. Records.~~

~~(a) The Exception Review Committee shall keep written records and minutes of all its proceedings, showing evidence presented, findings of fact by the Exception Review Committee, and the vote of each member upon each question, or if absent or failing to vote, such fact.~~

~~(b) Every decision of the Exception Review Committee shall be recorded in accordance with standard forms prescribed by the Exception Review Committee, and shall fully set forth the circumstances of the application and the findings on which the decision is based. Every decision of the Exception Review Committee shall be made by resolution adopted by a majority of all of the members present, except as otherwise specifically provided in this Chapter.~~

~~Section 118-7-7. Duties.~~

~~The purpose of the Exception Review Committee shall be to administer the provisions of Article 6 of this Chapter, hold public hearings as required herein, and approve/disapprove exception requests in such a manner that the intent of the Chapter is maintained.~~

Amend Article 8 Appeals to read as follows:

ARTICLE 8.

Appeals.

(a) An applicant aggrieved by any decision of the Director of the Department of Public Works and Environmental Services or the Director of the Department of Health in the administration of this Chapter may, within fifteen (15) days of such decision, appeal the decision to the Board of Supervisors.

~~(b) An applicant or any other party aggrieved by any decision of the Exception Review Committee in the administration of this Chapter may, within thirty (30) days of such decision,~~

~~appeal the decision to the Board of Supervisors.~~

(b~~c~~) Such appeal shall be filed with the Clerk to the Board of Supervisors and shall state with specificity the provisions of this Chapter which the applicant alleges to have been violated by the decision and the reasons therefore. A copy of the appeal shall also be delivered to the Director of the Department of Public Works and Environmental Services within such thirty (30) day period.

(c~~d~~) The time limits set forth in Section 15.2-2259 of Va. Code Ann. shall be tolled during the pendency of an application filed pursuant to Paragraph (a) above.

PROPOSED AMENDMENTS
TO
APPENDIX Q (LAND DEVELOPMENT SERVICES FEE SCHEDULE)
OF THE CODE OF THE COUNTY OF FAIRFAX VIRGINIA

Amend introductory paragraph by modifying it to read as follows:

Appendix Q - Land Development Services Fee Schedule

This fee schedule establishes the fees charged, by Land Development Services, Department of Public Works and Environmental Services and the Fire Marshal, for building and site development activities pursuant to the authority granted by §§ 15.2-2241(9), 15.2-2286(A)(6), 10.1-562(I), 36-105(A), 10.1-603.4, and 10.1-603.4:1 of the *Code of Virginia* and Chapters 2 (Property Under County Control), 61 (Building Provisions), 64 (Mechanical Provisions), 65 (Plumbing and Gas Provisions), 66 (Electrical Provisions), 101 (Subdivision Ordinance), 104 (Erosion and Sediment Control Ordinance), 112 (Zoning Ordinance), and 124 (Stormwater Management Ordinance) of the *Code of the County of Fairfax, Virginia* (the Code).

Amend Section II Site Development Fees by modifying the introductory paragraph to read as follows:

II. SITE DEVELOPMENT FEES

The following site development fees to cover the cost of reviewing site and subdivision plans and related documents; processing site and subdivision plan agreements; making inspections of required site improvements; permitting any work or construction on any land dedicated or proposed for dedication to public use; and other fees incidental to the administration of these activities pursuant to Chapters 2, 101, 104, ~~and~~ 112, and 124 of the Code and any fees paid to the County upon submission of any request for a waiver, exception, and modification of the County Ordinances, are hereby adopted:

Amend Section II Site Development Fees, by modifying Part A (Plan and Document Review Fees) to read as follows:

A: PLAN AND DOCUMENT REVIEW FEES	
The following fees are due upon submission to the County of the following plans and documents. The Fire Prevention Division review fees are listed in Part D.	
(A) Plats:	
1. Easement plat, per submission	$350.00
2. Preliminary subdivision plat:	
• Initial Submission	
o Less than 10 lots	$3,400.00
▪ Plus, fee per lot or division of land including outlots and parcels	$64.00
o 10 lots or more	$5,535.00

▪ Plus, fee per lot or division of land including outlots and parcels	$64.00
• Redate (reapproval): fee for reapproval of a previously approved preliminary plat submitted to the County for approval during the validity period of the preliminary plat, each.	$690.00
• Resubmissions, per submission	25% of the original fee
• Revisions, per submission	25% of the original fee
3. Record (final) subdivision plat:	
• Initial Submission	$590.00
o Plus, fee per lot or division of land including outlots and parcels	$30.00
• Resubmission Fee, per submission	$300.00
• Redate (reapproval): fee for reapproval of a previously approved final plat that has expired, per submission	$515.00
(B) Subdivision Plans, Site Plans, and Site Plans for Public Improvements Only: The following schedule shall be used to tabulate the fees for review of subdivision and site plans, and site plans for public improvements only.	
1. Base Fee:	
• Subdivision Plan	
o 1st submission	$4,700.00
o Plus, fee per disturbed acre or any fraction thereof	$860.00
• Site Plan	
o 1st submission	$7,100.00
o Plus, fee per disturbed area or any fraction thereof	$860.00
• Site plans for public improvements only including sanitary sewer, trail, sidewalk, storm sewer, channel improvements, waterline, and/or road construction pursuant to Chapter 2 of the Code.	
o 1st submission	$3,425.00
o Plus, per linear foot or fraction thereof, of each improvement	$1.18
2. Fees in addition to base fees:	
• Additional plan review, as a result of an approved zoning action associated with the proposed construction to include the following, with a maximum cumulative fee of $3,370.00	
o Sites subject to rezoning	$1,980.00
o Sites subject to special exception	$1,390.00
o Sites subject to special permit	$1,390.00
o Sites subject to variance	$1,030.00
• Review resulting from site conditions and proposed improvements	
o SWM/BMP, for each facility serving the site (on or off-site), except as noted, with a maximum cumulative fee of $7,500.00	~~$2,280.00~~
▪ Constructed Wetland or Ponds	$3,200.00
▪ Bioretention Basin or Filter, Infiltration Facility, Filtering Practice[1], Innovative BMP[2], or Detention-Only Facility[3]	$1,900.00
▪ Dry Swale, Wet Swale, or Grass Channel (per linear foot)	$5.00 $1,500.00 minimum
▪ Rainwater Harvesting System, per square foot of collection area	$0.12 $1,900.00

▪ Permeable Pavement, Vegetated Roof, per square foot of surface area ▪ Manufactured BMP[4], Micro- or Urban Bioretention[5]– ▪ Rooftop Disconnection, for each building served ▪ Sheet Flow to Vegetated Filter Strip or Conserved Open Space, Soil Amendments, Reforestation, flat fee per plan o Floodplain area (existing and proposed) o Natural drainageway (non-floodplain watersheds) o Problem soils (area with soil types A or B, per the official map adopted by the Board or as deemed by the Director) o ~~Stormwater management facility, for each facility serving the site (on or off-site)~~	minimum $0.12 $1,500.00 minimum $1,200.00 $500.00 $500.00 $695.00 $695.00 $1,030.00 ~~$855.00~~
Footnotes; 1. Filtering practices include facilities such as sand filters. 2. BMPs not on the Virginia Stormwater BMP Clearinghouse approved list or listed with a Pilot Use Designation or Conditional Use Designation. 3. Vaults or other underground storage systems providing detention only. No ponds. 4. Includes proprietary devices. 5. Includes residential raingardens, urban stormwater planters, expanded tree pits, and stormwater curb extensions.	
3. Resubmissions: • 2nd submission base fee: fee tabulated at 50% of the first submission fee assessed in accordance with (B1) and (B2) above. o Plus, additional fees charged in accordance (B1) and (B2) above for changes in the amount of disturbed area, zoning action, site conditions, and/or proposed improvements from that indicated on the first submission. The maximum combined first and second submission base fees: o For subdivision plans o For site plans • Resubmission site and subdivision plan after 2nd submission, per submission (does not apply to site plans with public improvements only) • 2nd submission fee for site plans with public improvements only, per submission • Resubmissions after 2nd submission for site plans with public improvements only, per submission: fee tabulated at 50% of the first submission fee in accordance with (B1) and (B2) above.	50% of the original fee Tabulated fee $12,900.00 $46,040.00 $4,545.00 $0.00 50% of the original fee
4. Revisions: • Fee, per submission o Plus, additional fees charged in accordance with (B1) and (B2) above for changes in the disturbed area, zoning action, site conditions, and/or proposed improvements from that indicated on the original plan.	$1,030.00 Tabulated Fee
5. Plan extensions (redate), per request	$1,390.00

Amend Section II Site Development Fees, by modifying Part F (Waiver, Exception, Modification and Exemption Fees) to read as follows:

F. WAIVER, EXCEPTION, MODIFICATION AND EXEMPTION FEES			
Fees in accordance with the table below shall be paid to the County upon submission of any request for a waiver, exception, and modification of the County Ordinances, including but not limited to the Chesapeake Bay Preservation Ordinance (Chapter 118), the Subdivision Ordinance (Chapter 101), the Zoning Ordinance (Chapter 112), Stormwater Management Ordinance (Chapter 124), and the Public Facilities Manual (PFM). The fee assessed shall be based on the Ordinance requirement and the type of plan submitted pursuant to Chapter 101, 112 or 104 of the Code.			
Resource Protection Area (RPA) Applications			
County Ordinance	Fee		
	Pursuant to Chapter 101	Pursuant to Chapter 112	Pursuant to Chapter 104
1. Chapter 118-5-1(a): Exemption	No fee	No fee	No fee
2. *Chapter 118-5-1(b):* Exemption Reconstruction of structures destroyed/damaged by casualty, if such reconstruction is otherwise permitted by law and as long as the structure is reconstructed in the same location and creates no more impervious area than existed with the prior structure.			
3. Chapter 118-5-2: Exemption for public utilities			
4. Chapter 118-5-3(a): Exemption Water wells, site amenities for passive recreation, historic preservation, and archeological activities located within an RPA.			
5. Chapter 118-5-3(b): Exemption for less than 2500 sf. disturbance in RMA.			
6. Chapter 118-5-3(c): Exemption			
7. Chapter 118-5-4(a): Waiver Loss of buildable area in RPA for lots recorded prior to 10/01/89 with no encroachment into the seaward 50 feet of the RPA buffer area.		$710.00	$165.00
8. Chapter 118-5-4(b): Waiver Loss of buildable area in RPA for lots recorded between 10/01/89 and 11/18/03 for houses located within the RPA, with no encroachment into the seaward 50 feet of the RPA buffer area.			
9. Chapter 118-5-5(a): Exception Waiver of the performance criteria for minor additions to principal structures established as of 7/01/93. No accessory structures or uses.			
10. Chapter 118-5-5(b): Exception Waive of the performance criteria for minor additions to principal structures established between 7/01/93 and 11/18/03 and located within the RPA. No accessory structures or uses.			

11. Chapter 118-6-7: Exception Loss of buildable area in RPA for lots recorded prior to 1/18/03 that does not meet the requirements of 118-5-4. A Public Hearing is required. (see note 4)			
12. Chapter 118-6-8: Exception Construction of accessory structures and uses to principal structures that were established as of 7/1/93 and do not result in the creation of 1,000 sq. ft. of additional impervious area within RPA that exceeds 2 percent of the lot area up to maximum 2,500 sq. ft., whichever is greater. A Public Hearing is required. (see note 4)		$710.00	$165.00
13. Chapter 118-6-9: General Exception General exception for construction in an RPA. A Public Hearing is required. (see note 4)	$710.00	$710.00	$165.00

Best Management Practices (BMP)
and
Stormwater Management (SWM) Applications
(see note 5)

County Ordinance	Fee		
	Pursuant to Chapter 101	Pursuant to Chapter 112	Pursuant to Chapter 104
1. PFM 6-0402.4: SWM/BMP Modification: to use an innovative water quality or detention facility	No fee	No fee	No fee
~~*2. Chapter 118-3-2(f)8: BMP Exemption*~~ ~~for maintenance, alteration, use or improvement to an existing structure or use that does not degrade water quality.~~	~~No fee~~	~~No fee~~	~~No fee~~
2. Chapter 124-6-1, Chapter 118-3-2(e) ~~3. Chapter 118-3-2(f)5, PFM 6-0401.2~~: *BMP waiver* for site and subdivision plans	$710.00	$710.00	
3. ~~4.~~ Chapter 124-6-1, Chapter 112-7-808(1), PFM 6-0401. 2 ~~PFM 6-0401.1~~: *BMP waiver* for sites located in the Water Supply Overlay District			
4. PFM 6-0301.2 ~~5. PFM 6-0301.3~~ General SWM Waiver			
5. PFM 6-0303.6 ~~6. PFM 6-0303.8~~ SWM Modification to locate an underground detention facility on a residential development. Must be approved by the Board in conjunction with a rezoning or special exception application.			
6. ~~7.~~ PFM 6-1603.4: SWM Waiver of the dam breach analysis for dams <70 acres, <15 feet high and <25 acre-feet of storage.			
7. ~~8.~~ PFM 6-1600: SWM Waiver of the dam standards.			
8. Chapter 124-6-1, Chapter 118-3-2(e), PFM 6-0401.3 9. ~~Chapter 118-3-2(f)7, PFM 6-0401.2~~: BMP			$165.00

Waiver ~~due to constraints of~~ for a single lot grading plan.			
9. ~~10.~~ Chapter 101-2-2(12), ~~PFM 6-1307, PFM 6-0303.9~~ PFM 6-0303.7: SWM Modification to locate a detention facility on an individual residential lot.	$710.00		

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General Applications	
County Ordinance	Fee
1. General Waiver: Except as noted otherwise in this section, the fee associated with a request for a waiver, exception, or modification of the requirements of the County's Ordinances, including but not limited to the Subdivision Ordinance, Zoning Ordinance, Stormwater Management Ordinance and the Public Facilities Manual.	$710.00
2. *Chapter 101-2-2: Public Street Frontage Waiver* Fee for a waiver of the public street frontage requirement. A Public Hearing is required (see note 4)	$1,995.00
3. *Minor Adjustment of Property Lines:* Fee for a waiver associated with the minor adjustment of property lines.	$253.00
Notes:	
1. CBPO waivers and exception requests submitted under §§ 118-5 and 118-6 require submission of a concurrent Water Quality Impact Assessment (WQIA) and application fee. 2. Water quality fees are not required for plans and permits reviewed under Chapter 104 for which fees have been paid in connection with the review and approval of WQIA's, RPA Boundary Delineations, RMA Boundary Delineations, and CBPO exceptions filed under Chapters 101 and 112 of the Code. 3. In no instance shall the total fee for all waivers, exceptions and modifications associated with a subdivision, site plan or minor site plan exceed $2,845.00. CBPO waivers and exceptions associated with grading plans shall not exceed $710.00. 4. An additional fee of $355.00 shall be paid with the submission of an exception request when a public hearing is required under Article 6 of Chapter 118 of the Code. 5. A single fee of $835.00 shall be paid when combined stormwater and BMP waivers are submitted simultaneously. 6. The cumulative fee for any modifications or waivers requested for the portion of a development in which affordable dwelling units are located, and which relate to typical street sections, sidewalks, and/or curb and gutter, shall not exceed $710.00.	

Case Review of Fees: In the event that, prior to plan approval for review fees or prior to bond release for inspection fees, the payor disputes the fee charged, he may request in writing to the Director a case review of costs incurred by the County. In the case where the review reveals that the fees paid exceed 100% of costs, then a refund of the difference shall be made. If the case review reveals that 100% of the costs incurred by the County exceed the fees paid, then the developer shall pay the difference to the County prior to plan approval for review fees, or prior to bond release for inspection fees.

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Amend Section II Site Development Fees, by adding Part G (Plan and Document Review Fees) to read as follows:

G. PERMITS FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITY FEES	
The following fees shall be paid for permits for Chesapeake Bay Preservation Act land-disturbing activities, General Permits for Discharges of Stormwater from Construction Activities, modification or transfer of coverage under a permit, and permit maintenance.	
(A) General / Stormwater Management - Base Fee The state's portion of the fees for initial coverage under the General Permit for Discharges of Stormwater from Construction Activities shall be paid directly to the state in accordance with §124-3-3.	
1. Chesapeake Bay Preservation Act Land-Disturbing Activity (not subject to General Permit coverage; Sites with land-disturbance acreage equal to or greater than 2,500 square feet and less than 1 acre.	$308
2. All land disturbing activities requiring General Permit coverage for Discharges of Stormwater from Construction Activities.	$308
(B) General / Stormwater Management - Modifications Fees for the modification or transfer of registration statements for the General Permit for Discharges of Stormwater from Construction Activities. If the permit modifications result in changes to stormwater management plans that require additional review by the County, such reviews shall be subject to the fees set out in this part. The fee assessed shall be based on the total disturbed acreage of the site. In addition to the permit modification fee paid to the County, modifications resulting in an increase in total disturbed acreage shall pay to the state the difference in the initial permit fee paid and the permit fee that would have applied for the total disturbed acreage.	
1. Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than one acre and less than five acres)	$200
2. Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than five acres and less than 10 acres)	$250
3. Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 10 acres and less than 50 acres)	$300
4. Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 50 acres and less than 100 acres)	$450
5. Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 100 acres)	$700
(C) General / Stormwater Management – Permit Maintenance Fees for annual permit maintenance including expired state permits that have been administratively continued. With respect to the General Permit for Discharges of Stormwater from Construction Activities, these fees shall apply until the state permit coverage is terminated. Fees for annual permit maintenance will be collected on a schedule consistent with the bond acceptance, approval, extension, reduction, and release process for bonded projects and as part of the process for acceptance and release of conservation deposits for non-bonded projects.	

1. Chesapeake Bay Preservation Act Land-Disturbing Activity (not subject to General Permit coverage; Sites with land-disturbance acreage equal to or greater than 2,500 square feet and less than 1 acre.	$20
2. Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than one acre and less than five acres)	$400
3. Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than five acres and less than 10 acres)	$500
4. Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 10 acres and less than 50 acres)	$650
5. Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 50 acres and less than 100 acres)	$900
6. Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land-disturbance acreage equal to or greater than 100 acres)	$1,400

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State Law and Virginia Administrative Code Citations for Provisions in the Stormwater Management Ordinance

Co. SWM Ordinance		Virginia SWM Law/Regulations	County Requirements that are More Stringent than Virginia SWM Law/Regulations
Article 1	General Provisions	Regs. Parts I & II	
§ 124-1-1.	Title.		
§ 124-1-2.	Authority.[1]	§ 62.1-44.15:27A 4 VAC 50-60-30 § 15.2-2122	
§ 124-1-3.	Enactment.	§ 62.1-44.15:27 4 VAC 50-60-45	
§ 124-1-4.	Purpose and Intent.	§ 62.1-44.15:27 4 VAC 50-60-20 4 VAC 50-60-46	
§ 124-1-5.	Definitions.	4 VAC 50-60-10	
§ 124-1-6.	Areas of Applicability.		
§ 124-1-7.	Exemptions.	§ 62.1-44.15:34C	Proposed exemption for single-family residences more restrictive than the full exemption provided in the Act but within the authority granted by the Act to Chesapeake Bay localities. Proposed exemption for single-family residences is less stringent than current requirements in the County's Chesapeake Bay Preservation Ordinance.
§ 124-1-8.	Right of Entry.	§ 62.1-44.15:39	
§ 124-1-9.	Severability.		

§ 124-1-10.	Applicability of and Conflicts with Other Laws and Regulations.	§ 62.1-44.15.27K § 62.1-44.15.52 4 VAC 50-60-47 4 VAC 50-60-66.A 4 VAC 50-60-104.B 4 VAC 50-60-104.C	
§ 124-1-11.	Time Limits on Applicability of Approved Design Criteria.	4 VAC 50-60-47.1	
§ 124-1-12.	Grandfathering.[2]	4 VAC 50-60-48	
§ 124-1-13.	Chesapeake Bay Preservation Act Land-Disturbing Activity.[3]	4 VAC 50-60-51	
Article 2	General Administrative Criteria for Regulated Land-Disturbing Activities.	Regs. Part IIA	
§ 124-2-1.	Applicability	4 VAC 50-60-53	
§ 124-2-2.	Permit Required.[4]	§ 62.1-44.15:34A 4 VAC 50-60-108.B 4 VAC 50-60-108.D	
§ 124-2-3.	Annual Standards and Specifications for State Agencies, Federal Entities, and Other Specified Entities.	§ 62.44.15:31	
§ 124-2-4.	Security for Performance.	§ 62.44.15:34A 4 VAC 50-60-104.D	
§ 124-2-5.	Monitoring, Reports, Investigations, and Inspections.	§ 62.44.15:37 4 VAC 50-60-114 4 VAC 50-60-1170 Section III para. D	
§ 124-2-6.	Stormwater Pollution Prevention Plan Requirements.	4 VAC 50-60-54	
§ 124-2-7.	Stormwater Management Plans.	4 VAC 50-60-55	

§ 124-2-8.	Pollution Prevention Plans.	4 VAC 50-60-56	
§ 124-2-9.	Stormwater Management Plan Review.	4 VAC 50-60-108	
§ 124-2-10.	Long-term Maintenance of Permanent Stormwater Management Facilities.	§ 62.44.15:27E2 4 VAC 50-60-58 4 VAC 50-60-112	
§ 124-2-11.	Construction Record Drawings.	4 VAC 50-60-55.D 4 VAC 50-60-108.E	
Article 3	Fees.[5]	Regs. Part XIII	
§ 124-3-1.	General	4 VAC 50-60-700 4 VAC 50-60-730 4 VAC 50-60-750 4 VAC 50-60-770 4 VAC 50-60-790	
§ 124-3-2.	Exemptions.	4 VAC 50-60-740	
§ 124-3-3.	Fees for Coverage Under the General Permit for Discharges of Stormwater from Construction Activities and Permits for Chesapeake Bay Preservation Area Land-Disturbing Activities.	4 VAC 50-60-820	
§ 124-3-4.	Fees for the Modification or Transfer of Registration Statements for the general permit for Discharges of Stormwater from Construction Activities.	4 VAC 50-60-825	
§ 124-3-5.	Permit Maintenance Fees	4 VAC 50-60-830	
Article 4	Technical Criteria for Regulated Land-Disturbing activities	Regs. Part IIB	
§ 124-4-1.	Applicability.	4 VAC 50-60-62	

§ 124-4-2.	Water Quality Design Criteria Requirements.[6]	4 VAC 50-60-63	WSPOD requirements may be more stringent than minimum state requirements for redevelopment. These requirements have been in effect since 1980 and are derived from the Zoning Ordinance.
§ 124-4-3.	Water Quality Compliance.	4 VAC 50-60-65	See the PFM for limitations on use of specific BMPs. New BMPs approved by the state also must be approved by the County prior to use.
§ 124-4-4.	Water Quantity.	4 VAC 50-60-66	Proprosed requirements for channel protection and flooding are more stringent than minimum requirements of the Regulations. Forested conditions are assumed for pre-development when utilizing the detention method. An option has been added that if adequate outfall can be demonstrated then existing conditions can be used in to determine detention requirements for the 1-year storm when discharge is to a natural channel. Definition of localized flooding added. Detention requirements added. These requirements are consistent with existing provisions in the PFM.
§ 124-4-5.	Offsite Compliance Options.	§ 62.1-44.15:35 4 VAC 50-60-69	
§ 124-4-6.	Design Storms and Hydrologic Methods.	4 VAC 50-60-72	
§ 124-4-7.	Stormwater Harvesting.	4 VAC 50-60-74	
§ 124-4-8.	Linear Development Projects.	4 VAC 50-60-76	
§ 124-4-9.	Comprehensive Stormwater Management Plans.	4 VAC 50-60-92	
Article 5	Technical Criteria for Regulated Land-Disturbing Activities: Grandfathered Projects and Projects Subject to Time Limits on Applicability of Approved Design Criteria.	Regs. Part IIB	

§ 124-5-1.	Definitions.[7]	4 VAC 50-60-93.1	
§ 124-5-2.	Applicability.[8]	4 VAC 50-60-94	
§ 124-5-3.	General.	4 VAC 50-60-48 4 VAC 50-60-95	
§ 124-5-4.	Water Quality.[9]	4 VAC 50-60-96	
§ 124-5-5.	Stream Channel Erosion.	4 VAC 50-60-97	
§ 124-5-6.	Flooding.	4 VAC 50-60-98	
§ 124-5-7.	Regional (watershed-wide) Stormwater Management Plans.	4 VAC 50-60-99	
Article 6	Exceptions		
§ 124-6-1.	Exceptions	4 VAC 50-60-57 4 VAC 50-60-122	
Article 7	Appeals		
§ 124-7-1.	Right to Administrative Review.	§ 62.1-44.15:44 4 VAC 50-60-118	
§ 124-7-2.	Hearings.	§ 62.1-44.15:45 § 62.1-44.26 4 VAC 50-60-118	
§ 124-7-3.	Appeals of Final Orders.		
Article 8	Violations and Penalties		
§ 124-8-1.	General Provisions.	§ 62.1-44.15:37 § 62.1-44.15:42 § 62.1-44.15:48.D.1 § 62.1-44.15:49 4 VAC 50-60-116.A	
§ 124-8-2.	Criminal Violations and Penalties.	§ 62.1-44.15:48.B § 62.1-44.15:48.C	

§ 124-8-3.	Civil Penalties.	§ 62.1-44.15:48.A § 62.1-44.15:48.D.2 § 62.1-44.15:49 4 VAC 50-60-116.C	
Article 9	Illicit Discharges to the Storm Sewer System and State Waters		
§ 124-9-1.	Purpose.	§ 62.1-44.5 County MS4 Permit County Code Chapters 105 & 106	
§ 124-9-2.	Responsibilities of the Director.		
§ 124-9-3.	Illicit Discharges to the Storm Sewer System and State Waters.	§ 15.2-1200 § 15.2-2109 § 15.2-2122	
§ 124-9-4.	Standards for Inspection of Industrial and Commercial Property Discharging to the County's Storm Sewer System.	County MS4 Permit	
FOOTNOTES			

1) Reference to § 15.2-1200 § 15.2-2109, and § 15.2-2122 added for provisions in Article 9 Illicit Discharges to Storm Sewer System and State Waters.

2) List of grandfathered plans reflects County terminology and includes all plans that the County would consider to be equivalent to the types of plans listed in the regulations.

3) Language added to make it clear that land-disturbing activities that are part of a larger common plan of development or sale equal to or greater than one acre would require a VSMP permit.

4) Language from law modified to reflect that VSMP permits are not required for Chesapeake Bay Act Land Disturbing Activities.

5) Fees incorporated into Appendix Q of the County Code.

6) WSPOD and TMDL requirements have been included in this section.

7) Additional definitions specific to existing Fairfax County requirements added

8) Allowance for compliance with Article 4 in lieu of Article 5 added.

9) State requirements replaced with reference to current PFM requirements. Current PFM requirements and methodology and were approved by the Chesapeake Bay Local Assistance Board as an acceptable alternative to the State’s requirements and methodology.

County Code Section	State Code Section	Violation[1]	Max. Civil Penalty per State Code	SEVERITY OF VIOLATION		
				Serious - Penalty Range	*Moderate - Penalty Range*	*Marginal - Penalty Range*
124-1-13.A	4VAC50-60-51	Chesapeake Bay Preservation Act Land-Disturbing Activity without an approved erosion and sediment control plan	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-1-13.B	4VAC50-60-51	Chesapeake Bay Preservation Act Land-Disturbing Activity without an approved stormwater management plan	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-1-13.D	4VAC50-60-51	Failure to maintain Chesapeake Bay Preservation Act Land-Disturbing Activity stormwater management facility	$32,500	$ 3,900 - $5,900	$ 2,000 - $ 3,900	$ 1,000 - $ 2,000
124-2-2.A	§ 62.1-44.15:34(A)	Land disturbance without a stormwater permit	$32,500	$ 9,800 - $16,300	$ 6,500 - $ 9,800	$ 3,300 - $ 6,500
124-2-2.A.1	§ 62.1-44.15:34(A)	No state permit registration	$32,500	$ 9,800 - $16,300	$ 6,500 - $ 9,800	$ 3,300 - $ 6,500
124-2-5.A	§ 62.1-44.15:37(A)	Failure to conduct required inspections	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-5.C	§ 62.1-44.15:40	Incomplete, improper, or missed inspections	$32,500	$ 1,300 - $2,600	$ 700 - $ 1,300	$ 400 - $ 700
124-2-6.A	4VAC50-60-54	No SWPPP	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-2-6.A	4VAC50-60-54	Incomplete SWPPP	$32,500	$ 3,900 - $5,900	$ 2,000 - $ 3,900	$ 1,000 - $ 2,000
124-2-6.B	4VAC50-60-54	No approved sediment and erosion control plan	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-2-6.C	4VAC50-60-54	No approved stormwater management plan	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-2-6.D	4VAC50-60-54	No approved pollution prevention plan	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-2-6.E	4VAC50-60-54	Failure to implement TMDL control measures required by permit	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-2-6.F	4VAC50-60-54	Failure to initiate stabilization measures as soon as practicable	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-2-6.G	4VAC50-60-54	Failure to update SWPPP	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-6.G	4VAC50-60-54	SWPPP not available for review	$32,500	$ 1,300 - $2,600	$ 700 - $ 1,300	$ 400 - $ 700
124-2-7.A	4VAC50-60-55	Failure to install stormwater BMPs or erosion and sediment controls	$32,500	$ 7,800 - $10,400	$ 5,200 - $ 7,800	$ 2,600 - $ 5,200
124-2-7.A	4VAC50-60-55	Stormwater BMPs or erosion and sediment controls improperly installed or maintained	$32,500	$ 3,900 - $5,900	$ 2,000 - $ 3,900	$ 1,000 - $ 2,000
124-2-8.A	4VAC50-60-56	Failure to properly install or maintain pollution prevention measures	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-2-8.A	4VAC50-60-56	Failure to update pollution prevention plan	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-8.A.1	4VAC50-60-56	Operational Deficiency: failure to implement measures to minimize discharge of pollutants from wash waters	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-8.A.2	4VAC50-60-56	Operational Deficiency: failure to implement measures to minimize exposure of potential pollutants to precipitation and/or stormwater	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-8.A.3	4VAC50-60-56	Operational Deficiency: failure to implement measures to minimize discharge of from spills or leaks, or adequate spill response procedures	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-8.B.1	4VAC50-60-56	Operational Deficiency: failure to implement measures to prohibit discharge of wastewater from washout of concrete	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-8.B.2	4VAC50-60-56	Operational Deficiency: failure to implement measures to prohibit discharge of wastewater from cleanout of stucco, paint, form release oils, curing compounds and other construction materials	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-8.B.3	4VAC50-60-56	Operational Deficiency: failure to implement measures to prohibit discharge of wastewater from fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600

Attachment J

County Code Section	State Code Section	Violation[1]	Max. Civil Penalty per State Code	SEVERITY OF VIOLATION		
				Serious - Penalty Range	*Moderate - Penalty Range*	*Marginal - Penalty Range*
124-2-8.B.4	4VAC50-60-56	Operational Deficiency: failure to implement measures to prohibit discharge of soaps or solvents used in vehicle and equipment washing	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-8.C	4VAC50-60-56	Operational Deficiency: failure to implement measures to prohibit discharges from dewatering activities	$32,500	$ 7,800 - $10,400	$ 2,600 - $ 7,800	$ 1,300 - $ 2,600
124-2-10.A.4	4VAC50-60-112	Incomplete or missing annual inspection and maintenance reports required by an approved Private Maintenance Agreement	$32,500	$ 3,900 - $5,900	$ 2,000 - $ 3,900	$ 1,000 - $ 2,000
124-3-1.D	4VAC50-60-750	Failure to pay annual VSMP permit maintenance fee	$32,500	$ 3,900 - $5,900	$ 2,000 - $ 3,900	$ 1,000 - $ 2,000
124-8-1.A	4VAC50-60-1170	Discharges not in compliance with the requirements of Section 4VAC-50-60-1170 of the General Permit	$32,500	$ 9,800 - $16,300	$ 6,500 - $ 9,800	$ 3,300 - $ 6,500
124-8-1.A	4VAC50-60-1170	Failure to comply with the conditions of a permit	$32,500	$ 9,800 - $16,300	$ 6,500 - $ 9,800	$ 3,300 - $ 6,500
124-8-1.B	§ 62.1-44.15:48	Failure to comply with a notice of violation	$32,500	$13,000 - $16,300	$ 6,500 - $13,000	$ 3,300 - $ 6,500
124-8-1.F	§ 62.1-44.15:48	Failure to comply with a stop work order, special order, or emergency order	$32,500	$13,000 - $16,300	$ 9,800 - $13,000	$ 4,900 - $ 9,800
124-8-1.G	§ 62.1-44.15:48	Failing, neglecting, or refusing to obey any injunction	$32,500	$13,000 - $16,300	$ 9,800 - $13,000	$ 4,900 - $ 9,800
124-9-3.A	§ 62.1-44.5	Discharge or deposit of non-stormwater and/or prohibited substances into state waters	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-9-3.B	§ 62.1-44.5	Discharge or deposit of non-stormwater and/or prohibited substances into the MS4	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300
124-9-3.C	§ 62.1-44.5	Illicit connection to the MS4	$32,500	$ 9,800 - $16,300	$ 3,300 - $ 9,800	$ 1,700 - $ 3,300

F O O T N O T E S:

1. Each day of violation of each requirement shall constitute a separate offense (Fairfax County Code Section 124-8-3).

Board Agenda Item
September 10, 2013

ADMINISTRATIVE - 5

Approval to Change a Portion of the Proposed Street Name from Lakeford Drive to Fairview Park Drive (Providence District)

ISSUE:
Board approval of a street name change in the Official County Digital Property Map and the Master Addressing Repository for a portion of Lakeford Drive, from the intersection with Lee Highway, to Fairview Park Drive, southwest of the intersection with New Providence, on Tax Map #049-4.

RECOMMENDATION:
The County Executive recommends that the Board approve the street name change to Fairview Park Drive effective 30 days following Board approval, in accordance with Section 102-1-9 of *The Code of the County of Fairfax, Virginia.*

TIMING:
Routine.

BACKGROUND:
The Site and Addressing Center has received a request from Geographic Information Systems (GIS), to change a portion of Lakeford Drive, from the intersection with Lee Highway, to Fairview Park Drive, southwest of the intersection with New Providence because originally this should have been a continuous street. There are no homes or businesses along this stretch of roadway.

FISCAL IMPACT:
None.

ENCLOSED DOCUMENTS:
Attachment I – Vicinity Map

STAFF:
Robert A. Stalzer, Deputy County Executive
James Patteson, Director, Department of Public Works and Environmental Services (DPWES)
Michelle Brickner, Deputy Director, DPWES, Land Development Services

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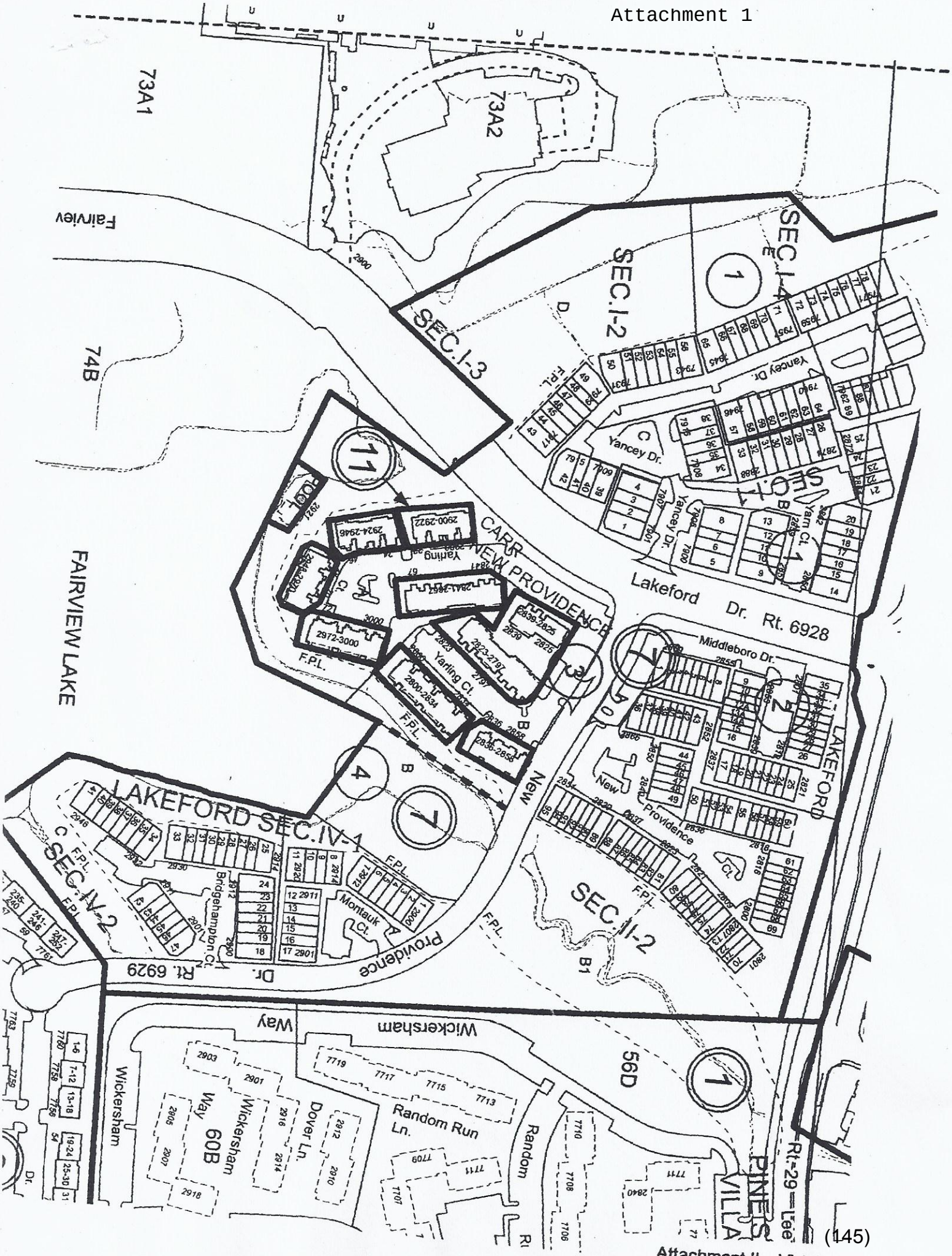

Attachment II – Vicinity Map

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Board Agenda Item
September 10, 2013

ADMINISTRATIVE - 6

Approval of a Street Name Change from Cane Hill Way to Caleb Court (Lee District)

ISSUE:
Board approval of a street name change in the Official County Digital Property Map and the Master Addressing Repository from Cane Hill Way to Caleb Court on Tax Map #100-1.

RECOMMENDATION:
The County Executive recommends that the Board approve the street name change to Caleb Court effective 30 days following Board approval, in accordance with Section 102-1-9 of *The Code of the County of Fairfax, Virginia.*

TIMING:
Routine.

BACKGROUND:
The Site and Addressing Center has received a request from Kingstowne Residential Owners Corporation Board of Trustees to change the street name from Cane Hill Way to Caleb Court. There are no homes or businesses along this stretch of roadway.

FISCAL IMPACT:
None

ENCLOSED DOCUMENTS:
Attachment I – Letter from Kingstowne Residential Owners Corporation Board of Trustees, dated July 19, 2013
Attachment II - Vicinity Map

STAFF:
Robert A. Stalzer, Deputy County Executive
James Patteson, Director, Department of Public Works and Environmental Services (DPWES)
Michelle Brickner, Director, Land Development Services, DPWES

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Kingstowne

July 19, 2013

Joan Clark, Staff Assistant
Supervisor Jeffrey C. McKay
6121 Franconia Road
Alexandria, VA 22310

Dear Ms. Clark:

At the June 10th meeting of the Kingstowne Residential Owners Corporation Board of Trustees, the issue of a street name change was introduced from members of a neighborhood. The issue was regarding the fact that emergency vehicles have had difficulty locating Caleb Court because of Cane Hill Way which serves as the entry way to Caleb Court. Cane Hill Way has no houses on it and no mailing addresses. Having a different name for such a short road has been confusing, and the resident now feel that is has proven dangerous. Residents of this neighborhood are requesting that Cane Hill Way be renamed so that both streets are named Caleb Court. A petition has been signed by residents of the neighborhood in favor of the action.

The Board of Trustees has reviewed and approved this request. We are requesting your assistance in the process of completing this street name change. Please let me know if further information is needed.

Sincerely,

Ronda DeSplinter

Ronda DeSplinter, LSM, PCAM
General Manager, Kingstowne Residential Owners Corporation
6090 Kingstowne Village Parkway
Kingstowne, VA 22315
www.kingstowne.org

Enclosures: Devonshire Neighborhood Petition Count
Devonshire Neighborhood Map

ATTACHMENT I
Kingstowne Residential Owners Corporation Board of Trustees Request

Kingstowne Residential Owner's Corporation • 6090 Kingstowne Village Parkway • Kingstowne, VA 22315 • 703.922.9477
Fax 703.922.2713

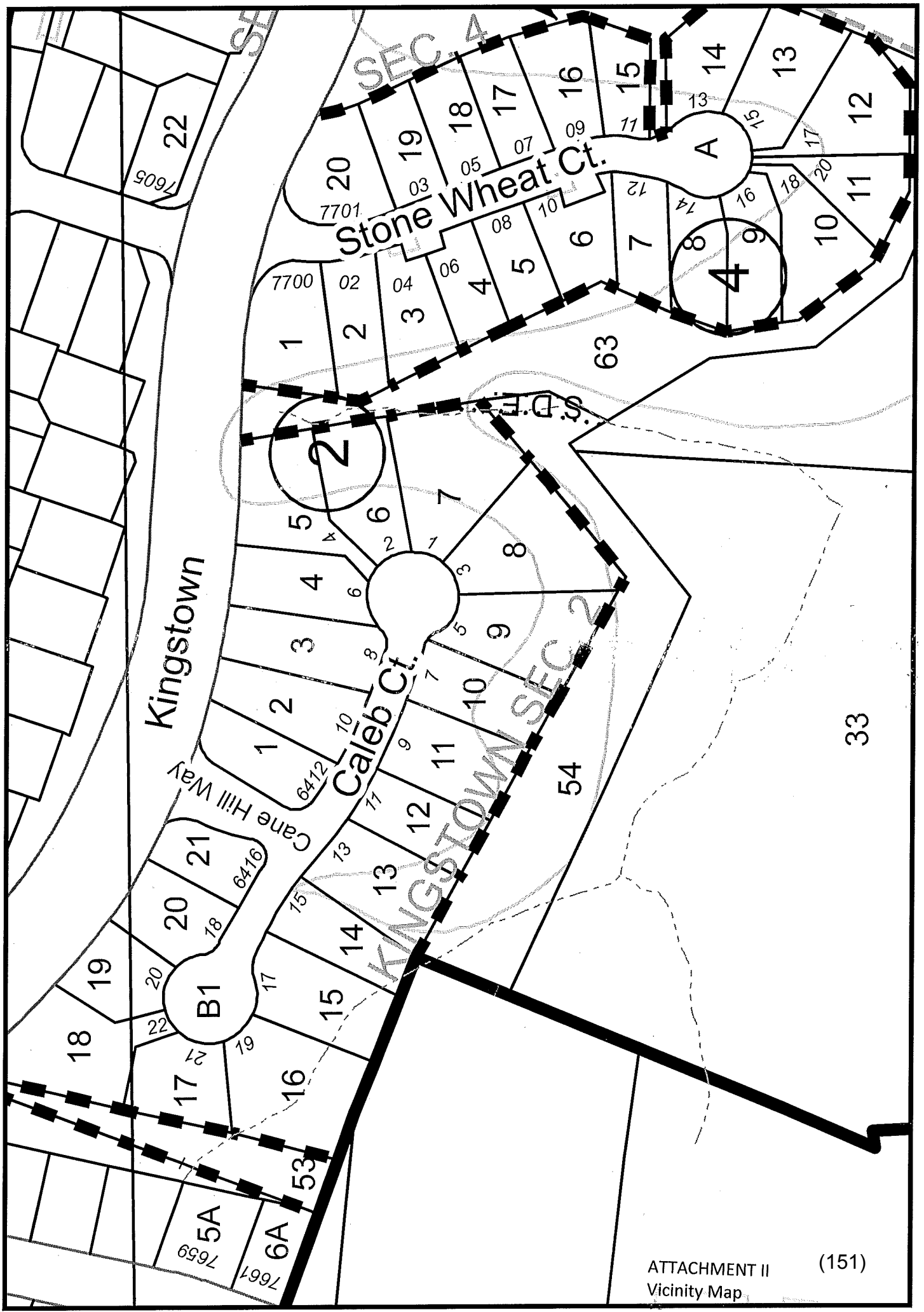
Dear Devonshire Neighbors:

It has brought to our attention that Cane Hill Way, the little street that is between Kingstowne Village Parkway or forgotten by many. There was an incident few months ago where the emergency vehicles passed our neigh Court. Some of the Devonshire neighbors proposed that we change "Cane Hill Way" and make it part of "Cale Kingstowne that it can be easily done but they want the neighborhood's view on this.

Below is a table to allow you to express your opinion on the street name change. I will submit the results to Ki Please send me your vote and your comments by Friday, May 31st.
Thank you for your attention.
Anne

Yes Change	=	Change "Cane Hill Way" to "Caleb Court"
No Change	=	Do NOT change "Cane Hill Way" street name

House #	Last Name	Yes Change	No Change	Don't Care	Comments	Date replied
6401	Ohlson	X				25-May
6402	Marquez	X				26-May
6403	Malone/Beatty	X				25-May
6404	Head	X				25-May
6405	Ratner	X				25-May
6406	Osborne	X				26-May
6407	Hopkins	X				26-May
6408	Trapani/Kong	X				24-May
6409	Prince	X				25-May
6410	Farenfield					26-May
	Howard	X				
6411	Parnell	X				25-May
6412	Lettieri					26-May
	Osborn	X				
6413	Regaya	X				26-May
6414	Does not exist					
6415	Constable/Darling	X				25-May
6416	Grant	X				25-May
6417	Venkatesh/Dhayalan	X				25-May
6418	Goldenberg	X				24-May
6419	Tiller	X				24-May
6420	Amoah	DO NOT HAVE CONTACT INFORMATION				
6421	West	X				27-May
6422	Eyre	X				25-May



ATTACHMENT II
Vicinity Map

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Board Agenda Item
September 10, 2013

ADMINISTRATIVE – 7

Authorization to Advertise Proposed Amendments to Chapter 6 (Storm Drainage) and Chapter 12 (Vegetation Preservation and Planting) of the Public Facilities Manual (PFM) Re: Water Quality Controls, Adequate Outfall, Detention, Maintenance of Stormwater Management Facilities, and Replanting of Disturbed Areas

ISSUE:
Board of Supervisors' authorization to advertise public hearings on proposed amendments to Chapter 6 (Storm Drainage) and Chapter 12 (Vegetation Preservation and Planting) of the Public Facilities Manual (PFM) related to water quality controls, adequate outfall, detention, maintenance of stormwater management facilities, and replanting of disturbed areas. The proposed amendments are necessary to implement the proposed Stormwater Management Ordinance and the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.).

RECOMMENDATION:
The County Executive recommends that the Board authorize the advertisement of the proposed amendments as set forth in the Staff Report dated September 10, 2013.

TIMING:
Board action is requested on September 10, 2013, to provide sufficient time to advertise public hearings on October 9, 2013, before the Planning Commission and on December 3, 2013, before the Board.

BACKGROUND:
The proposed amendments to the PFM are a part of the implementation of the proposed County Stormwater Management Ordinance and the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.). In a separate action, the Board is being asked to adopt Chapter 124 (Stormwater Management Ordinance), repeal Chapters 105 (Pollution of State Waters) and 106 (Storm Drainage), and adopt amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance) and 118 (Chesapeake Bay Preservation Ordinance) of *The Code of the County of Fairfax, Virginia*. The new ordinance and proposed County Code amendments implement the Virginia Stormwater Management Act (Va. Code Ann. § 62.1-44.15:24, et seq.) and Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.).

The Virginia Soil and Water Conservation Board (SWCB) adopted final amendments to the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.) on May 24, 2011, with an effective date of September 13, 2011. An earlier version of the amended regulations was adopted in 2010 but suspended by the SWCB prior to becoming effective because of issues raised by localities and the public. During the 2012 and 2013 legislative sessions, the General Assembly adopted amendments to the Code of Virginia (Chapters 785 & 819 of the 2012 Acts of Assembly and Chapter

756 of the 2013 Acts of Assembly) transferring regulatory and enforcement authority for the Erosion and Sediment Control Act, the Stormwater Management Act, and the Chesapeake Bay Preservation Act to the State Water Control Board and the Department of Environmental Quality (DEQ). During the 2013 legislative session, the General Assembly also adopted a separate amendment to the Stormwater Management Act (Va. Code Ann. § 62.1-44.15:33 (2013)) that constrains localities' ability to adopt more stringent requirements than the minimum requirements of the regulations. As a result of the amendment passed during the 2013 legislative session, the County will need to justify any more stringent requirements unless the requirements were in force prior to January 1, 2013. Additional amendments to the VSMP Permit Regulations, the Virginia Erosion and Sediment Control Regulations (4 VAC 50-30 et seq.) and the Chesapeake Bay Preservation Area Designation and Management Regulations (4 VAC 50-90 et seq.) were adopted by the SWCB on September 28, 2012, with an effective date of November 21, 2012. Staff anticipates that the regulations will need to be republished in 2013 because of the transfer of program oversight to the State Water Control Board and DEQ.

The adoption of a local stormwater management ordinance by Fairfax County is mandatory under the Virginia Stormwater Management Act (Act). The Act gives localities until June 13, 2013, to adopt local ordinances to comply with the regulations. However, pursuant to the Act, the SWCB granted the County an extension to June 13, 2014. Adoption of amendments to the PFM is necessary at this time to implement the Stormwater Management Ordinance and the regulations. After the County has amended its ordinances and the PFM, the State Water Control Board and DEQ will review the ordinances and PFM for consistency with state law and regulations. The County is required to submit the new and revised ordinances, revised PFM, a funding and staffing plan, and associated policies and procedures for administering the stormwater management program to DEQ by December 15, 2013. The final adopted ordinances and PFM must be submitted to DEQ by April 1, 2014.

Chapter 6 of the PFM currently includes the County's requirements for water quality control, water quantity control (adequate outfall), and BMPs. The requirements for water quality control and water quantity control are being removed from the PFM and consolidated in the new Stormwater Management Ordinance. The requirements for design and construction of BMPs are more technical in nature and will remain in the PFM. The VSMP Permit Regulations list fifteen specific Best Management Practices (BMPs) that are approved for use statewide. The State also has published design standards for these BMPs. Any additional BMPs not on this list must be approved by DEQ before they may be used for credit towards meeting the water quality control requirements of the regulations. The regulations allow localities to establish limitations on the use of specific BMPs with written justification provided to DEQ. The amendment to the Stormwater Management Act, Va. Code Ann. § 62.1-44.15:33, limits localities' ability to adopt more stringent requirements than the minimum requirements of the regulations and the County's ability to exercise the authority provided in the regulations to establish limitations on the use of specific BMPs as follows:

C. Localities shall not prohibit or otherwise limit the use of any best management practice (BMP) approved for use by the Director or the Board except as follows:

1. When the Director or the Board approves the use of any BMP in accordance with its stated conditions, the locality serving as a VSMP authority shall have authority to preclude the onsite use of the approved BMP, or to require more stringent conditions upon its use, for a specific land-disturbing project based on a review of the stormwater management plan and project site conditions. Such limitations shall be based on site-specific concerns. Any project or site-specific determination purportedly authorized pursuant to this subsection may be appealed to the Department and the Department shall issue a written determination regarding compliance with this section to the requesting party within 90 days of submission. Any such determination, or a failure by the Department to make any such determination within the 90-day period, may be appealed to the Board.

2. When a locality is seeking to uniformly preclude jurisdiction-wide or otherwise limit geographically the use of a BMP approved by the Director or Board, or to apply more stringent conditions to the use of a BMP approved by the Director or Board, upon the request of an affected landowner or his agent submitted to the Department, with a copy submitted to the locality, within 90 days after adoption, such authorizing ordinances, design manuals, policies, or guidance documents developed by the locality that set forth the BMP use policy shall be provided to the Department in such manner as may be prescribed by the Department that includes a written justification and explanation as to why such more stringent limitation or conditions are determined to be necessary. The Department shall review all supporting materials provided by the locality to determine whether the requirements of this section have been met and that any determination made by the locality pursuant to this section is reasonable under the circumstances. The Department shall issue its determination to the locality in writing within 90 days of submission. Such a determination, or a failure by the Department to make such a determination within the 90-day period, may be appealed to the Board.

D. Based on a determination made in accordance with subsection B or C, any ordinance or other requirement enacted or established by a locality that is found to not comply with this section shall be null and void, replaced with state minimum standards, and remanded to the locality for revision to ensure compliance with this section. Any such ordinance or other requirement that has been proposed but neither enacted nor established shall be remanded to the locality for revision to ensure compliance with this section.

E. Any provisions of a local stormwater management program in existence before January 1, 2013, that contains more stringent provisions than this article shall be exempt from the requirements of this section. However, such provisions shall be reported to the Board at the time of the locality's VSMP approval package. (Va. Code Ann. § 62.1-44.15:33)

Of the fifteen BMPs listed in the VSMP Permit Regulations, “rooftop disconnection” is the only BMP not currently available for use in Fairfax County in some form, either by inclusion in the PFM or various DPWES-LDS Technical Memoranda related to the use of innovative BMPs or with site-specific approval (rainwater harvesting). The restrictions proposed for the BMPs listed in the PFM are all based on current restrictions. Therefore, staff believes that the restrictions satisfy the requirement of § 62.1-44.15:33(E) as being in place prior to January 1, 2013.

The proposed PFM amendments have been recommended for approval by the Engineering Standards Review Committee.

PROPOSED AMENDMENTS:

1) The extent of review of downstream drainage systems to determine adequacy is being replaced by a reference to the extent of review required under the Stormwater Management Ordinance. The extent of review required under the Stormwater Management Ordinance is the State minimum requirement, which extends farther downstream than the current requirement in the PFM.

2) The use of the critical shear stress method in determining adequacy is being eliminated. This method has not been used for a number of years and currently is not approved for use by the State. However, it still could be used at some future time under a provision in the PFM that allows the Director to consider alternative methods to the detention method that achieve an equivalent degree of stream protection and that are subsequently approved by the State.

3) The detention method is being removed from the PFM and relocated to the Stormwater Management Ordinance in a slightly modified version. Use of the detention method eliminates the need for a review of the downstream drainage system (outfall) to determine adequacy.

4) Water quality control criteria related to the Chesapeake Bay Preservation Ordinance is being removed from the PFM. At the State level, compliance with the water quality control criteria in the VSMP Permit Regulations is deemed to meet the criteria in the Chesapeake Bay Preservation Area Designation and Management Regulations. Because the new Stormwater Management Ordinance includes these requirements it is not necessary to have them duplicated in the PFM.

5) The table of assigned phosphorus removal efficiencies has been deleted. The state has developed design specifications and total phosphorus removal efficiencies for fifteen BMPs (available on the Virginia Stormwater BMP Clearinghouse web site) which must be used by localities. The section covering tree box filters, which are a type of bioretention facility, has been deleted; it is adequately covered by the section on bioretention and the Virginia design specifications. A separate section for each type of BMP is included in the PFM. BMPs must be designed in accordance with the state design specifications except as supplemented and modified in the PFM. The basic

sizing criteria and other essential design criteria developed by the State for all fifteen BMPs is used to assure that the state's assigned total phosphorus removal is not compromised. Whenever any provision of the PFM imposes a different standard than the state design specifications, the PFM standard shall be followed. The County's dam standards, soils testing, and maintenance provisions of the PFM must be adhered to for all designs. Restrictions on the use and location for each BMP are included. The restrictions are based on general applicability for different types of development, site constraints, inspection and maintenance needs, and the potential burden on homeowners.

6) Nineteen plates related to design standards and criteria for BMPs, standard BMP plan views, the critical shear stress method, and example problems are being deleted. Standard BMP plan views are included in the online State BMP specifications.

7) Two alternatives, previously discussed with the Board, are presented for maintenance of stormwater management facilities in residential areas. Under the first alternative, which is a continuation of the current policy, the County will maintain dry ponds, extended detention ponds, and regional wet ponds. All other types of BMPs will be maintained by Homeowner Associations (HOAs) or property owners. Under the second alternative, the County will maintain the following stormwater management facilities constructed after adoption of the proposed amendments:

- Sheet flow to a vegetated filter or conserved open space
- Infiltration practices
- Bioretention
- Vegetated swales
- Wet swales (linear wetlands)
- Filtering practices (e.g. sand filters)
- Constructed wetlands
- Wet ponds
- Extended detention ponds
- Manufactured (proprietary) BMPs

Under the second alternative, the HOAs or property owners will maintain the following:

- Rooftop disconnections
- Soil compost amendment
- Reforestation
- Vegetated roof
- Rainwater harvesting
- Permeable pavement

Under the second alternative, involving expanded County maintenance of residential BMPs, the County would be responsible for functional maintenance of the facilities and the property owners would be responsible for aesthetic maintenance. In addition to

maintaining new residential BMPs, the Board may also want to consider development of a conversion program to allow property owners to turn over eligible existing facilities to the County for maintenance. The transfer of the BMPs to the County for maintenance would be optional for the BMP owners. Prior to transfer, the BMPs would need to be brought up to an acceptable condition and easements dedicated to the County. Some advantages of County maintenance are:

- Greater assurance that the BMPs are functional, resulting in greater control of MS4 permit compliance terms
- Reduction in the potential need for enforcement actions against homeowners and associated costs and staff time
- Reduction in the perceived inequity of owners of privately maintained BMPs versus owners of publicly maintained BMPs and residents of older communities without BMPs
- County may be able to trade or pursue more cost effective solutions in the future with greater control of the countywide system

Some disadvantages of County maintenance are:

- County will be working on private property within easements which may be perceived as intrusive by the owners
- Costs for regular inspections and most maintenance assumed by the County
- Costs would be passed on to all County property owners via the countywide stormwater service district tax which might be perceived as inequitable by owners who currently don't have BMPs to maintain
- Conversion program would be needed to transfer over 1,000 existing privately maintained residential BMP facilities to the County inventory

REGULATORY IMPACT:
The proposed Stormwater Management Ordinance is being adopted as required by the Virginia Stormwater Management Act and Regulations. Requirements for water quality and quantity control, currently located in the Public Facilities Manual and Chesapeake Bay Preservation Ordinance, are being consolidated in the new ordinance. Existing prohibitions related to pollution of state waters and discharges into County storm drains in Chapters 105 and 106 of the County Code are being expanded and consolidated in the new ordinance. The new ordinance establishes more stringent requirements for water quality controls than those currently contained in the PFM and Chesapeake Bay Preservation Ordinance. These requirements meet but do not exceed the minimum requirements of the Virginia Stormwater Management Act and Regulations. The new ordinance retains existing requirements currently in the PFM, with minor modifications, for water quantity control related to stream protection and flooding. These requirements exceed the minimum requirements of the Virginia Stormwater Management Act and Regulations. The new ordinance creates a requirement for a local stormwater permit and a consolidated stormwater and erosion and sediment control permit as required by the Virginia Stormwater Management Act and Regulations. Under the new ordinance and in accordance with the Virginia Stormwater Management Act and Regulations, the

County will be responsible for plan review and inspections for the state for VSMP permits and enforcement of VSMP permit violations. Under the Virginia Stormwater Management Act and Regulations, the threshold for the requirement to obtain a state permit has been increased from 2,500 square feet to one acre making it less stringent than current requirements.

In general, the new water quality control requirements will be more difficult to achieve for all development including County projects and result in the construction of more, albeit smaller, controls distributed throughout the project site. This impact is mitigated for land disturbances on existing residential lots by the exception provisions contained in the new ordinance and the option to purchase water quality control credits through a broker system set up by the state. It is unknown at this time if sufficient credits will be available to meet future demand for credits. The regulatory impacts also are mitigated by the provisions set forth in the ordinance for land-disturbing activities that have coverage under a state VSMP permit prior to July 1, 2014, and proposed land-disturbing activities that have County approvals prior to July 1, 2012, both of which are derived directly from the Virginia Stormwater Management Regulations. Projects that have coverage under a state VSMP permit are not subject to the new technical criteria in the proposed Stormwater Management Ordinance provided that construction is completed by July 1, 2024. Grandfathered projects are not subject to the new technical criteria provided that construction is completed by July 1, 2019. The types of projects grandfathered are currently valid proffered rezonings or P district rezonings or other rezonings with a plan of development, special exceptions, special permits, variances, preliminary or final subdivision plats, subdivision construction plans, preliminary or final site plans, or grading plans. In addition, County projects for which funding was obligated prior to July 1, 2012, are grandfathered until July 1, 2019, and County projects for which governmental bonding or public debt financing was issued prior to July 1, 2012, are grandfathered indefinitely.

The proposed PFM amendments are necessary to implement the new Stormwater Management Ordinance and the VSMP Permit Regulations. Requirements for water quality and quantity control, currently located in the PFM and Chesapeake Bay Preservation Ordinance, are being consolidated in the new ordinance. The primary regulatory impact of the PFM amendments is related to the limitations on use and location of BMPs and, if approved, the maintenance of additional types of BMPs in residential areas by the County.

With respect to the limitations on use and location of BMPs, the limitations are less restrictive than current requirements but more restrictive than what is permitted under the Regulations. Currently, all BMPs must be located on outlots in new residential subdivisions except that some types of BMPs may be located on lots in residential subdivisions creating three or fewer lots with approval by the Director and on existing residential lots and BMPs may not be located in the VDOT right-of-way. Under the proposed amendments, the limit of three lots is being increased to seven lots and some BMPs may be located in the VDOT right-of-way subject to approval by VDOT. In order for BMPs to be located in the right-of-way, an agreement between the County and

VDOT, similar to the one currently in place for the Tysons Corner Urban Center, will have to be developed. Staff has begun talks with VDOT but it may take some time to negotiate an acceptable agreement(s).

FISCAL IMPACT:
There is a need for two Code Compliance Investigator positions in FY 2014. Based on the actual increase in constructed BMPs above current ordinance BMP construction levels coupled with increased enforcement efforts, additional positions may need to be requested in future budget submissions. It is also anticipated that additional positions in the County Attorney's office may be needed in the future for enforcement activities. The need for additional maintenance staff will need to be reevaluated if the Board determines that the County should take over maintenance of most new BMP facilities. With respect to plan review and inspection activities, no new staff is being requested at this time.

It is difficult to assess what fiscal impact the addition of new BMP types and changes to the BMP design standards will have on the County, developers, or property owners. The primary fiscal impact is due to the increase in the number of BMPs required to meet the new water quality control requirements in the Stormwater Management Ordinance rather than the design standards for those BMPs. The increase in the number of BMPs per project would increase both design and construction costs.

If the number of BMP types eligible for public maintenance is expanded, the annualized cost for County maintenance of new BMPs added to the inventory of County maintained facilities is estimated to be approximately $0.6 million versus approximately $0.25 million under the current system. The costs to the County would increase by this amount every year. In addition, there would be additional costs if the County instituted a conversion program for existing privately maintained residential BMPs to be brought up to acceptable condition and turned over to the County. If all of the existing privately maintained residential BMPs were turned over to the County for maintenance (this likely would take many years), there would be an additional annualized cost estimated at $3.5 million. Any staffing costs associated with the conversion program would be offset by less enforcement activity. Therefore, the fiscal impact of a change to the types of BMPs maintained by the County would be approximately $3.5 million increasing at a rate of $0.6 million per year from current Stormwater Program funding.

ENCLOSED DOCUMENTS:
Attachment 1 - Staff Report Dated September 10, 2013

STAFF:
Robert A. Stalzer, Deputy County Executive
James Patteson, Director, Department of Public Works and Environmental Services (DPWES)
Michelle A. Brickner, Deputy Director, DPWES
Randy Bartlett, Deputy Director, DPWES

Attachment 1

DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES

STAFF REPORT

- [ ] PROPOSED COUNTY CODE AMENDMENT
- [√] PROPOSED PFM AMENDMENT
- [ ] APPEAL OF DECISION
- [ ] WAIVER REQUEST

Proposed Amendments to Chapter 6 (Storm Drainage) and Chapter 12 (Vegetation Preservation and Planting) of the Public Facilities Manual Re: Water Quality Controls, Adequate Outfall, Detention, Maintenance of Stormwater Management Facilities, and Replanting of Disturbed Areas.

Authorization to Advertise	September 10, 2013
Planning Commission Hearing	October 9, 2013
Board of Supervisors Hearing	December 3, 2013
Prepared by:	Code Development and Compliance Division JAF (703) 324-1780 September 10, 2013

STAFF REPORT

A. Issues:

Proposed amendments to Chapter 6 (Storm Drainage) and Chapter 12 (Vegetation Preservation and Planting) of the Public Facilities Manual (PFM) related to water quality controls, adequate outfall, detention, maintenance of stormwater management facilities, and replanting of disturbed areas. The proposed amendments are necessary to implement the proposed Stormwater Management Ordinance and the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.).

B. Recommended Action:

Staff recommends that the Board of Supervisors (the Board) adopt the proposed amendments to Chapter 6 (Storm Drainage) and Chapter 12 (Vegetation Preservation and Planting) of the Public Facilities Manual (PFM). Staff further recommends that the Board authorize staff to review plans, at the request of an applicant, based on the adopted amendments in advance of the effective date.

C. Timing:

Board of Supervisors authorization to advertise – September 10, 2013

Planning Commission Public Hearing – October 9, 2013

Board of Supervisors Public Hearing – December 3, 2013

Effective Date – July 1, 2014 at 12:01 a.m.

D. Source:

Department of Public Works and Environmental Services (DPWES)

E. Coordination:

The proposed amendments have been prepared by the Department of Public Works and Environmental Services and coordinated with the Office of the County Attorney. The proposed amendments to the PFM have been recommended for approval by the Engineering Standards Review Committee.

F. Background:

The proposed amendments to the PFM are a part of the implementation of the proposed County Stormwater Management Ordinance and the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.). In a separate action, the Board is being asked to adopt Chapter 124 (Stormwater Management Ordinance), repeal Chapters 105 (Pollution of State Waters) and 106

(Storm Drainage), and adopt amendments to Chapters 101 (Subdivision Ordinance), 104 (Erosion and Sedimentation Control), 112 (Zoning Ordinance) and 118 (Chesapeake Bay Preservation Ordinance) of The Code of the County of Fairfax, Virginia. The new ordinance and proposed County Code amendments implement the Virginia Stormwater Management Act (Va. Code Ann. § 62.1-44.15:24, et seq.) and Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.).

The Virginia Soil and Water Conservation Board (SWCB) adopted final amendments to the Virginia Stormwater Management Program (VSMP) Permit Regulations (4 VAC 50-60 et seq.) on May 24, 2011, with an effective date of September 13, 2011. An earlier version of the amended regulations was adopted in 2010 but suspended by the SWCB prior to becoming effective because of issues raised by localities and the public. During the 2012 and 2013 legislative sessions, the General Assembly adopted amendments to the Code of Virginia (Chapters 785 & 819 of the 2012 Acts of Assembly and Chapter 756 of the 2013 Acts of Assembly) transferring regulatory and enforcement authority for the Erosion and Sediment Control Act, the Stormwater Management Act, and the Chesapeake Bay Preservation Act to the State Water Control Board and the Department of Environmental Quality (DEQ). During the 2013 legislative session, the General Assembly also adopted a separate amendment to the Stormwater Management Act (Va. Code Ann. § 62.1-44.15:33 (2013)) that constrains localities' ability to adopt more stringent requirements than the minimum requirements of the regulations. As a result of the amendment passed during the 2013 legislative session, the County will need to justify any more stringent requirements unless the requirements were in force prior to January 1, 2013. Additional amendments to the VSMP Permit Regulations, the Virginia Erosion and Sediment Control Regulations (4 VAC 50-30 et seq.) and the Chesapeake Bay Preservation Area Designation and Management Regulations (4 VAC 50-90 et seq.) were adopted by the SWCB on September 28, 2012, with an effective date of November 21, 2012. Staff anticipates that the regulations will need to be republished in 2013 because of the transfer of program oversight to the State Water Control Board and DEQ.

The adoption of a local stormwater management ordinance by Fairfax County is mandatory under the Virginia Stormwater Management Act (Act). The Act gives localities until June 13, 2013, to adopt local ordinances to comply with the regulations. However, pursuant to the Act, the SWCB granted the County an extension to June 13, 2014. Adoption of amendments to the PFM is necessary at this time to implement the Stormwater Management Ordinance and the regulations. After the County has amended its ordinances and the PFM, the State Water Control Board and DEQ will review the ordinances and PFM for consistency with state law and regulations. The County is required to submit the new and revised ordinances, revised PFM, a funding and staffing plan, and associated policies and procedures for administering the stormwater management program to DEQ by December 15, 2013. The final adopted ordinances and PFM must be submitted to DEQ by April 1, 2014.

Chapter 6 of the PFM currently includes the County's requirements for water quality control, water quantity control (adequate outfall), and BMPs. The requirements for water quality control and water quantity control are being removed from the PFM and consolidated in the new Stormwater Management Ordinance. The requirements for design and construction of BMPs are more technical in nature and will remain in the PFM. The VSMP Permit Regulations list fifteen specific Best Management Practices (BMPs) that are approved for use statewide. The State also has published design standards for these BMPs. Any additional BMPs not on this list must be approved by DEQ before they may be used for credit towards meeting the water quality control requirements of the regulations. The regulations allow localities to establish limitations on the use of specific BMPs with written justification provided to DEQ. The amendment to the Stormwater Management Act, Va. Code Ann. § 62.1-44.15:33, limits localities' ability to adopt more stringent requirements than the minimum requirements of the regulations and the County's ability to exercise the authority provided in the regulations to establish limitations on the use of specific BMPs as follows:

C. Localities shall not prohibit or otherwise limit the use of any best management practice (BMP) approved for use by the Director or the Board except as follows:

1. When the Director or the Board approves the use of any BMP in accordance with its stated conditions, the locality serving as a VSMP authority shall have authority to preclude the onsite use of the approved BMP, or to require more stringent conditions upon its use, for a specific land-disturbing project based on a review of the stormwater management plan and project site conditions. Such limitations shall be based on site-specific concerns. Any project or site-specific determination purportedly authorized pursuant to this subsection may be appealed to the Department and the Department shall issue a written determination regarding compliance with this section to the requesting party within 90 days of submission. Any such determination, or a failure by the Department to make any such determination within the 90-day period, may be appealed to the Board.

2. When a locality is seeking to uniformly preclude jurisdiction-wide or otherwise limit geographically the use of a BMP approved by the Director or Board, or to apply more stringent conditions to the use of a BMP approved by the Director or Board, upon the request of an affected landowner or his agent submitted to the Department, with a copy submitted to the locality, within 90 days after adoption, such authorizing ordinances, design manuals, policies, or guidance documents developed by the locality that set forth the BMP use policy shall be provided to the Department in such manner as may be prescribed by the Department that includes a written justification and explanation as to why such more stringent limitation or conditions are determined to be necessary. The Department shall review all supporting materials provided by the locality to determine whether the requirements of this section have been met and that any determination made by the locality

pursuant to this section is reasonable under the circumstances. The Department shall issue its determination to the locality in writing within 90 days of submission. Such a determination, or a failure by the Department to make such a determination within the 90-day period, may be appealed to the Board.

D. Based on a determination made in accordance with subsection B or C, any ordinance or other requirement enacted or established by a locality that is found to not comply with this section shall be null and void, replaced with state minimum standards, and remanded to the locality for revision to ensure compliance with this section. Any such ordinance or other requirement that has been proposed but neither enacted nor established shall be remanded to the locality for revision to ensure compliance with this section.

E. Any provisions of a local stormwater management program in existence before January 1, 2013, that contains more stringent provisions than this article shall be exempt from the requirements of this section. However, such provisions shall be reported to the Board at the time of the locality's VSMP approval package. (§ 62.1-44.15:33. Code of Virginia)

Of the fifteen BMPs listed in the VSMP Permit Regulations, “rooftop disconnection” is the only BMP not currently available for use in Fairfax County in some form, either by inclusion in the PFM or various DPWES-LDS Technical Memoranda related to the use of innovative BMPs or with site-specific approval (rainwater harvesting). The restrictions proposed for the BMPs listed in the PFM are all based on current restrictions. Therefore, staff believes that the restrictions satisfy the requirement of § 62.1-44.15:33(E) as being in place prior to January 1, 2013.

G. <u>Proposed Amendments</u>

1) The extent of review of downstream drainage systems to determine adequacy is being replaced by a reference to the extent of review required under the Stormwater Management Ordinance. The extent of review required under the Stormwater Management Ordinance is the State minimum requirement, which extends farther downstream than the current requirement in the PFM.

2) The use of the critical shear stress method in determining adequacy is being eliminated. This method has not been used for a number of years and currently is not approved for use by the State. However, it still could be used at some future time under a provision in the PFM that allows the Director to consider alternative methods to the detention method that achieve an equivalent degree of stream protection and that are subsequently approved by the State.

3) The detention method is being removed from the PFM and relocated to the Stormwater Management Ordinance in a slightly modified version. Use of the detention method eliminates the need for a review of the downstream drainage system (outfall) to determine adequacy.

4) Water quality control criteria related to the Chesapeake Bay Preservation Ordinance is being removed from the PFM. At the State level, compliance with the water quality control criteria in the VSMP Permit Regulations is deemed to meet the criteria in the Chesapeake Bay Preservation Area Designation and Management Regulations. Because the new Stormwater Management Ordinance includes these requirements it is not necessary to have them duplicated in the PFM.

5) The table of assigned phosphorus removal efficiencies has been deleted. The state has developed design specifications and total phosphorus removal efficiencies for fifteen BMPs (available on the Virginia Stormwater BMP Clearinghouse web site) which must be used by localities. The section covering tree box filters, which are a type of bioretention facility, has been deleted; it is adequately covered by the section on bioretention and the Virginia design specifications. A separate section for each type of BMP is included in the PFM. BMPs must be designed in accordance with the state design specifications except as supplemented and modified in the PFM. The basic sizing criteria and other essential design criteria developed by the State for all fifteen BMPs is used to assure that the state's assigned total phosphorus removal is not compromised. Whenever any provision of the PFM imposes a different standard than the state design specifications, the PFM standard shall be followed. The County's dam standards, soils testing, and maintenance provisions of the PFM must be adhered to for all designs. Restrictions on the use and location for each BMP are included. The restrictions are based on general applicability for different types of development, site constraints, inspection and maintenance needs, and the potential burden on homeowners.

6) Nineteen plates related to design standards and criteria for BMPs, standard BMP plan views, the critical shear stress method, and example problems are being deleted. Standard BMP plan views are included in the online State BMP specifications.

7) Two alternatives, previously discussed with the Board, are presented for maintenance of stormwater management facilities in residential areas. Under the first alternative, which is a continuation of the current policy, the County will maintain dry ponds, extended detention ponds, and regional wet ponds. All other types of BMPs will be maintained by Homeowner Associations (HOAs) or property owners. Under the second alternative, the County will maintain the following stormwater management facilities constructed after adoption of the proposed amendments:

- Sheet flow to a vegetated filter or conserved open space
- Infiltration practices
- Bioretention
- Vegetated swales
- Wet swales (linear wetlands)
- Filtering practices (e.g. sand filters)
- Constructed wetlands
- Wet ponds

- Extended detention ponds
- Manufactured (proprietary) BMPs

Under the second alternative, the HOAs or property owners will maintain the following:

- Rooftop disconnections
- Soil compost amendment
- Reforestation
- Vegetated roof
- Rainwater harvesting
- Permeable pavement

Under the second alternative, involving expanded County maintenance of residential BMPs, the County would be responsible for functional maintenance of the facilities and the property owners would be responsible for aesthetic maintenance. In addition to maintaining new residential BMPs, the Board may also want to consider development of a conversion program to allow property owners to turn over eligible existing facilities to the County for maintenance. The transfer of the BMPs to the County for maintenance would be optional for the BMP owners. Prior to transfer, the BMPs would need to be brought up to an acceptable condition and easements dedicated to the County. Some advantages of County maintenance are:

- Greater assurance that the BMPs are functional, resulting in greater control of MS4 permit compliance terms
- Reduction in the potential need for enforcement actions against homeowners and associated costa and staff time
- Reduction in the perceived inequity of owners of privately maintained BMPs versus owners of publicly maintained BMPs and residents of older communities without BMPs
- County may be able to trade or pursue more cost effective solutions in the future with greater control of the countywide system

Some disadvantages of County maintenance are:

- County will be working on private property within easements which may be perceived as intrusive by the owners
- Costs for regular inspections and most maintenance assumed by the County
- Costs would be passed on to all County property owners via the countywide stormwater service district tax which might be perceived as inequitable by owners who currently don’t have BMPs to maintain
- Conversion program would be needed to transfer over 1,000 existing privately maintained residential BMP facilities to the County inventory

H. Regulatory Impact:

The proposed Stormwater Management Ordinance is being adopted as required by the Virginia Stormwater Management Act and Regulations. Requirements for water quality and quantity control, currently located in the Public Facilities Manual and Chesapeake Bay Preservation Ordinance, are being consolidated in the new ordinance. Existing prohibitions related to pollution of state waters and discharges into County storm drains in Chapters 105 and 106 of the County Code are being expanded and consolidated in the new ordinance. The new ordinance establishes more stringent requirements for water quality controls than those currently contained in the PFM and Chesapeake Bay Preservation Ordinance. These requirements meet but do not exceed the minimum requirements of the Virginia Stormwater Management Act and Regulations. The new ordinance retains existing requirements currently in the PFM, with minor modifications, for water quantity control related to stream protection and flooding. These requirements exceed the minimum requirements of the Virginia Stormwater Management Act and Regulations. The new ordinance creates a requirement for a local stormwater permit and a consolidated stormwater and erosion and sediment control permit as required by the Virginia Stormwater Management Act and Regulations. Under the new ordinance and in accordance with the Virginia Stormwater Management Act and Regulations, the County will be responsible for plan review and inspections for the state for VSMP permits and enforcement of VSMP permit violations. Under the Virginia Stormwater Management Act and Regulations, the threshold for the requirement to obtain a state permit has been increased from 2,500 square feet to one acre making it less stringent than current requirements.

In general, the new water quality control requirements will be more difficult to achieve for all development including County projects and result in the construction of more, albeit smaller, controls distributed throughout the project site. This impact is mitigated for land disturbances on existing residential lots by the exception provisions contained in the new ordinance and the option to purchase water quality control credits through a broker system set up by the state. It is unknown at this time if sufficient credits will be available to meet future demand for credits. The regulatory impacts also are mitigated by the provisions set forth in the ordinance for land-disturbing activities that have coverage under a state VSMP permit prior to July 1, 2014, and proposed land-disturbing activities that have County approvals prior to July 1, 2012, both of which are derived directly from the Virginia Stormwater Management Regulations. Projects that have coverage under a state VSMP permit are not subject to the new technical criteria in the proposed Stormwater Management Ordinance provided that construction is completed by July 1, 2024. Grandfathered projects are not subject to the new technical criteria provided that construction is completed by July 1, 2019. The types of projects grandfathered are currently valid proffered rezonings or P district rezonings or other rezonings with a plan of development, special exceptions, special permits, variances, preliminary or final subdivision plats, subdivision construction plans, preliminary or final site plans, or grading plans. In addition, County projects for which funding was obligated prior to July 1, 2012, are grandfathered until July 1, 2019, and County projects for which

governmental bonding or public debt financing was issued prior to July 1, 2012, are grandfathered indefinitely.

The proposed PFM amendments are necessary to implement the new Stormwater Management Ordinance and the VSMP Permit Regulations. Requirements for water quality and quantity control, currently located in the PFM and Chesapeake Bay Preservation Ordinance, are being consolidated in the new ordinance. The primary regulatory impact of the PFM amendments is related to the limitations on use and location of BMPs and, if approved, the maintenance of additional types of BMPs in residential areas by the County.

With respect to the limitations on use and location of BMPs, the limitations are less restrictive than current requirements but more restrictive than what is permitted under the Regulations. Currently, all BMPs must be located on outlots in new residential subdivisions except that some types of BMPs may be located on lots in residential subdivisions creating three or fewer lots with approval by the Director and on existing residential lots and BMPs may not be located in the VDOT right-of-way. Under the proposed amendments, the limit of three lots is being increased to seven lots and some BMPs may be located in the VDOT right-of-way subject to approval by VDOT. In order for BMPs to be located in the right-of-way, an agreement between the County and VDOT, similar to the one currently in place for the Tysons Corner Urban Center, will have to be developed. Staff has begun talks with VDOT but it may take some time to negotiate an acceptable agreement(s).

I. Fiscal Impact:

There is a need for two Code Compliance Investigator positions in FY 2014. Based on the actual increase in constructed BMPs above current ordinance BMP construction levels coupled with increased enforcement efforts, additional positions may need to be requested in future budget submissions. It is also anticipated that additional positions in the County Attorney's office may be needed in the future for enforcement activities. The need for additional maintenance staff will need to be reevaluated if the Board determines that the County should take over maintenance of most new BMP facilities. With respect to plan review and inspection activities, no new staff is being requested at this time.

It is difficult to assess what fiscal impact the addition of new BMP types and changes to the BMP design standards will have on the County, developers, or property owners. The primary fiscal impact is due to the increase in the number of BMPs required to meet the new water quality control requirements in the Stormwater Management Ordinance rather than the design standards for those BMPs. The increase in the number of BMPs per project would increase both design and construction costs.

If the number of BMP types eligible for public maintenance is expanded, the annualized cost for County maintenance of new BMPs added to the inventory of

County maintained facilities is estimated to be approximately $0.6 million versus approximately $0.25 million under the current system. The costs to the County would increase by this amount every year. In addition, there would be additional costs if the County instituted a conversion program for existing privately maintained residential BMPs to be brought up to acceptable condition and turned over to the County. If all of the existing privately maintained residential BMPs were turned over to the County for maintenance (this likely would take many years), there would be an additional annualized cost estimated at $3.5 million. Any staffing costs associated with the conversion program would be offset by less enforcement activity. Therefore, the fiscal impact of a change to the types of BMPs maintained by the County would be approximately $3.5 million increasing at a rate of $0.6 million per year from current Stormwater Program funding.

J. Attached Documents:

Attachment A – Amendments to Chapter 6 (Storm Drainage)
Attachment B – Amendments to Chapter 12 (Vegetation Preservation and Planting)

Proposed Amendments to Chapter 6 (Storm Drainage)
of
The Fairfax County Public Facilities Manual

Amend §6-0200 (Policy and Requirements for Adequate Drainage), 6-0200 (Minimum Requirements, by revising paragraph 6-0202.2A(3) to read as follows:

6-0202.2A(3) The construction or grading plan shall include a written justification for the proposed diversion and a detailed analysis of both concentrated and non-concentrated stormwater runoff leaving a development site for each affected downstream drainage system in accordance with the requirements of § 6-0203. The extent of downstream analysis shall be performed to a point where the diverted flow is returned to its natural course. However, the analysis for a non-bonded lot grading plan proposing a diversion of less than 0.5 cfs for the 10-year design storm may be terminated at a point that satisfies § 6-0203.2, if that point is upstream of the point where the diverted flow is returned to its natural course. Otherwise, the extent of downstream review shall be performed to a point where the diverted flow is returned to its natural course and in accordance with § 6-0203, and whichever point results in the ~~furthest~~ farthest downstream review shall govern.

Amend §6-0200 (Policy and Requirements for Adequate Drainage), 6-0202 (Minimum Requirements), by revising paragraph 6-0202.3 to read as follows:

6-0202.3 Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system or the developer must provide a drainage system satisfactory to the Director to preclude an adverse impact (e.g., soil erosion; sedimentation; yard flooding; duration of ponding water; inadequate overland relief) on downstream properties and receiving channels in accordance with § 6-0203, as well as ~~a proportional~~ an improvement of the pre-development conditions (§ 6-0203.4 and § 6-0203.5). If the developer chooses to install a storm drainage system, the system shall be designed in accordance with established, applicable criteria for such systems.

Amend §6-0200 (Policy and Requirements for Adequate Drainage), by revising 6-0203 (Analysis of Downstream Drainage System) to read as follows:

6-0203 Analysis of Downstream Drainage System (91-06-PFM)

6-0203.1 The downstream drainage system shall be analyzed to demonstrate the adequacy of the system (§ 6-0203.3), or it shall be shown that there is no adverse impact to the downstream system as well as ~~a proportional~~ an improvement of the pre-development conditions (§ 6-0203.4 and § 6-0203.5).

6-0203.2 The extent of the review of the downstream drainage system shall be as required by Chapter 124 of the County Code. Note that the extent of review for channel protection and flood protection requirements are different.~~:~~

~~6-0203.2A To a point at which the that is at least 150 feet downstream of a point where the receiving pipe or channel is joined by another that has a drainage area that is at least 90 percent of the size of the first drainage area at the point of confluence; or~~

~~6-0203.2B To a point at which the total drainage area is at least 100 times greater than the contributing drainage area of the development site; or~~

~~6-0203.2C To a point that is at least 150 feet downstream of a point where the drainage area is 360 acres or greater.~~

6-0203.2A ~~6-0203.2D When using §§ 6-0203.2A and 6-0203.2C for the extent of review, t~~The analysis must be to a point where all the cross-sections are adequate in the farthest downstream reach of 150 feet. A minimum of three cross-sections shall be provided in the 150-foot reach. If the detention method described in § 6-0203.4A ~~§ 6-0203.4C~~ is used, the three cross-sections in the farthest downstream reach of 150 feet shall be limited to showing a defined channel or a man-made drainage facility and checking for flooding as described in § 6-0203.4A(3) ~~§ 6-0203.4C(3)~~ and § 6-0203.5.

6-0203.2B ~~6-0203.2E~~ The Director may require analysis farther downstream when the submitted narrative described in § 6-0204 and all related plats and plans are insufficient to show the true impact of the development on surrounding and other lower lying properties, or if there are known drainage problems downstream.[1]

6-0203.2C ~~6-0203.2F~~ Cross-section selection and information shall be determined in accordance with Chapter 5 of the latest edition of the "Virginia Erosion and Sediment Control Handbook" (Virginia Department of Conservation and Recreation) under the section titled "Determination of Adequate Channel." Cross-sections shall be shown on the plans with equal horizontal and vertical scales.

6-0203.2D ~~6-0203.2G~~ If the downstream owner(s) refuse to give permission to access the property for the collection of data, the developer shall provide evidence of this refusal and make arrangements satisfactory to the Director to provide an alternative method for the collection of data to complete the outfall analysis (e.g., through the use of photos, aerial surveys, "as built" plans, County topographic maps, soils maps, and any other relevant information).

[1] These drainage problems may be documented as parts of County watershed or drainage studies, complaints on file with the County, or complaints on file at the offices of County Supervisors.

6-0203.3 Adequacy of all natural watercourses, channels and pipes shall be verified in accordance with the channel protection and flood protection requirements of Chapter 124 of the County Code and the following ~~as follows:~~

~~6-0203.3A The developer shall demonstrate that the total drainage area to the point of analysis within the channel is 100 times greater than the contributing drainage area of the development site; or~~

~~6-0203.3B(1) Natural watercourses shall be analyzed by the use of a 2-year frequency storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks;~~

~~6-0203.3B(2) All previously constructed man-made channels shall be analyzed by the use of a 10-year frequency storm to verify that stormwater will not overtop channel banks and by the use of a 2-year frequency storm to demonstrate that stormwater will not cause erosion of channel bed or banks;~~

6-203.3A ~~6-0203.3B(3)~~ Pipes, storm sewer systems and culverts, which are not maintained by VDOT, shall be analyzed by the use of a 10-year frequency storm to verify that stormwater will be contained within the pipe, system, or culvert; and

6-203.3B ~~6-0203.3B(4)~~ Pipes, storm sewer systems and culverts, which are maintained by VDOT, shall be analyzed by the use of the 10-year or greater frequency storm in accordance with VDOT requirements.

6-0203.3C Determinations of the adequacy of drainage systems shall be performed in accordance with methods contained in Chapter 5 of the latest edition of the "Virginia Erosion and Sediment Control Handbook" (Virginia Department of Conservation and Recreation) under the section titled "Determination of Adequate Channel."

6-0203.4 ~~A proportional~~ An improvement and no adverse impact to the downstream drainage system shall be shown in accordance with the requirements of Chapter 124 of the County Code and the following: ~~by one of the following methods:~~

~~6-0203.4A Critical Shear Stress Method~~

~~6-0203.4A(1) If the outfall is inadequate due to erosive velocities along the extent of review, which is described in § 6-0203.2, the critical shear stress method may be used to show no adverse impact due to erosive velocities. The erosive work on the channel for the post-development conditions shall be reduced to a level below the erosive work on the channel under pre-development conditions by the required proportional improvement. The required proportional improvement of the downstream system at each inadequate cross-section is the ratio of the post-development C times A (See § 6-0803 for a description of C times A) for the contributing drainage area of the site to the existing development C times A for the entire drainage area at that cross-section. The required proportional improvement is computed as follows:~~

~~$P_i = [C_d A_d / C_{es} A_{es}] X 100$~~

~~Where,~~
~~P_i = Required Proportional Improvement (%)~~
~~C_d = Runoff Coefficient for the Contributing Drainage Area of the Site in a Post-Development Condition~~
~~A_d = Contributing Drainage Area of the Site~~
~~C_{es} = Runoff Coefficient for the Contributing Drainage Area to the Cross Section in an Existing Development Condition~~
~~A_{es} = Contributing Drainage Area to the Cross Section~~

~~Each inadequate cross-section along the extent of review shall then be analyzed for the following:~~

~~6-0203.4A(2) (107-11-PFM) The shear stress for both the pre-development condition and the post-development condition for the 2-year storm shall be plotted in relation to time at each cross-section. On each graph, the permissible shear stress also shall be plotted. The permissible shear stress is based on the soil type, and may be determined for cohesive soils from Plate 76-6 and for non-cohesive soils from Plate 77-6. The soil type may be determined by field test or the soil type designated on the County soils maps may be used. If the soil type is designated using the County soils maps, the most conservative permissible shear stress for the soil type shall be used. The plans shall indicate how the soil type was determined. The County soil maps are available on the County website and the soil properties are available from the USDA-NRCS website. The area between the permissible shear stress and the actual shear stress on the graph is erosive work on the channel. The erosive work for the post-development condition shall be less than the erosive work for pre-development condition by a percentage equal to the required proportional improvement.~~

~~The shear stress on the channel can be calculated using the following formula:~~

~~$\tau = \gamma RS$~~

~~Where:~~
~~τ = shear stress (lb./sq.ft.)~~
~~γ = unit weight of water (62.4 lb./ft^3)~~
~~R = hydraulic radius (ft.)~~
~~S = slope of the channel bed~~

~~6-0203.4B Channel Capacity Method~~

~~6-0203.4B(1) If the outfall is inadequate due to inadequate capacity along the extent of review, which is described in § 6-0203.2, the channel capacity method may be used to show no adverse~~

~~impact due to overtopping. The largest storm that does not exceed the actual channel, pipe, or culvert capacity under pre-development conditions shall be determined for the cross-section that is most frequently over its capacity. The post-development peak flows for the above storm and the 2-year and 10-year storms shall be reduced to a level below the pre-development conditions by a percent equal to the required proportional improvement. See § 6-0203.4A(1) for a description of the required proportional improvement.~~

6-0203.4A ~~6-0203.4C~~ Detention Method [2]

6-0203.4A(1) ~~6-0203.4C(1)~~ It shall be presumed that no adverse impact and ~~a proportional~~ an improvement will occur if on-site detention is provided as follows and the outfall is discharging into a defined channel or manmade drainage facility:

~~6-0203.4C(1)(i) Extended detention of the 1-year storm volume for a minimum of 24 hours. If extended detention of the BMP volume (see § 6-0400 *et seq*.) also is provided, the 24 hours shall be applied to the difference between the 1-year storm volume and the BMP volume; and~~

~~6-0203.4C(1)(ii)~~ In order to compensate for the increase in runoff volume, the 1-year, 2-year and 10-year post-development peak rates of runoff from the development site shall be reduced below the respective peak rates of runoff for the site in good forested condition (e.g., for NRCS method, a cover type of "woods" and a hydrologic condition of "good") in accordance with the requirements of Chapter 124 of the County Code. ~~This reduction results in a proportional improvement and is computed as follows:~~

~~$R_i = [1 - (V_f / V_d)] X 100$~~

~~Where:~~
~~R_i = Reduction of Peak Flow Below a Good Forested Condition (%)~~
~~V_f = Runoff Volume from the Site in a Good Forested Condition~~
~~V_d = Runoff Volume from the Site in a Post-Developed Condition~~

The calculation of the peaks and cumulative volumes shall be based on the NRCS methodology described in § 6-0802 or other methods as approved by the Director.

~~6-0203.4C(1)(iii) Computations demonstrating the 1½-year post-development peak rate of runoff from the development site does not exceed the 1½-year peak rate of runoff for the site in good forested condition are optional. The 1½- year storm is used to obtain Leadership in Energy and Environmental Design (LEED) certification.~~

[2] Because of the long detention times resulting from this method, consideration shall be given to hydrology, soils and extended detention when choosing the appropriate landscaping for the detention facility. The detention method also is referred to as the energy balance method.

6-0203.4A(2) ~~6-0203.4C(2)~~ If this method is used, each outfall from the site shall be analyzed independently and the allowable release rate shall be based on the area of the site that drains to the outfall under pre-development conditions.

6-0203.4A(3) ~~6-0203.4C(3)~~ If this method is used, the downstream review analysis shall be limited to providing cross-sections to show a defined channel or man-made drainage facility, and checking for flooding of existing dwellings or buildings constructed under an approved building permit from the 100-year storm event for the extent of review described in § 6-0203.2~~A, B, C and D~~.

6-0203.4B ~~6-0203.4D~~ Other scientifically valid methods, which show no adverse impact regarding erosion or capacity for an inadequate outfall and show ~~proportional~~ an improvement, may be approved by the Director in accordance with § 124-4-4 of the County Code.

6-0203.5 In accordance with § 6-0202.4, if an existing dwelling or a building constructed under an approved building permit, which is located within the extent of review described in § 6-0203.2, is flooded by the 100-year storm, the peak flow of the 100-year storm at the development site shall be reduced to a level below the pre-development condition in accordance with the requirements of Chapter 124 of the County Code ~~by a percent equal to the required proportional improvement. See § 6-0203.4A(1) for a description of the required proportional improvement~~.

Amend §6-0200 (Policy and Requirements for Adequate Drainage), by revising 6-0204 (Submission of Narrative Description and Downstream Analysis) to read as follows:

6-0204 Submission of Narrative Description and Downstream Analysis (91-06-PFM)

6-0204.1 In addition to plats, plans, and other documents that may be required, a description of each outfall of the storm drainage system from the development site shall be submitted as part of the relevant subdivision construction plan or site plan and shall include the following:

6-0204.1A The additional submission shall include a narrative and sketches describing the major elements (pipe, channel, natural watercourse stream, etc.) of each outfall drainage system, including any discharges of non-concentrated surface waters from the development site. Photographs may also be included to assist in the description of the outfall.

6-0204.1B Downstream Review. The downstream review, divided into reaches, as required by § 6-0203, shall:

6-0204.1B(1) Note the existing surrounding topography, soil types, embankments, vegetation, structures, abutting properties, etc., which may be impacted by drainage;

6-0204.1B(2) In cases where the developer seeks to establish that the existing downstream facilities and/or natural waterways are adequate to receive the drainage from the development

site, provide sufficient cross-section information, associated graphs, and computations to support the assertion of adequacy, in accordance with § 6-0203.3;

6-0204.1B(3) In cases where the downstream facilities are inadequate and the developer proposes to use the detention method, in accordance with § 6-0203.4A ~~§ 6-0203.4C~~, provide sufficient information to (i) establish the existence of a defined channel or man-made drainage facility to receive the concentrated discharge from the development site, and (ii) demonstrate at least the minimum required ~~proportional~~ improvement, as described in § 6-0203.4A(1) ~~§ 6-0203.4C(1)~~, will be achieved;

~~6-0204.1B(4) In cases where the downstream facilities are inadequate and the developer proposes to use the critical shear stress or channel capacity method, in accordance with § 6-0203.4A and § 6-0203.4B, provide sufficient cross-sections, associated graphs, and computations to demonstrate (i) there will be no adverse impacts and (ii) at least the minimum required proportional improvement, as described in § 6-0203.4A(1), will be achieved;~~

6-0204.1B(4) ~~6-0204.1B(5)~~ Provide sufficient information to demonstrate that (i) there will be no flooding of existing dwellings, or buildings constructed under an approved building permit, by the 100-year storm event, or (ii) any existing flooding condition will not be aggravated by drainage from the development site and ~~a proportional~~ an improvement is made in accordance with § 6-0203.5; and

6-0204.1B(5) ~~6-0204.1B(6)~~ Include a written opinion, certified, signed, and sealed by the submitting professional, that (i) the requirement of adequacy of the downstream drainage system(s) is met or the development will meet the no adverse impact condition and achieve the required proportional improvement of pre-development conditions; (ii) if any portion of the outfall drainage system is a natural watercourse, the cross-sections analyzed and included on the plan are representative of stream reaches for the entire extent of review for the natural watercourse portion of the system; and (iii) there will be no flooding of existing downstream dwellings, or buildings constructed under an approved building permit, by the 100-year storm event, or that any existing flooding condition will not be aggravated by drainage from the development site.

Amend §6-0300 (Policy on Detention of Stormwaters) by revising it to read as follows:

6-0300 ~~POLICY ON~~ RETENTION AND DETENTION OF STORMWATERS

6-0301 General ~~Policy~~

6-0301.1 ~~It is the intent of this policy to encourage t~~The use of various methods for the on-site retention and detention of stormwater ~~in the interest of minimizing~~ is required under Chapter 124 of the County Code to minimize the adverse effects of increased stormwater runoff (resulting from development of land within the County) on all downstream drainageways.

~~6-0301.2 (31-90-PFM) It also is the intent of this policy to encourage a regional approach in the implementation of stormwater detention, rather than numerous small, less effective individual on-site ponds.~~

6-0301.2 ~~6-0301.3 Detention~~ Stormwater management facilities must be provided in all storm drainage plans for proposed ~~for~~ development in the County submitted for review and approval unless exempt or waived by the Director in accordance with Chapter 124 of the County Code.

6-0301.3 ~~6-0301.4 (35-91-PFM) Regional dry ponds or extended dry ponds are the preferred types of stormwater management facility for this purpose, except in locations where the County's Regional Stormwater Management Plan calls for a wet BMP pond.~~ The use of wet ponds, extended detention ponds, and constructed wetlands in residential developments is restricted to regional facilities or to residential developments where there are no other reasonable options available for compliance with the water quality control requirements.

6-0301.4 Dry ponds (typically designed for detention only) that do not include permanent pools of water may be used in residential developments.

6-0301.5 (46-94-PFM) A ~~wet~~ pond is a regional ~~wet~~ pond if it is approved as such as a part of the County's regional stormwater management plan. In addition, a ~~wet~~ pond may be deemed by the County to be a regional ~~wet~~ pond if it 1) is the functional equivalent of a regional ~~wet~~ pond or 2) has an upstream watershed area of 100 acres or more, and a detention capacity and BMP capacity capable of serving the entire upstream watershed.

6-0302 Detention Measures

6-0302.1 Except where otherwise prohibited, detention, either alone or in combination with other measures, is an acceptable option for meeting the County and State requirement for protecting receiving waterways from erosion and flooding resulting from (developed) runoff.

6-0302.2 On-site detention of stormwater is desirable in many cases to alleviate existing downstream drainage problems and to preclude the development of new ones.

6-0302.2A Detention is mandatory where the existing downstream drainage system is clearly inadequate and its expansion or improvement is either financially prohibitive or unacceptable for aesthetic or other compelling reasons.

6-0302.2B In some areas of a watershed, detention may cause increased peak flows to occur on the major streams and tributaries. Therefore, the downstream impact must be carefully investigated.

6-0302.2C The Director may prohibit detention of stormwater where and when it is not in the best interests of the County.

6-0302.3 The release rate from ponding areas shall approximate that of the site prior to the proposed development for the design storm, but adequate alternate drainage must be provided to accommodate major storm flows.

6-0302.4 The rooftops of buildings may be used for detention, but care should be taken to design the buildings to accommodate the additional live loading involved ~~if the depth exceeds 3 inches~~.

6-0302.5 Detention pools or basins in parks (subject to the approval of FCPA), playing fields, parking lots or storage areas can be constructed to reduce peak runoff downstream by providing on-site storage.

6-0302.5A Care must be taken to ensure that such ponds do not become nuisances or health hazards.

6-0302.5B The design engineer should strive to design detention facilities which require minimal maintenance. The maintenance responsibility shall be clearly stated on the plans.

6-0302.5C Where dual purpose facilities are provided, flat grades encountered, or poor draining soils found, provisions for adequate low flow drainage may be required.

6-0302.6 Porous material may be used where practical as an alternative to conventional impervious parking area paving in accordance with § 6-1300 *et seq*.

6-0302.6A This material would allow the stormwater to be absorbed more readily by the ground rather than adding to additional runoff.

6-0302.6B This practice is not applicable to areas where a high water table exists or where subsoil conditions are not suitable.

6-0302.6C Design engineers are encouraged to investigate and propose experimental uses of new or existing products and methods, subject to approval by the Director, ~~including porous asphalt pavement~~ where such use may appear appropriate.

6-0302.6D Parking areas surfaced with gravel or rock must be approved by the Director, in accordance with Paragraph 9 of § 11-202 of the Zoning Ordinance, or § 7-0504 *et seq*.

6-0303 Location and Maintenance of Stormwater Management and BMP ~~of Detention~~ Facilities

Alternative 1 (Most types of new BMPs in residential areas privately maintained.)

6-0303.1 (32-90-PFM) All non-regional "wet ponds" (ponds with a permanent water surface) and other BMPs, except as noted below, in ~~residentially zoned areas~~ single-family and residential condominium developments must be maintained by the homeowner's association, or individual homeowners where provided for in § 6-0303.7, and a private maintenance agreement must be executed before the construction plan is approved. Dry detention ponds, extended detention facilities, and regional wet detention ponds, including those constructed to serve as BMP facilities, located in ~~residentially zoned areas, including condominium developments~~ single-family and residential condominium developments, shall be within County storm drainage easements, and shall be maintained by DPWES. County maintenance is provided for proper functioning of the facility and does not include routine aesthetic maintenance such as caring for and/or controlling vegetation, where allowed, and seasonal mowing of grass within easements. In addition, access easements are required for all facilities except for privately maintained facilities located on individual buildable single family attached and detached residential lots.

Alternative 2 (Additional types of new BMPs in residential areas publicly maintained.)

6-0303.1 (32-90-PFM) ~~All non-regional "wet ponds" (ponds with a permanent water surface)~~ Rooftop disconnections and associated sheet flow areas, areas of compost amended soils, reforested areas, vegetated roofs, rainwater harvesting facilities, and areas of permeable pavement in ~~residentially zoned areas~~ single-family and residential condominium developments must be maintained by the homeowner's association, or individual homeowners where provided for in § 6-0303.7, and a private maintenance agreement must be executed before the construction plan is approved. ~~Dry detention ponds and regional wet detention ponds, including those constructed to serve BMP facilities,~~ Vegetated filters, infiltration facilities, bioretention facilities, vegetated swales, wet swales, filtering practices, constructed wetlands, wet ponds, dry ponds, extended detention ponds, and manufactured BMPs located in ~~residentially zoned areas~~ single-family and residential condominium developments shall be within County storm drainage easements, or a combination of County storm drainage easements and restrictive easements as appropriate, and shall be maintained by DPWES. County maintenance is provided for proper functioning of the facility and does not include routine aesthetic maintenance such as caring for and/or controlling vegetation, where allowed, and seasonal mowing of grass within easements. In addition, access easements are required for all facilities except for privately maintained facilities located on individual buildable single family attached and detached residential lots. Maintenance mechanisms for BMPs are summarized in Table 6.3A.

6-0303.2 (46-94-PFM) Detention and BMP facilities located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner, and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-0303.3 (38-93-PFM) Retention, detention and/or BMP facilities may not be located in RPAs unless an exception is approved under provisions of Chapter 118 (Chesapeake Bay Preservation Ordinance) of the County Code.

~~6-0303.4 Although this policy is primarily concerned with maintaining post-development peak outflow at the level of the pre-development condition, it may be applied under certain conditions for the purpose of correcting an existing inadequate outfall. When used in this fashion, such a facility also may aid in meeting the requirement for adequate drainage.~~

~~6-0303.5 When new development lies in the Occoquan watershed, the provisions of § 6-0400 *et seq*. relating to BMPs also apply.~~

6-0303.4 ~~6-0303.6~~ (46-94-PFM) Wherever stormwater management facilities are planned in areas within 300 feet of a residence or active recreational area, the design shall be directed specially toward the safety aspects of the facility and shall conform to the requirements of § 6-1606; including such features as mild bottom slopes along the periphery of a detention pond extending out to a point where the depth exceeds 2 feet, flat lateral and longitudinal slopes where concrete low flow channels are used, outlet structures with properly fastened trash racks which will inhibit unauthorized entrance, and posted warning signs.

6-0303.5 ~~6-0303.7~~ In addition, credit for recreational open space shall not be allowed in those areas where detention facilities are located unless the area can reasonably be used for recreational purposes. For example, some detention ponds could be used for active recreational use if the low flows are totally separated from the play areas by a piping system.

6-0303.6 ~~6-0303.8~~ (83-04-PFM, 24-88-PFM) Underground detention facilities may not be used in residential developments, including rental townhouses, condominiums and apartments, unless specifically waived by the Board of Supervisors (Board) in conjunction with the approval of a rezoning, proffered condition amendment, special exception, or special exception amendment. In addition, after receiving input from the Director regarding a request by the property owner(s) to use underground detention in a residential development, the Board may grant a waiver if an application for rezoning, proffered condition amendment, special exception, and special exception amendment was approved prior to, June 8, 2004, and if an underground detention facility was a feature shown on an approved proffered development plan or on an approved special exception plat. Any decision by the Board to grant a waiver shall take into consideration possible impacts on public safety, the environment, and the burden placed on prospective owners for maintenance of the facilities. Any property owner(s) seeking a waiver shall provide for adequate funding for maintenance of the facilities where deemed appropriate by the Board. Underground detention facilities approved for use in residential developments by the Board shall be privately maintained, shall be disclosed as part of the chain of title to all future homeowners (e.g., individual members of a homeowners' or condominium association) responsible for maintenance of the facilities, shall not be located in a County storm drainage easement, and a private maintenance agreement in a form acceptable to the Director must be executed before the construction plan is

approved. Underground detention facilities may be used in commercial and industrial developments where private maintenance agreements are executed and the facilities are not located in a County storm drainage easement.

Alternative 1 (Most types of new BMPs in residential areas privately maintained.)

6-0303.7 ~~6-0303.9~~ (35-91-PFM) Detention or structural BMP facilities, including 10-year flood storage areas associated with such facilities, shall not be located on individual buildable single family attached and detached residential lots, or any part thereof for the purpose of satisfying the detention, water quantity, or BMP requirements of the ~~Subdivision Ordinance or Zoning~~ Stormwater Management Ordinance for subdivision and site plans. However, detention and BMP facilities may be constructed on individual lots to satisfy the detention and BMP requirements for each lot or for subdivisions of no more than seven lots where approved by the Director in accordance with § 6-1300 *et seq*. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities. County maintenance for detention and BMP facilities on such individual lots will not be provided. The use and location of BMPs is summarized in Table 6.3.

Alternative 2 (Additional types of new BMPs in residential areas publicly maintained.)

6-0303.7 ~~6-0303.9~~ (35-91-PFM) Detention or structural BMP facilities, including 10-year flood storage areas associated with such facilities, shall not be located on individual buildable single family attached and detached residential lots, or any part thereof for the purpose of satisfying the detention, water quantity, or BMP requirements of the ~~Subdivision Ordinance or Zoning~~ Stormwater Management Ordinance for subdivision and site plans. However, detention and BMP facilities may be constructed on individual lots to satisfy the detention and BMP requirements for each lot or for subdivisions of no more than seven lots where approved by the Director in accordance with § 6-1300 *et seq*. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities. County maintenance for detention and BMP facilities on such individual lots will ~~not~~ be provided in accordance with § 6-0303.1. The use and location of BMPs is summarized in Table 6.3.

Table 6.3 Use and Location of BMPs (✓ denotes allowed)

BMP	Non-residential	Multi-family and mixed-use	Residential subdivision lots[1, 2]	Outlots in residential subdivisions	Nonbonded subdivision lots[2,3]	VDOT right-of-way[4]
Simple Rooftop Disconnection[5]				N/A		N/A

(§ 6-1312)						
Rooftop Disconnection to Alternative Practice[6] (§ 6-1312)	✓	✓		✓	6	N/A
Sheet Flow to Vegetated Filter or Conserved Open Space (§ 6-1313)	✓	✓		✓	✓	N/A
Soil Compost Amendment (§ 6-1314)	✓	✓	1, 2	✓	✓	N/A
Reforestation (§ 6-1311)	✓	✓	1	✓	✓	N/A
Vegetated Roof (§ 6-1310)	✓	✓		N/A		N/A
Rainwater Harvesting (§ 6-1315)	✓	✓				N/A
Permeable Pavement (§ 6-1304)	✓	✓	2			
Infiltration Practices (§ 6-1303)	✓	✓	1	✓	✓	
Bioretention (§ 6-1307)	✓	✓	1	✓	✓	✓
Vegetated Swales (§ 6-1308)	✓	✓	1	✓	✓	✓
Wet Swale (linear wetland) (§ 6-1316)	✓	✓		✓		✓
Filtering Practice (§ 6-1317)	✓	✓		✓		✓
Constructed Wetland (§ 6-1318)	✓	✓		✓		
Wet Pond (§ 6-1319)	✓	✓		✓		
Extended Detention Pond (§ 6-1320)	✓	✓		✓		
Manufactured (Proprietary) BMP (§ 6-1321)	✓	✓		✓		✓

1. The Director may approve the use of these BMPs on lots in residential subdivisions of no more than seven lots.

2. Soil compost amendments and pervious pavement used on residential subdivision lots may be treated as forest/open space and managed turf respectively in the runoff reduction calculation. However, a loss of 30% of the treated area over time is assumed for soil compost amendments and 50% of the pervious pavement to compensate for future conversions or disturbance of the area.

3. Nonbonded subdivision lots include five-acre lots that are not subject to subdivision control.

4. Use of the indicated practices is subject to approval by VDOT.

5. Simple rooftop disconnection is allowed with Director approval on a case-by-case basis.

6. Water from downspouts may be directed to other BMP practices and use/location would be determined by the type of alternative practice.

Alternative 1 (Most types of new residential BMPs privately maintained.)

A table is not needed for this option.

Alternative 2 (Most types of new residential BMPs publicly maintained.)

Table 6.3A Maintenance Mechanisms[1] for BMPs in Single-Family and Residential Condominium Developments

	Maintenance Responsibility (✓denotes acceptable)		Location	
BMP	Public	Private	Outside of VDOT right-of-way	Within VDOT right-of-way
Simple Rooftop Disconnection (§ 6-1312)		✓	PMA[2] & Restrictive Easement	N/A
Rooftop Disconnection to Alternative Practice (§ 6-1312)		✓	PMA	N/A
Sheet Flow to Vegetated Filter or Conserved Open Space (§ 6-1313)	✓		Restrictive Easement & Storm Drainage & Access Easements	N/A
Soil Compost Amendment (§ 6-1314)		✓	Restrictive Easement[3]	N/A
Reforestation (§ 6-1311)		✓	Restrictive Easement	N/A

Vegetated Roof (§ 6-1310)		✓	PMA[2]	N/A
Rainwater Harvesting (§ 6-1315)		✓	PMA[2]	N/A
Permeable Pavement (§ 6-1304)		✓	PMA[2, 3]	N/A
Infiltration Practices (§ 6-1303)	✓		Storm Drainage & Access Easements	N/A
Bioretention (§ 6-1307)	✓		Storm Drainage & Access Easements	VDOT/County Agreement[4]
Vegetated Swales (§ 6-1308)	✓		Storm Drainage & Access Easements	VDOT/County Agreement[4]
Wet Swale (linear wetland) (§ 6-1316)	✓		Storm Drainage & Access Easements	VDOT/County Agreement[4]
Filtering Practice (§ 6-1317)	✓		Storm Drainage & Access Easements	VDOT/County Agreement[4]
Constructed Wetland (§ 6-1318)	✓		Storm Drainage & Access Easements	N/A
Wet Pond (§ 6-1319)	✓		Storm Drainage & Access Easements	N/A
Extended Detention Pond (§ 6-1320)	✓		Storm Drainage & Access Easements	N/A
Manufactured (Proprietary) BMP (§ 6-1321)	✓		Storm Drainage & Access Easements	VDOT/County Agreement[4]

1. This table summarizes the maintenance mechanisms for the listed practices when allowed. To determine when and where a practice is allowed, see Table 6.3 and the sections covering the individual practices.

2. PMA stands for Private Maintenance Agreement.

3. Soil compost amendments and pervious pavement used on residential subdivision lots may be treated as forest/open space in the runoff reduction calculation. However, a loss of 30% of the treated area over time is assumed for soil compost amendments and 50% of the pervious pavement to compensate for future conversions or disturbance of the area. For this type of use, a restrictive easement and/or PMA is not required.

4. VDOT permits may be required in addition to a VDOT/County Agreement.

Amend §6-0400 (Stormwater Runoff Quality Control Criteria) by revising it to read as follows:

6-0400 STORMWATER RUNOFF QUALITY CONTROL CRITERIA (38-93-PFM)

6-0401 General Information and Regulations

6-0401.1 In compliance with the Virginia Stormwater Management Act, Article 1.1 (§ 10.1-603.1, et seq.) of Chapter 6 of Title 10.1 of the Code of Virginia and the Virginia Stormwater Management Program (VSMP) Regulations (4VAC50-60 et seq.), the Board has adopted Chapter 124 (Stormwater Management Ordinance) of the County Code. The Stormwater Management Ordinance establishes requirements for managing stormwater and procedures whereby those requirements shall be administered and enforced. These requirements are intended to protect property, state waters, stream channels, and other natural resources from the potential harm of unmanaged stormwater. Requirements for water quality controls are included in the Stormwater Management Ordinance.

6-0401.2 ~~6-0401.1~~ The Board has established a Water Supply Protection Overlay District (WSPOD) in the Occoquan Watershed to prevent water quality degradation of the Occoquan Reservoir due to pollutant loadings within the watershed. WSPOD boundaries have been established on the Official Zoning Map. Use limitations are established which require that there shall be water quality control measures designed to reduce the projected phosphorus runoff by at least one-half for any subdivision or use requiring site plan approval unless a modification or waiver is approved by the Director. Requirements for water quality controls in the WSPOD from the Zoning Ordinance have been incorporated in the Stormwater Management Ordinance.

6-0401.3 ~~6-0401.2~~ The Board has established Chesapeake Bay Preservation Areas (CBPAs) consisting of RPAs and RMAs throughout the entire County to protect the quality of water in the Chesapeake Bay and its tributaries (Chapter 118 of the County Code). RPA and RMA components are identified in § 118-1-7 of the County Code. Performance criteria have been established which require that there shall be water quality control measures designed to prevent a net increase in nonpoint source pollution from new development based on average land cover conditions and to achieve a 10-percent reduction in nonpoint source pollution from development of previously developed land ~~redevelopment~~. For purposes of § 6-0400 *et seq*., the average land cover condition is 18-percent imperviousness. ~~These criteria are implemented as follows:~~ Compliance with the requirements of the Stormwater Management Ordinance shall be considered to meet the stormwater management requirements of Chapter 118.

~~6-0401.2A For new development, the projected total phosphorus runoff pollution load for the proposed development shall be reduced by no less than 40 percent compared to phosphorus loads projected for the development without BMPs. This requirement shall not apply to any development that does not require a site plan pursuant to Article 17 of the Zoning Ordinance, that does not require subdivision approval pursuant to the Subdivision Ordinance, and that does not result in impervious cover of 18 percent or greater on the lot or parcel on which the development will occur.~~

~~6-0401.2B (79-03-PFM) For redevelopment of any property not currently served by one or more BMPs, the required reduction in phosphorus loads will be computed for each site based on the following formula:~~

~~[1 - 0.9(“I”$_{pre}$ / “I”$_{post}$)] X 100 = % P removal~~

~~Where:~~
~~“I”$_{pre}$ is the pre-development percent impervious area~~
~~“I”$_{post}$ is the post-development percent impervious area~~

~~6-0401.2C For redevelopment of any property that is currently and adequately served by one or more BMPs, the projected phosphorus runoff pollution load after redevelopment shall not exceed the existing phosphorus runoff pollution load.~~

~~6-0401.2D “Redevelopment” means the substantial alteration, rehabilitation, or rebuilding of a property for residential, commercial, industrial, or other purposes where there is no net increase in impervious area by the proposed redevelopment within an RPA and no more than a net increase in impervious area within an RMA of 20 percent relative to conditions prior to redevelopment, or any construction, rehabilitation, rebuilding, or substantial alteration of residential, commercial, industrial, institutional, recreational, transportation, or utility uses, facilities or structures within an Intensely Developed Area.~~

~~6-0401.2E (79-03-PFM) These requirements apply to any development or redevelopment in a CBPA unless a waiver or modification is approved by the Director. Waivers or modifications shall be subject to the following criteria:~~

~~6-0401.2E(1) The requested waiver or modification is the minimum necessary to afford relief;~~

~~6-0401.2E(2) Granting the waiver or modification will not confer upon the applicant any special privileges that are denied by Chapter 118 of the County Code to other property owners who are subject to its provisions and are similarly situated;~~

~~6-0401.2E(3) The waiver or modification is in harmony with the purpose and intent of Chapter 118 of the County Code and is not of substantial detriment to water quality;~~

~~6-0401.2E(4) The waiver or modification request is not based upon conditions or circumstances that are self-created or self-imposed;~~

~~6-0401.2E(5) Reasonable and appropriate conditions are imposed, as warranted, that will prevent the activity from causing a degradation of water quality; and~~

~~6-0401.2E(6) Other findings, as appropriate and required by Chapter 118 of the County Code, are met.~~

6-0401.4 ~~6-0401.3~~ The Board has also adopted stormwater runoff quality control requirements with certain approved rezoning and special exception applications.

6-0401.5 ~~6-0401.4~~ The water quality control measures described in § 6-0000 *et seq*. are called Best management practices (BMPs). The term BMP ~~refers to a practice, or combination of practices, which has been determined by the Director to be the most effective practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals~~ means schedules of activities, prohibitions of practices, including both structural and nonstructural practices, 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.

6-0402 Stormwater Quality Control Practices. ~~The BMP policy where required is~~ BMP requirements are incorporated into the stormwater management program in the following manner:

6-0402.1 The Director may require the control of off-site areas draining to proposed BMPs which would not operate at the listed phosphorus removal efficiency, because of hydraulic overloading, if these areas were left uncontrolled. ~~Control of off-site areas for this purpose will not be required in excess of an amount which would be considered equivalent to 100 percent site coverage.~~

6-0402.2 ~~(56-96-PFM) Guidance for the design of BMPs can be found in Chapter 4 of the "Northern Virginia BMP Handbook" (NVPDC/ESI, 1993). Such manual may be modified by the Board to apply specifically to Fairfax County.~~ The state has developed design specifications and total phosphorus removal efficiencies for the 15 BMPs listed below (available on the Virginia Stormwater BMP Clearinghouse web site). BMPs shall be designed in accordance with the state design specifications except as modified herein. Whenever any provision of the PFM imposes a different standard than the state design specifications, the PFM standard shall be followed except that all designs must utilize elements of the state design specifications (e.g. sizing criteria) necessary to assure that the state's assigned total phosphorus removal is not compromised as determined by the Director. In this regard, attention is specifically directed to the dam standards, soils testing, and maintenance provisions of the PFM which shall be adhered to for all designs. The use of the term "should" is normally considered to be permissive and not mandatory. Where the state standards use the term "should" with respect to design parameters, features, and use limitations, designers may be required to provide justification for not following these recommended guidelines.

6-0402.3 ~~(56-96-PFM)~~ For purposes of § 6-0400 *et seq*., the following standard BMPs~~, sizing rules, and their associated phosphorus removal efficiencies, based on available water quality planning studies,~~ are accepted:

6-0402.3.A(1) Rooftop Disconnection

6-0402.3.A(2) Sheet Flow to a Vegetated Filter Strip or Conserved Open Space

6-0402.3.A(3) Soil Compost Amendment

6-0402.3.A(4) Reforestation

6-0402.3.A(5) Vegetated Roof

6-0402.3.A(6) Rainwater Harvesting

6-0402.3.A(7) Permeable Pavement

6-0402.3.A(8) Infiltration Practices

6-0402.3.A(9) Bioretention

6-0402.3.A(10) Vegetated Swales (grass channels and dry swales.)

6-0402.3.A(11) Wet Swale

6-0402.3.A(12) Filtering Practices

6-0402.3.A(13) Constructed Wetland

6-0402.3.A(14) Wet Pond

6-0402.3.A(15) Extended Detention Pond

6-0402.3B Manufactured BMPs. The Virginia Stormwater BMP Clearinghouse web site also lists Manufactured BMPs that have been assigned phosphorous removal efficiencies by the state. These BMPs also may be used to meet water quality control requirements subject to review and approval by the Director. Review and approval by the Director is required so that the manufacturer's design, construction, and maintenance requirements can be evaluated for conflicts with County design, construction, and maintenance requirements and use limitations. Requests for review and approval should be submitted by the manufacturer and shall include the following:

1. Approvals from the Virginia Department of Environmental Quality (DEQ);
2. Technical details with research data supporting efficiencies including any and all materials provided to the clearinghouse for review;
3. Maintenance considerations and program (private maintenance will generally be required for manufactured BMP facilities);

4. Any safety considerations;
5. Aesthetic considerations;
6. Location and interaction with populated areas;
7. Pest control program, if required;
8. Special construction details and specifications, if needed;
9. Typical construction costs;
10. Typical maintenance costs.

~~Table 6.3 Phosphorus Removal Efficiencies~~ ~~(98-07-PFM, 56-96-PFM)~~

~~BMP~~	~~Sizing Rule~~	~~Phosphorus[1] Removal (%)~~
~~Extended Detention[2] Dry Pond (48-hour)~~	~~Plate 2-6~~	~~40~~
~~Wet Pond[3]~~ ~~Design 1~~ ~~Design 2~~	 ~~2.5 x V_r + extended detention~~ ~~4.0 x V_r~~	 ~~45~~ ~~50~~
~~Infiltration[4]~~ ~~Design 1~~ ~~Design 2~~ ~~Design 3~~	 ~~0.5 in./impervious acre~~ ~~1.0 in./impervious acre~~ ~~2-year, 2-hour storm~~	 ~~50~~ ~~65~~ ~~70~~
~~Natural Open Space[5]~~	~~N/A~~	~~100~~
~~Regional Ponds[6]~~ ~~Dry Pond~~ ~~Wet Pond~~	 ~~Plate 2-6~~ ~~4.0 x V_r~~	 ~~50~~ ~~65~~
~~Sand Filter[7]~~	~~0.5 in./impervious acre~~	~~60~~
~~Pervious Pavement[8]~~ ~~Design 1~~ ~~Design 2~~	 ~~Captures and treats a water quality volume of 0.5 in.~~ ~~without infiltration~~ ~~with infiltration~~ ~~Captures and treats a water quality volume of 1.0 in.~~ ~~without infiltration~~ ~~with infiltration~~	 ~~35~~ ~~50~~ ~~40~~ ~~65~~
~~Bioretention Basin/Filter~~	~~0.5 in./impervious acre~~ ~~1.0 in./impervious acre~~	~~50~~ ~~65~~
~~Vegetated Swale~~	~~Volume Based Design~~ ~~0.5 in./impervious acre~~ ~~1.0 in./impervious acre~~ ~~Flow Based Design~~ ~~Hydraulic residence time of 18 minutes~~	 ~~50~~ ~~65~~ ~~30~~
~~Tree Box Filter~~	~~0.5 in./impervious acre~~ ~~1.0 in./impervious acre~~	~~50~~ ~~65~~

~~Vegetated Roof[8]~~	~~N/A~~	~~40~~
~~Reforestation[9]~~	~~N/A~~	~~70~~

~~[1]Phosphorus (as total P), the limiting nutrient for algal productivity in local receiving waters, is used as an indicator of water quality. Measures that control phosphorus also will control many other pollutants.~~

~~[2]A minimum drawdown time of 48 hours is required for the BMP storage volume.~~

~~[3]V_r is the volume of runoff from the mean storm. It is computed based on an average annual rainfall of 40 in. per year and an average of 100 storms per year multiplied by the rational formula "C" factor. Design One incorporates extended detention above the permanent pool equal to the Plate 2-6 value.~~

~~[4]Infiltration may be used only on soils designated by a professional authorized by the State to provide such information as adequate for the purpose. Special attention must be given to construction and maintenance practices for infiltration.~~

~~[5]For purposes of BMP efficiencies, "open space" in residential areas is defined as perpetually undisturbed homeowners' association (or "common") areas placed in floodplain or conservation easements and without other encumbrances. Full credit for utility easements equal to or less than 25 ft. in width and which meet the above criteria is allowed. The Director may allow "open space" credit for undisturbed areas in utility easements greater than 25 ft. in width on a case by case basis. Any areas located within private lots or with maintained landscaping or active recreational areas are not to be included in "open space" determinations. In nonresidential areas, "open space" is defined as perpetually undisturbed areas placed in floodplain or conservation easements and without other encumbrances. Credit for utility easements equal to or less than 25 ft. in width and which meet the above criteria is allowed. The Director may allow "open space" credit for undisturbed areas in utility easements greater than 25 ft. in width on a case by case basis. Open space used for BMP credit which is not already in a floodplain easement shall be placed in a recorded conservation easement with metes and bounds which shall also be shown on the plat. BMP credit for open space, which is dedicated to the County during the land development process, may be assigned to the remaining portions of the original site on approval by the Board.~~

~~[6]Regional ponds are those facilities which are part of the regional stormwater management plan adopted by the Board or substitutes and additions to the plan approved by DPWES. All ponds for which regional BMP credit is requested must be approved by DPWES. Regional ponds generally control a watershed of 100 acres or more in size. However, the Director may allow regional BMP credit for smaller ponds constructed to satisfy requirements of the regional plan.~~

~~[7]Sand filters shall be privately owned and maintained.~~

~~[8]In applying the computational procedure in Chapter 4 of the Northern Virginia BMP Handbook to demonstrate compliance with the phosphorus removal requirement for the site, the "C" factor for pervious pavements and vegetated roofs should be set at 0.9 to correctly credit the phosphorus removal provided by these controls. This will result in a different weighted "C" factor than that used to compute stormwater runoff.~~

~~[9]In applying the computational procedure in Chapter 4 of the Northern Virginia BMP Handbook to demonstrate compliance with the phosphorus removal requirement for the site, the "C" factor ratio for reforestation should be set at 1.0 because reforestation is being treated as a land use credit rather than a structural control.~~

6-0402.4 Other innovative BMP measures ~~may be permitted but, due to the design variables that could affect their appropriateness and efficiencies, percentages are not listed above~~ which have not been approved by the state may be used to meet proffers or development conditions that exceed the minimum requirements of the Stormwater Management Ordinance, but shall not be used to meet the minimum water quality control requirements in § 124-4-3 of the County Code. A request for use of these techniques will be reviewed on a case by case basis and approved by the Director as appropriate. The developer must provide full details and supporting data including:

1. Justification;
2. Technical details with research data supporting efficiencies;
3. Maintenance considerations and program (private maintenance will generally be required for innovative BMP facilities);
4. Any safety considerations;
5. Aesthetic considerations;
6. Location and interaction with populated areas;
7. Pest control program, if required~~.~~;
8. Estimated construction cost;
9. Estimated 20-year maintenance cost.

For innovative BMPs located in residential areas that will be maintained by Homeowner Associations (HOAs) with limited resources, the Director may require the developer to transfer sufficient funds to the HOA prior to bond release to cover a 20-year maintenance cycle. These funds shall not be available for use until after bond release.

6-0402.5 The Director may preclude the use of any BMP otherwise allowed, or require more stringent conditions upon its use, for a specific land-disturbing project based on a review of the stormwater management plan and project site conditions. Such limitations shall be based on site-specific concerns.

6-0402.6 ~~6-0402.5~~ ~~The~~ Assigned efficiencies ~~set forth in § 6-0402.3~~ apply only to the portion of the site served by each practice; however, credit may be allowed for control of runoff pollution from off-site areas. ~~Additional credit is not allowed for practices in series without the Director's approval.~~

~~6-0402.6 (79-03-PFM) The following options will be considered to comply with the stormwater runoff quality control criteria in RPAs and RMAs:~~

~~6-0402.6A Incorporation on the site of BMPs that achieve the required control as set forth in § 6-0401. For the purposes of this subsection, the "site" may include multiple projects or properties that are adjacent to one another or lie within the same drainage area where a single BMP or a system of BMPs will be utilized by those projects in common to satisfy water quality protection requirements;~~

~~6-0402.6B Compliance with a locally adopted regional stormwater management program which may include a Virginia Pollution Discharge Elimination System (VPDES) permit issued by the Department of Environmental Quality to a local government for its municipally owned separate storm sewer system discharges, that is reviewed and found by the Chesapeake Bay Local Assistance Board to achieve water quality protection equivalent to that required by this Article (BMP credit for a pro rata share payment to the regional stormwater management program will~~

~~be computed based on the portion of the site which drains to an existing or proposed regional pond providing water quality control.); or~~

~~6-0402.6C Compliance with a site-specific VPDES permit issued by the Department of Environmental Quality, provided that the local government specifically determines that the permit requires measures that collectively achieve water quality protection equivalent to that required by this Article.~~

6-0402.7 Developers, in coordination with DPWES, are strongly encouraged to seek cooperation with other planned developments in their watershed area in order to construct combined facilities which could serve several developing sites. This regional approach to stormwater management would result in facilities that are not only efficient in terms of stormwater quality control, but are also cost effective and land saving.

6-0402.8 The following information is required on all site and subdivision plans to ~~show~~ demonstrate compliance with the water quality control requirements of § 6-0000 *et seq*.

6-0402.8A A brief narrative summarizing how water quality control requirements are being provided for the site.

6-0402.8B A map showing all subareas and land cover types used in the computations of weighted site cover runoff coefficients ~~average "C" factors~~, BMP ~~storage~~ sizing, and phosphorus ~~removal~~ reduction including all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff from off-site areas, open space, and uncontrolled areas.

6-0402.8C Open space used for BMP credit (e.g. reforested areas, conserved open space, etc.) should be delineated on the plan sheets with the note "Water quality management area. BMP credit allowed for open space. No use or disturbance of this area is permitted without the express written permission of the Director of the Department of Public Works and Environmental Services."

6-0402.8D Computations used to determine BMP outflow rates and size outlet structures.

6-0402.8E Computations of BMP facility storage requirements.

6-0402.8F Computations of BMP phosphorus ~~removal~~ reduction for the site demonstrating compliance with the water quality control requirements of Article 4 of Chapter 124 of the County Code using the Virginia Runoff Reduction Method Worksheet, or equivalent method, as approved by the Director. In applying the Virginia Runoff Reduction Method, an annual rainfall value of 43 inches shall be used.

6-0402.8G Statement of maintenance responsibility for the BMPs (public or private). Additional information may be required by the Director to justify use of nonstandard designs or in unusual situations.

6-0402.8H If an operator intends to meet the requirements established in § 124-4-2 of the County Code through the use of off-site compliance options, then a letter of availability from the off-site provider must be included.

Amend §6-0800 (Hydrologic Design), 6-0801 (Acceptable Hydrologies) by revising Table 6.4 (Acceptable Hydrologies – Applications) to read as follows:

6-0800 HYDROLOGIC DESIGN

6-0801 Acceptable Hydrologies (27-89-PFM)

Table 6.4 Acceptable Hydrologies – Applications

Name of Hydrology	200 Acres and Under	Over 200 Acres	Retention/Detention Facilities
NRCS*	X	X	X
Rational Formula	X	O	X***
Anderson Formula	O	X	O
Other**	X	X	X

X = Acceptable hydrology
O = Unacceptable hydrology
* = Recommended hydrology
** = With approval of the Director
*** = Watersheds less than 20 acres only, provided that the "C" factor for the unimproved areas does not exceed 0.15 on ~~the~~ storm frequencies of 2-years or less ~~storm~~.

Amend §6-0800 (Hydrologic Design), 6-0802 (NRCS Hydrology) by revising it to read as follows:

6-0802 NRCS Hydrology (27-89-PFM)

NRCS Hydrology consists of Technical Release Number 20 (TR-20) and Technical Release Number 55 (TR-55) including the COE HEC-1 software, NRCS applications. This hydrology is preferred and acceptable for all applications except where prior floodplain studies for adopted floodplains used the Anderson Formula. Supplemental Curve Number (CN) values developed for certain runoff reduction practices are provided herein.

6-802.1 Vegetated Roofs. For hydrologic computations using NRCS methods, the following CN values shall be used: 64 for the 1-year storm; 66 for the 2-year storm; 72 for the 10-year storm; and 75 for the 100-year storm. Other values may be approved by the Director, depending on the composition and depth of the growth media and the slope of the roof, upon submission of a hydrologic analysis of the water retention capacity of the system.

Amend §6-0800 (Hydrologic Design), 6-0803 (Rational Formula) by revising the introductory paragraph to read as follows:

6-0803 Rational Formula (47-95-PFM)

The Rational Formula, $Q = C_f CIA$, is acceptable for drainage areas of 200 acres and under, except it is not authorized for designing detention/retention facilities greater than 20 acres. The Rational Formula may be used for the design of detention/retention facilities of 20 acres and less provided that the "C" factor for unimproved areas does not exceed 0.15 on ~~the~~ storm frequencies of 2-years or less ~~storm~~ and the facility is in full compliance with all other requirements of § 6-1600 *et seq*.

Q = Rate of runoff (cfs)
C_f = Correction Factor for ground saturation
C = Runoff Coefficient (ratio of runoff to rainfall)
I = Rainfall Intensity (in./hr.)
A = Area of drainage basin (acres)

C_f Values
1.0 - 10-year or less
1.1 - 25-year
1.2 - 50-year
1.25 - 100-year

Amend §6-0800 (Hydrologic Design), 6-0803 (Rational Formula) by revising the paragraph 6-0803.3C(1) to read as follows:

6-0803.3C(1) Estimate the ~~overload~~ overland flow time, time for runoff to reach established surface drainage channels such as street gutters and ditches. Plate 4-6 can be used for overland flow.

Amend §6-0800 (Hydrologic Design), by revising Table 6.5 (Runoff Coefficients and Inlet Times) to read as follows:

Table 6.5 Runoff Coefficients and Inlet Times (98-07-PFM, 27-89-PFM**)**

Zoning Classification	Runoff Coefficients	% Impervious	Inlet Times (minutes)

Business, Commercial & Industrial	0.80 – 0.90	90	5
Apartments & Townhouses	0.65 – 0.75	75	5-10
Schools & Churches	0.50 – 0.60	50	
Single Family Units Lots 10,000 ft^2 Lots 12,000 ft^2 Lots 17,000 ft^2 Lots ½ acre or more	 0.40 – 0.50 0.40 – 0.45 0.35 – 0.45 0.30 – 0.40	 35 30 25 20	10 - 15[1]
Parks, Cemeteries and Unimproved Areas [2]	0.25 – 0.35	15	To be Computed
TYPE OF SURFACE			
Pavements & Roofs	0.90	100	According to zoning classification of composite runoff coefficient
Lawns	0.25-0.35	0	
Open Water[3,4]	0.9	0	
Reforested Areas[2]	0.25-0.35	0	
Vegetated Roofs[4] Extensive Systems Intensive Systems	 0.50 0.40	N/A[5]	
Pervious Pavement[4] Porous Asphalt Pavement Permeable Pavement Blocks Pervious Concrete	(I-~~1.1~~3.0)/I (I-~~3.0~~1.0)/I (I-5.0)/I I=peak rainfall intensity (in./hr.)	N/A[5]	

1) However, for design of yard inlets, i.e., locations and throat capacities, in residential areas, drainage computations shall use a 5-minute time of concentration, or alternatively, a site specific calculation to justify usage of a longer time of concentration. Computations for design of pipes may continue to use the 10- to 15-minute time of concentration.

2) For unimproved areas containing less than 5% impervious cover and storm frequencies 2-year or less, use C = 0.10 to 0.20.

3) The runoff coefficient for open water areas such as lakes and streams is set at 0.9 because all rainfall falling on open water is converted directly to runoff. For unimproved areas containing less than a total of 5% open water plus impervious cover, the open water areas may be ignored in computing composite runoff coefficients.

4) Composite runoff coefficients for drainage areas that include significant areas of open water, pervious pavements, or vegetated roofs should not be computed directly from the percentage of impervious area. Use the weighted average of the runoff coefficients to compute the runoff.

5) Values for percent imperviousness have not been assigned to pervious pavement and green roofs. For hydrologic purposes, they respond as pervious or partially pervious surfaces. In determining land use for application of Chesapeake Bay Preservation Ordinance development/redevelopment criteria, they are treated as impervious surfaces.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by revising the title to read as follows:

6-1300 RETENTION, DETENTION, AND ~~LOW IMPACT DEVELOPMENT~~ WATER QUALITY CONTROL (BMP) FACILITIES ~~(98-07-PFM)~~

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1302 (Rooftop Storage) by revising the paragraph 6-1302.2 to read as follows:

6-1302.2 If a proper design is submitted for the 10-year storm, sufficient storage will normally be provided for the 2-year storm and 1-year storm, and separate calculations need not be made.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1303 (Percolation Trenches) by revising it to read as follows:

6-1303 Infiltration Practices ~~Percolation Trenches~~

6-1303.1 General.

6-1303.1A Infiltration practices use temporary surface or underground storage to allow incoming stormwater runoff to exfiltrate into underlying soils. Runoff first passes through multiple pretreatment mechanisms to trap sediment and organic matter before it reaches the practice. As the stormwater penetrates the underlying soil, chemical and physical adsorption processes remove pollutants. Infiltration practices have the greatest runoff reduction capability of any stormwater practice and are suitable for use in residential and other urban areas where measured soil permeability rates exceed 0.50 inch per hour.

~~6-1303.1 A percolation trench is designed to release stored runoff through percolation into the soil.~~

~~6-1303.2 Recharging stormwater back into the ground close to the point of rainfall is one of the more beneficial ways to treat stormwater runoff.~~

~~6-1303.2A Not only does it replenish the water table, it also eliminates the need for costly structures and improvements for conveying runoff from the developed site to an adequate outfall.~~

6-1303.1B Infiltration Practices shall conform to Virginia Stormwater Design Specification No. 8 Infiltration Practices (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1303.2 Feasibility and Limitations.

6-1303.2A ~~6-1303.3 (56-96-PFM)~~ ~~Percolation trenches~~ Infiltration facilities may be useful only in areas where the soil is pervious and where the water table is lower than the design depth of the facility ~~trench~~. The design of the facility shall be in accordance with the soil testing, reporting and meeting procedures of § 4-0700 *et seq.* The use of infiltration facilities ~~percolation trenches~~ is undesirable in soil slippage areas.

6-1303.2B The effects of recharging the water table must be analyzed before this method is used for detention.

6-1303.2C It is essential to determine if raising the water table will cause flooding or damage to nearby areas.

6-1303.2D ~~6-1303.3A (47-95-PFM)~~ ~~Trenches~~ Facilities shall be located so that ~~percolation~~ infiltration does not saturate soil within 4 feet of public roadway subgrades.

6-1303.2E In residential areas, infiltration facilities and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance except as noted herein. The Director may approve the location of infiltration facilities on individual buildable single-family detached lots for subdivisions creating no more than seven lots where it can be demonstrated that the requirement is not practical or desirable due to constraints imposed by the dimensions or topography of the property and where adequate provisions for maintenance are provided. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities.

6-1303.2F Infiltration facilities may be located on individual single-family detached residential lots that are not part of a bonded subdivision to satisfy the BMP requirements of the Stormwater Management Ordinance for construction on the lot.

6-1303.2G Infiltration facilities may not be constructed on fill material.

6-1303.2H Infiltration facilities may not be constructed on slopes steeper than 15 percent.

6-1303.2I Setbacks. Infiltration facilities shall meet the setback requirements of Virginia Stormwater Design Specification No. 8 Infiltration Facilities (Latest version referenced in the VSMP Regulations). Setbacks to roads and buildings vary based on the scale of the infiltration practice. In addition, infiltration facilities shall be set back a minimum of 2 feet from property lines.

6-1303.2J Infiltration systems may not be utilized in-line with the main conveyance system where the main conveyance system is maintained by the County or carries through drainage from adjoining properties.

6-1303.2K To prevent groundwater contamination, infiltration systems should not be utilized at sites designated as stormwater hotspots.

6-1303.3 Maintenance.

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1303.3A Infiltration facilities and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Infiltration facilities may not be located in County storm drainage easements. The above does not preclude the use of infiltration facilities by the County within existing County drainage easements or on County-owned property.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1303.3A Infiltration facilities located in single-family and residential condominium developments shall be within County storm drainage easements and shall be maintained by DPWES. Infiltration facilities and their appurtenant structures located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1303.3B Maintenance of infiltration systems is a primary concern of the county and is critical to the long-term operation of these facilities. Maintenance of these systems is the responsibility of the owner. The design professional must consider the maintenance and operational requirements of these facilities, and the resources of the responsible parties, in determining the appropriateness of their use for a specific application. Underground or "buried infiltration systems" utilizing large pipes, manufactured components, modules, chambers or vaults are discouraged due to the difficulty of inspection and maintenance. If an underground infiltration system is proposed, an adequate pretreatment system appropriate for the location and type of development is required to prevent sediments from entering the system. These underground infiltration systems, as described above, should not be used under paved areas if there are other viable options because the pavement significantly increases the cost of repair and replacement.

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1303.3C Maintenance access must be provided for all infiltration facilities not located on individual buildable single family detached lots in accordance with § 6-1306. For infiltration facilities located on individual buildable single family detached lots, maintenance access shall be considered as an integral part of the design and designated on the plan.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1303.3C Maintenance access must be provided for all infiltration facilities in accordance with § 6-1306 except that the access way for infiltration facilities located on individual buildable single family detached lots may have a grass surface rather than an all-weather surface.

6-1303.3D Infiltration facilities with above ground ponding areas shall be posted with permanent signs designating the area as a water quality management area. Signs shall state that the facility is a water quality management area, water may pond after a storm, and the area is not to be disturbed except for required maintenance. Signs shall be posted at approximately 150-foot intervals along the perimeter of the infiltration area with a minimum of one sign for each facility. (See Plate 81-6.)

6-1303.4 Design Criteria ~~of percolation trenches~~

6-1303.4A Treatment Volume. The required treatment volume shall be determined in accordance with Virginia Stormwater Design Specification No. 8 Infiltration Practices (Latest version referenced in the VSMP Regulations).

6-1303.4B ~~6-1303.4A~~ Detention. For facilities designed to provide detention, the 1-year storm, the 2-year storm and the 10-year storm must be routed through the facility; or the facility may be designed to infiltrate the 10-year storm volume. ~~The trench shall be designed to detain the 10-year, 2-hour storm runoff; however, t~~The 100-year design storm should be routed through the system and adequate relief provided – usually in the form of overland relief.

~~6-1303.4B This method will also automatically provide the required detention for the 2-year storm without additional calculations.~~

~~6-1303.4C VDOT #57 stone is recommended for filling the trench. This stone may be assumed to have 40 percent voids.~~

~~6-1303.4D Care must be taken, especially during construction, that sediment deposits do not clog the stone, thus preventing runoff from infiltrating into the stone.~~

~~6-1303.5 A trench using stone with a high voids ration may also be use in areas of impervious soil as temporary underground storage.~~

~~6-1303.5A Overland runoff enters the trench in the same manner, but release of runoff is controlled by an orifice, weir or other device at a rate not exceeding the predevelopment rate of runoff.~~

~~6-1303.5B The controlled release is usually released to a n underground storm sewer system.~~

6-1303.4C For on-line facilities designed to provide water quality control only, the inlet must be designed to pass the peak flow rate for the 10-year storm. For off-line facilities designed to provide water quality control only, a flow splitter shall be used to capture the design storm (typically the treatment volume) and pass larger flows around the facility.

6-1303.4D Pre-Treatment. Pre-treatment shall be provided at all points of concentrated inflow to facilities. Pre-treatment shall be designed in accordance with Virginia Stormwater Design Specification No. 8 Infiltration Practices (Latest version referenced in the VSMP Regulations). Pre-treatment generally consists of a vegetated filter strip or channel and an energy dissipation device. However, space constraints (e.g., parking lot islands) may limit the ability to provide a vegetated filter strip or channel. Where space permits, vegetated filter strips or channels shall be provided. Energy dissipation devices are required for all facilities at points of concentrated inflow. Where inflow is in the form of sheet flow, a vegetated filter strip shall be provided where space permits. Guidelines for sizing vegetated filter strips and channels are provided in Tables 6.25 and 6.26.

6-1303.4E The maximum surface storage depth from the top of the facility to the elevation of the overflow weir or drop inlet shall be 1 foot.

6-1303.4F Berms used to pond water above infiltration facilities shall be a maximum of 2.0 feet in height measured from the downstream toe-of-slope to the top of the berm. The width of the top of the berm shall be a minimum of 2.0 feet. The side slopes of the berm shall be a maximum of 3:1. Berms and overflow weirs shall be sodded and pegged in accordance with the most recent edition of the "Virginia Erosion and Sediment Control." Facilities with berms that are equal to or less than 2.0 feet in height or excavated facilities will not be subject to the requirements of § 6-1600 (Design and Construction of Dams and Impoundments).

6-1303.4G The side slopes of the facility above ground shall be a maximum of 4:1. Where space permits, gentle side slopes (e.g., 5:1) are encouraged to blend the facility into the surrounding landscape. Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with Virginia Occupational Safety and Health (VOSH) requirements. If the facility is located on problem soils, as defined in Section 107-2-2 (j) of the County Code, a professional authorized by the State shall specify the maximum acceptable slope.

6-1303.4H An outlet structure must be provided to convey the peak flow for the 10-year storm. The outlet structure may be a drop inlet or weir. A minimum freeboard of 6 inches shall be provided from the maximum elevation of the 10-year storm to the top of the facility.

6-1303.4I An emergency overflow weir shall be provided for all facilities with berms. The emergency overflow weir must have the capacity to pass the peak flow from the 100-year storm without overtopping the facility. If the facility design includes a weir in the berm to convey the peak flow for the 10-year storm, it also may be designed to function as the emergency overflow weir. The minimum weir length shall be 2 feet.

6-1303.4J The outfall of all outlet structures, emergency overflow weirs, and underdrains must be in conformance with the adequate drainage requirements of § 6-0200 et seq.

6-1303.4K Underdrains shall be provided for all infiltration facilities on marginal soils (field measured infiltration rates 0.5 -1.0 in./hr.) or where detention storage is provided except that facilities on individual single-family detached residential lots that are not part of a bonded subdivision may be constructed without underdrains if the underdrain cannot be daylighted on the lot or connected to a storm sewer structure. If there are no underdrains, observation wells shall be installed to monitor drainage from the facility.

6-1303.4L The depth between the bottom of the facility and groundwater table or bedrock shall be a minimum of 4 feet for infiltration facilities as determined by field run soil borings.

6-1303.4M For facilities requiring underdrains, the underdrain shall be provided with an end cap or a valve fitted onto the end of the underdrain. Facilities shall be designed to dewater completely within 48 hours. If at some future time the facility can no longer drain in the required time, a hole may be drilled in the end cap or the valve opened to relieve surface ponding or back-ups in the drainage system. This allows the system to continue to provide water quality control and detention, albeit at reduced levels, if the infiltration capacity of the *in situ* soils is reduced over time due to consolidation of the soil bed or clogging of the soil pores.

6-1303.4O Variations of the typical details and schematics of infiltration facilities in Virginia Stormwater Design Specification No. 8 Infiltration Practices (Latest version referenced in the VSMP Regulations) may be approved by the Director provided the facility meets all of the requirements in § 6-1303 et seq.

6-1303.5 Gravel Layer/Storage Chamber Design

6-1303.5A Storage Volume. Storage for detention or infiltration may be provided by a layer of gravel or gravel in combination with storage chambers beneath the soil media. Water flows into the storage layer either through an inlet structure or through the surface layer of pea gravel and optional topsoil and sod. Water flows out of the storage layer either by infiltration into the underlying in situ soils or through a restricted underdrain. The design objectives are to infiltrate as much of the water as possible, to provide sufficient storage so that water can drain freely through the surface layer without being backed-up, to assure that there is complete drain down of the facility between storms, and to meet the physical constraints of the site. The flow rate through the surface layer is generally not a limiting factor and the storage volume required is determined by the treatment volume, porosity of the gravel, supplemental pipe storage, and the exfiltration rate into the underlying soils.

6-1303.5B Infiltration facilities shall be sized in accordance with Virginia Stormwater Design Specification No. 8 Infiltration Practices (Latest version referenced in the VSMP Regulations).

6-1303.5C After determining the depth of the gravel layer, check the invert elevation against the elevation of the water table and bedrock. Also check that the facility can drain to the intended outfall.

6-1303.5D Facility Drain Time. The final step in the design of the gravel layer is to compute the time that it takes the facility to drain. The facility must drain completely within 48 hours after the water quality volume has been captured by the filter section. The drain time is computed as follows:

$t_d = V_s / [(k_s)(A_s) / 12 + 3{,}600(Q_u)]$

Where:
t_d = total drain time for facility (hrs.)
V_s = volume of storage (ft^3)
k_s = soil infiltration rate (in./hr.)
A_s = area of soil bed (ft^2)
Q_u = outflow through underdrain (cfs)

6-1303.6 Underdrains. Underdrains shall consist of pipe ≥ 4 inches in diameter placed in a layer of washed VDOT #57 stone. There shall be a minimum of 2 inches of gravel above and below the pipe. Laterals shall be a minimum of 4-6 inches in diameter. Main collector lines and manifolds shall be a minimum of 6-8 inches in diameter. Underdrains shall be laid at a minimum slope of 0.5 percent. Underdrains shall extend to within 10 feet of the boundary of the facility and have a maximum internal spacing of 20 feet on center. Underdrains shall be separated from the soil media in accordance with Virginia Stormwater Design Specification No. 8 Infiltration (Latest version referenced in the VSMP Regulations). Underdrains not terminating in an observation well/clean-out shall be capped. The portion of underdrain piping beneath the surface layer must be perforated. All remaining underdrain piping, including cleanouts, must be nonperforated. All stone shall be washed with less than 1 percent passing a #200 sieve.

6-1303.7 Observation Wells and Cleanouts. There shall be a minimum of one observation well or cleanout per 1,000 square feet of surface area. Observation wells and cleanouts shall be a minimum of 6 inches in diameter with a screw, or flange type cap to discourage vandalism and tampering extending above the BMP water surface elevation. Cleanouts shall be provided at the end of all pipe runs. Cleanouts and observation wells shall be solid pipe except for the portion below the surface layer which must be perforated. Observation wells that are not connected to underdrain piping shall be anchored to a footplate at the bottom of the facility.

6-1303.8 Materials Specifications.

6-1303.8A Underdrains shall be PVC pipe conforming to the requirements of ASTM F758, Type PS 28 or ASTM F949; HDPE pipe conforming to the requirements AASHTO M252 or M 294, Type S; or other approved rigid plastic pipe with a smooth interior. Underdrains shall be perforated with four rows of 3/8-inch holes with a hole spacing of 3.25 ± 0.25 inches or a combination of hole size and spacing that provides a minimum inlet area ≥ 1.76 square

inches per linear foot of pipe or be perforated with slots 0.125 inch in width that provides a minimum inlet area ≥ 1.5 square inches per linear foot of pipe.

6-1303.8B Filter fabric. Filter fabric shall be a needled, non-woven, polypropylene geotextile meeting the requirements listed in Virginia Stormwater Design Specification No. 8 Infiltration (Latest version referenced in the VSMP Regulations). Heat-set or heat-calendared fabrics are not permitted.

6-1303.9 Construction Specifications

6-1303.9A The owner shall provide for inspection during construction of the facility by a licensed design professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers and results of the tests and inspections required under § 6-1303.9E shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1303.9B Infiltration facilities shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan.

6-1303.9C The floor of the facility shall be scarified or tilled to reduce soil compaction and raked to level it before the filter fabric, stone, and soil media are placed.

6-1303.9D Fill for the berm and overflow weir shall consist of clean material free of organic matter, rubbish, frozen soil, snow, ice, particles with sizes larger than 3 inches, or other deleterious material. Fill shall be placed in 8- to12-inch lifts and compacted to at least 95 percent of Standard Proctor Maximum Density in accordance with ASTM D-698, AASHTO T-99, or VDOT specifications. Compaction equipment shall not be allowed within the facility on the soil bed. The top of the berm and the invert of the overflow weir shall be constructed level at the design elevation.

6-1303.9E The facility shall be inspected at 12-24 and 36-48 hours after a significant rainfall (0.5-1.0 inches) or artificial flooding to determine that the facility is draining properly. Results of the inspection shall be provided to DPWES prior to bond release.

6-1303.9F Additional guidelines for construction are provided in Virginia Stormwater Design Specification No. 8 Infiltration Practices (Latest version referenced in the VSMP Regulations).

6-1303.10 Plan Submission Requirements

6-1303.10A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures.

6-1303.10B Cross section(s) of the facility showing the following: elevations and dimensions of berm, inlet, outlet, underdrain, soil media, underlying gravel layer, storage chambers, filter fabric, groundwater table, and bedrock.

6-1303.10C Sizing computations for the facility including volume of storage and surface area of facility required and provided and a computation of the ratio of the shortest flow path to overall length of the facility.

6-1303.10D Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 8.

6-1303.10E Hydrologic calculations for the facility.

6-1303.10F Design calculations and specifications for all hydraulic structures including inlet structures, overflow weirs, and underdrain piping.

6-1303.10G Infiltration calculations.

6-1303.10H Soils analysis and testing results for infiltration. Elevation of groundwater table and/or bedrock.

6-1303.10I A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1303.10J Construction and materials specifications.

~~6-1303.6 Example of Percolation Trench Design:~~

~~6-1303.6A Given: Parking lot area 200 feet x 100 feet, 90 percent impervious area (some planting), rate of infiltration of water into soil as determined by a soils analysis is 0.1 inch/minute.~~

~~Determine: The size of percolation trench required for 100 percent infiltration (no runoff).~~

~~Calculations:~~

~~6-1303.6A(1) Volume of runoff into the trench for 10-year, 2-hour storm and 90 percent impervious surface:~~

~~6-1303.6A(1)(a) Total rainfall accumulation = 3 in.~~

~~6-1303.6A(1)(b) Vol.(in) = (200 ft.)(100 ft.)(0.9)(0.25 ft.) = 4,500 ft^3~~

~~6-1303.6A(2) Assume trench to be 200 ft. long and 5 ft. wide:~~

~~6-1303.6A(2)(a) Area of trench = 1,000 ft^2~~

~~6-1303.6A(2)(b) Vol.(out) = (1 in./10 minutes)(60 minutes/hour)(2 hours)(1 ft./12 in.)(1,000 ft^2) = 1,000 ft^3~~

~~6-1303.6A(3) Vol.(stge.) = Vol.(in) – Vol.(out) = 3,500 ft^3 required storage for runoff (see Table 6.20 and Plate 39-6)~~

~~6-1303.6A(3)(a) Using #57 stone at 40 percent voids: Vol. of stone = 3,500/0.40 = 8,750 ft^3~~

~~6-1303.6A(3)(b) Therefore, volume of trench = 8,750 ft^3~~

~~6-1303.6A(4) Depth of trench = Volume/Area = 8,750 ft^3/1,000 ft^2 = 8.75 ft.~~

~~6-1303.6A(5) Rate of Discharge = Q(out) = (1 in./10 minutes)(1 ft./12 in.)(1 minute/60 seconds)(1,000 ft^2) = 0.14 cfs~~

~~6-1303.6B As an alternate trench design, assume a trench area of 200 ft. x 10 ft.~~

~~6-1303.6B(1) Vol. (out) = 2,000 ft^3 in 2 hours~~

~~6-1303.6B(2) Vol. (storage) = 4,500 – 2,000 = 2,500 ft^3~~

~~6-1303.6B(3) Vol. of stone = 2,500/0.4 = 6,250 ft^3~~

~~6-1303.6B(4) Depth of trench = 6,250/2,000 = 3.13 ft.~~

~~6-1303.6B(5) Q(out) = 0.28 cfs~~

~~6-1303.7 An inflow-outflow hydrograph would provide a more accurate solution to the required storage.~~

~~6-1303.7A The rate of discharge from the trench (or infiltration into the soil) is determined by the area of the trench as well as soil characteristics.~~

~~6-1303.7B The rate of inflow to the trench (or rate of runoff from the parking lot) is determined by the hydrographs in Plates 40-6 and 41-6 and the design storm.~~

~~Table 6.20 Mass Diagram Analysis~~

~~**Time**~~	~~**Rainfall Depth ft.**~~	~~**LMP Area ft²**~~	~~**Vol. (in) ft³**~~	~~**Rate Out cfs**~~	~~**Time sec.**~~	~~**Vol. (out)**~~	~~**Vol. (storage) = Vol. (in) – Vol. (out)** (ft³)~~
~~5~~	~~.050~~	~~18,000~~	~~900~~	~~0.14~~	~~300~~	~~42~~	~~858~~
~~10~~	~~.083~~	~~18,000~~	~~1,494~~	~~0.14~~	~~600~~	~~84~~	~~1,410~~
~~15~~	~~.107~~	~~18,000~~	~~1,926~~	~~0.14~~	~~900~~	~~126~~	~~1,800~~
~~20~~	~~.127~~	~~18,000~~	~~2,286~~	~~0.14~~	~~1200~~	~~168~~	~~2,118~~
~~30~~	~~.154~~	~~18,000~~	~~2,772~~	~~0.14~~	~~1800~~	~~252~~	~~2,520~~
~~40~~	~~.176~~	~~18,000~~	~~3,168~~	~~0.14~~	~~2400~~	~~336~~	~~2,832~~
~~50~~	~~.194~~	~~18,000~~	~~3,492~~	~~0.14~~	~~3000~~	~~420~~	~~3,072~~
~~60~~	~~.208~~	~~18,000~~	~~3,744~~	~~0.14~~	~~3600~~	~~504~~	~~3,240~~
~~70~~	~~.218~~	~~18,000~~	~~3,924~~	~~0.14~~	~~4200~~	~~588~~	~~3,336~~
~~80~~	~~.226~~	~~18,000~~	~~4,068~~	~~0.14~~	~~4800~~	~~672~~	~~3,396~~
~~90~~	~~.235~~	~~18,000~~	~~4,230~~	~~0.14~~	~~5400~~	~~756~~	~~3,474~~
~~100~~	~~.241~~	~~18,000~~	~~4,338~~	~~0.14~~	~~6000~~	~~840~~	~~3,498~~
~~110~~	~~.241~~	~~18,000~~	~~4,338~~	~~0.14~~	~~6600~~	~~924~~	~~3,504*~~
~~120~~	~~.250~~	~~18,000~~	~~4,500~~	~~0.14~~	~~7200~~	~~1,008~~	~~3,492~~

~~* Maximum required storage is 3,504 ft³~~

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1304 (Pervious Pavement) by revising it to read as follows:

6-1304 ~~Pervious~~ <u>Permeable</u> Pavement ~~(98-07-PFM)~~

<u>6-1304.1 General.</u>

<u>6-1304.1A</u> ~~6-1304.1~~ ~~Pervious~~ <u>Permeable</u> pavement systems use a special asphaltic paving material (porous pavement<u>), concrete (pervious concrete),</u> or open jointed concrete blocks (permeable pavement blocks) that allow stormwater to flow through the pavement or the open joints at a high rate. Water is temporarily retained below the pavement within an aggregate base and discharged to the storm sewer system or infiltrated into the underlying *in situ* soils. The principal components of ~~pervious~~ <u>permeable</u> pavement systems are porous pavement<u>, pervious concrete,</u> or permeable pavement blocks, a bedding (choker) course, an optional filter fabric between the bedding course and the aggregate base in permeable pavement block systems, an

open-graded aggregate base with a high void ratio, filter fabric or a layer of sand to separate the aggregate base from the underlying soils and an underdrain that is connected to the storm drain system. Water quality control is provided by adsorption, filtering, sedimentation, biological action, and infiltration into the underlying soils. ~~Pervious~~ Permeable pavement systems reduce the peak rate and volume of stormwater runoff through detention storage and infiltration into underlying soils. Additional infiltration capacity or storage for detention can be obtained by increasing the depth of the aggregate base alone or in combination with storage chambers.

6-1304.1B ~~6-1304.1A~~ ~~Pervious~~ Permeable pavement systems generally may be classified by the degree of infiltration into the underlying soils (i.e., exfiltration out of the aggregate base) that the systems are designed to achieve.

6-1304.1B(1) ~~6-1304.1A(1)~~ No Exfiltration. Systems that do not rely on infiltration of the captured stormwater runoff into the underlying soils are designed to provide water quality control and detention of storm water runoff from small storms. Water that has passed through the pervious pavement is discharged to the storm drain system through an unrestricted underdrain.

6-1304.1B(2) ~~6-1304.1A(2)~~ Full or Partial Exfiltration. Systems that provide for full or partial infiltration of the captured stormwater runoff into the underlying soils are designed to provide water quality control and retention of storm water. Such systems rely on infiltration to drain down the water stored in the aggregate base between storms. ~~Pervious~~ Permeable pavement systems designed for exfiltration, as utilized in Fairfax County, generally include underdrains that are capped or have restricted outflow. This allows the system to continue to provide water quality control and detention, albeit at reduced levels, if the infiltration capacity of the *in situ* soils is reduced over time due to consolidation of the soil bed or clogging of the soil pores.

6-1304.1C ~~6-1304.1B~~ ~~Pervious~~ Permeable pavement systems are applicable as a substitute for conventional asphalt or concrete pavement. ~~Pervious~~ Permeable pavement systems require reasonably favorable conditions of land slope, subsoil drainage, and groundwater table. ~~Pervious~~ Permeable pavement systems are best suited to parking areas that are not subject to muddy conditions that cause sealing or clogging of the pervious material. Examples of suitable locations are parking areas for parks, churches, schools, office buildings, and shopping centers.

6-1304.1D ~~6-1304.1C~~ Post-development hydrology. For hydrologic computations using the Rational Method, the runoff coefficient ("C" factor) for permeable pavement in Table 6.5 shall be used. ~~porous pavement and permeable pavement block systems shall be computed based on the following formula:~~

~~$C = (I - k_p) / I$~~

~~Where:~~
~~I = design rainfall intensity (in./hr.)~~
~~k_p = coefficient of permeability (in./hr.)~~

~~Use a coefficient of permeability of 1.1 inches/hour for porous pavement and 3.0 inches/hour for permeable pavement block systems.~~ For hydrologic computations using National Resource Conservation Service (NRCS) methods, see § 6-0802. ~~use a Curve Number "CN" of 65 for porous pavement and 40 for permeable pavement block systems.~~ For hydraulic computations, use a roughness coefficient ("n" value) of 0.01 for porous asphalt pavement and 0.03 for permeable pavement block systems and pervious concrete.

6-1304.1E Permeable paving shall conform to Virginia Stormwater Design Specification No. 7, Permeable Pavement (Latest version referenced in the VSMP Regulations) except as modified herein.

6-1304.2 ~~Location and Siting~~Feasibility and Limitations

6-1304.2A ~~Pervious~~ Permeable pavement systems may not be located in single family attached or detached residential developments for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the ~~Subdivision or Zoning~~ Stormwater Management Ordinance except as permitted under § 6-1304.2A(1) and § 6-1304.2A(2).

6-1304.2A(1) The Board of Supervisors (Board), in conjunction with the approval of a rezoning, proffered condition amendment, special exception, or special exception amendment, may approve the location of ~~pervious~~ permeable pavement systems in single family attached or detached residential developments in accordance with the following criteria:

6-1304.2A(1)(a) Any decision by the Board shall take into consideration possible impacts on the environment and the burden placed on prospective owners for maintenance of the facilities;

6-1304.2A(1)(b) ~~Pervious~~ Permeable pavement must be part of an overall stormwater management design that does not rely exclusively on pervious pavement to meet BMP and detention requirements;

6-1304.2A(1)(c) Adequate funding for maintenance of the facilities shall be provided by the applicant where deemed appropriate by the Board;

6-1304.2A(1)(d) ~~Pervious~~ Permeable pavement facilities must be located on homeowners' association (or "common") property and may not be located on individual buildable single family attached or detached residential lots, or any part thereof;

6-1304.2A(1)(e) ~~Pervious~~ Permeable pavement facilities shall be privately maintained and a private maintenance agreement in a form acceptable to the Director, which may include but is not limited to requirements for third-party inspections and the filing of annual maintenance and inspection reports with the County, must be executed before the construction plan is approved;

6-1304.2A(1)(f) The use of and responsibility for maintenance of ~~pervious~~ permeable pavement facilities shall be disclosed as part of the chain of title to all future homeowners (e.g., individual members of a homeowners' association) responsible for maintenance of the facilities; and

6-1304.2A(1)(g) In addition to the above requirements, reasonable and appropriate conditions may be imposed, where deemed appropriate by the Board, to provide for maintenance of the facilities and disclosure to property owners.

6-1304.2A(2) ~~Pervious~~ Permeable pavement systems may be located in single family attached or detached residential developments if the ~~pervious~~ permeable pavement appears as a feature shown on a proffered development plan or a special exception plat approved prior to March 12, 2007.

6-1304.2B Not withstanding the above, permeable pavement may be used for driveways on new residential subdivision lots to create equivalent pervious surfaces. These areas can then be treated as managed turf in the runoff reduction calculation. However, a loss of 50% of the permeable pavement area over time is assumed to compensate for inadequate or improper maintenance, driveway replacement, and sealing. The use of and responsibility for maintenance of permeable pavement facilities shall be disclosed as part of the chain of title to all future homeowners (e.g., individual members of a homeowners' association) responsible for maintenance of the facilities. Such facilities shall not be subject to the requirement for a private maintenance agreement in § 6-1304.3 or the slope limitation of § 6-1304.2E.

6-1304.2C ~~6-1304.2B~~ ~~Pervious~~ Permeable pavement systems may not be located on individual residential lots for the purpose of satisfying the BMP requirements of the ~~Chesapeake Bay Preservation~~ Stormwater Management Ordinance.

6-1304.2D ~~6-1304.2C~~ ~~Pervious~~ Permeable pavement systems that utilize infiltration may not be constructed on fill material.

6-1304.2D ~~Pervious~~ Permeable pavement systems may not be constructed in areas where the adjacent slopes are steeper than 20 percent.

6-1304.2E The slope of ~~pervious~~ permeable pavement systems shall be from 1 to 5 percent.

6-1304.2F Setbacks. ~~Pervious~~ Permeable pavement shall meet the setback requirements of Virginia Stormwater Design Specification No. 7, Permeable Pavement (Latest version referenced in the VSMP Regulations). ~~systems not designed for infiltration into the underlying in situ soils shall be located a minimum of 10 feet horizontally from building foundations preferably down gradient. Pervious pavement systems designed for infiltration into the underlying in situ soils shall be located a minimum of 20 feet horizontally from building foundations preferably down gradient. Pervious pavement systems shall be located a minimum of 100 feet horizontally from water supply wells. Pervious pavement systems not designed for infiltration shall be located a~~

~~minimum of 25 feet horizontally up gradient from septic fields and a minimum of 50 feet horizontally down gradient from septic fields. Pervious pavement systems designed for infiltration shall be located a minimum of 50 feet horizontally from septic fields preferably up gradient.~~

~~6-1304.2G The maximum flow length of impervious or pervious surfaces draining onto pervious pavement shall be 100 feet.~~

~~6-1304.2H The total drainage area to the pervious pavement shall not be greater than 5 acres.~~

~~6-1304.2H(1) The maximum ratio of impervious areas to the area of porous pavement for facilities designed to capture and treat a water quality volume of 0.5 inch is 3.4:1. The maximum ratio of impervious areas to the area of porous pavement for facilities designed to capture and treat a water quality volume of 1.0 inch is 1.2:1.~~

~~6-1304.2H(2) The maximum ratio of impervious areas to the area of permeable pavement blocks for facilities designed to capture and treat a water quality volume of 0.5 inch is 11:1. The maximum ratio of impervious areas to the area of permeable pavement blocks for facilities designed to capture and treat a water quality volume of 1.0 inch is 5:1.~~

6-1304.2G ~~6-1304.2I~~ ~~Pervious~~ Permeable pavement systems shall not be located in the vicinity of loading docks, vehicle maintenance areas, or outdoor storage areas, where there is the potential for high concentrations of hydrocarbons, toxics, or heavy metals in stormwater runoff entering the facility.

6-1304.2H ~~6-1304.2J~~ ~~Pervious~~ Permeable pavement systems shall not be located in travelways, areas subject to frequent truck traffic or material storage areas, such as loading docks, where there is potential for settling or high loads of grease and oils.

6-1304.2I ~~6-1304.2K~~ Concentrated flow shall not be discharged directly onto ~~pervious~~ permeable pavement.

6-1304.2J ~~6-1304.2L~~ For ~~pervious~~ permeable pavement systems utilizing open jointed concrete blocks, handicapped parking spaces and associated pathways shall utilize concrete blocks without open joints.

6-1304.3 Maintenance

6-1304.3A ~~Pervious~~ Permeable pavement systems must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. The above does not preclude the use of ~~pervious~~ permeable pavement by the County on County-owned property. County maintained storm and sanitary sewer lines and their easements may be routed through areas of privately maintained ~~pervious~~ permeable pavement.

6-1304.3B Permeable pavement shall be posted with permanent signs designating the area as a water quality management area. Signs shall state that the area is surfaced with permeable pavement and list the restrictions specific to that type of pavement (e.g. no sanding, no storage of dirt, mulch, or other materials that might clog the pores in the pavement, etc.). Signs shall be posted at approximately 150-foot intervals along the perimeter of the permeable pavement with a minimum of one sign for each facility. (See Plate 81-6.)

6-1304.4 General Design Requirements

6-1304.4A ~~Water Quality~~ Treatment Volume. ~~For facilities designed to capture and treat the first 0.5 inch of runoff, the required water quality volume is 1,815 cubic feet per acre multiplied by the sum of the impervious area draining to the pervious pavement plus the area of the pervious pavement. For facilities designed to capture and treat the first 1.0 inch of runoff, the required water quality volume is 3,630 cubic feet per acre multiplied by the sum of the impervious area draining to the pervious pavement plus the area of the pervious pavement. The water quality volume must be filtered through the pavement to receive credit.~~ The required treatment volume shall be determined in accordance with Virginia Stormwater Design Specification No. 7, Permeable Pavement (Latest version referenced in the VSMP Regulations).

6-1304.4B Detention. For facilities designed to provide detention, the 1-year storm, the 2-year~~, 2-hour~~ storm, and the 10-year~~, 2-hour~~ storm must be routed through the facility or the facility may be designed to infiltrate the 10-year~~, 2-hour~~ storm volume. Routings shall be performed in accordance with § 6-1300 et seq. Inlets shall be provided or the aggregate base extended 2 feet beyond the edge of the pavement to convey stormwater in excess of the ~~water quality~~ treatment volume to the aggregate base or storage chambers below the ~~pervious~~ permeable pavement.

6-1304.4C For facilities designed to provide detention, the maximum water surface elevation for the 10-year ~~2-hour~~ storm shall be a minimum of 0.5 feet below the pavement bedding course.

6-1304.4D The detention release rate shall be controlled by a valve or cap on the end of the pavement underdrain within the structure.

6-1304.4E Pretreatment. Pretreatment for areas that sheet flow onto the pavement is not required. Inlets shall be designed to provide pretreatment of stormwater to prevent debris and sediments from entering the aggregate base or storage chambers. Where the aggregate base is extended beyond the edge of the pavement to convey stormwater to the aggregate base, an additional layer of filter fabric shall be provided 1 foot below the surface to prevent sediments from getting into the aggregate base.

6-1304.4F Underdrains shall be provided for all pervious pavement systems. The outfall of all underdrains must be in conformance with the adequate drainage requirements of § 6-0200 *et seq*.

6-1304.4G The bottom of the facility shall be a minimum of 4 feet above the groundwater table and bedrock for facilities designed to provide infiltration and a minimum of 2 feet above the groundwater table and bedrock for all other facilities as determined by field run soil borings. The bottom of the facility shall be below the frost line to prevent frost heave of the pavement.

6-1304.4H For facilities designed to provide infiltration, the underdrain shall be restricted as necessary so that the design infiltration rate plus the underdrain outflow rate equals the design draw down rate. The restriction shall be achieved by using an end cap with a hole to act as an orifice or a valve fitted onto the end of the underdrain. Alternatively, a flow control satisfactory to the Director may be provided within the outflow structure. See § 6-1604.1A(2) for orifice calculations. The minimum diameter of any orifice shall be 0.5 inch. Facilities shall be designed to dewater completely within 24 hours. If the facility can drain in the required time without any outflow through the underdrain, the end cap may be provided without a hole.

6-1304.4I For facilities utilizing infiltration, the design of the facility shall be in accordance with the soil testing, reporting and meeting procedures of § 4-0700 et seq. Soils with a CBR (minimum 96 hours soaked) less than 5 or that are highly expansive are not suitable for infiltration. Such soils would require compaction or other measures to be used as a pavement subgrade that would compromise their ability to infiltrate water. ~~Pervious~~ Permeable pavements on these soils shall be designed for no infiltration with unrestricted underdrains.

6-1304.4J Permeable pavement block systems require edge restraints to prevent movement of the pavement blocks from vehicle loads. Edge restraints may be standard VDOT curbs, standard VDOT combination curb and gutters, or precast or cast in place reinforced concrete borders a minimum 6 inches wide and 18 inches deep constructed with Class A3 concrete. Edge restraints shall be installed flush with the paver blocks.

6-1304.4K (107-10-PFM) Side slopes of the facility excavated below ground may be as steep as the *in situ* soils will permit. The bottom of the excavated bed shall be level or nearly level. All excavation must be performed in accordance with Virginia Occupational Safety and Health (VOSH) requirements. If the facility is located on problem soils, as defined in Section 107-2-1 (j) of the County Code, a professional authorized by the State shall specify the maximum acceptable slope for the excavation.

6-1304.4L Variations of the ~~pervious~~ permeable pavement designs in the typical details and schematics of permeable pavement facilities in Virginia Stormwater Design Specification No. 7, Permeable Pavement (Latest version referenced in the VSMP Regulations) ~~Plates 78-6, 79-6, and 80-6~~ may be approved by the Director provided the facility meets all of the requirements in § 6-1304 *et seq*.

6-1304.5 Pervious Pavement Design

6-1304.5A Because there is no above ground storage of stormwater runoff, the minimum area of the pervious pavement required to infiltrate the ~~water quality~~ treatment volume into the aggregate base is governed by the permeability of the pavement. This calculation is generally used to determine how much flow from adjoining impervious surfaces can be filtered through the permeable pavement or if detention provided for larger design storms will need supplemental inlets to direct storm runoff into the storage layer. The minimum area of the pervious pavement is computed as follows:

$A_p = (\cancel{WQ}T_v) / [(k_p/12)(t_s)]$

Where:

A_p = area of pervious pavement (ft^2)

$\cancel{WQ}T_v$ = ~~water quality~~ treatment volume (ft^3)

k_p = coefficient of permeability (in./hr.)

t_s = time base of design storm (hrs.)

6-1304.5B For design purposes, the permeability of the pavement is 5.0 inches/hour for porous concrete, ~~1.1~~ 3.0 inches/hour for porous asphalt pavement, and ~~3.0~~ 1.0 inches/hour for permeable pavement block systems and the time base of the design storm is 2 hours. After incorporating these values, the above equation reduces to:

$A_p = 1.2 \times T_v$ for porous concrete

$A_p = \cancel{5.455 \times WQ_v}$ $2.0 \times T_v$ for porous asphalt pavement

$A_p = \cancel{2.0 \times WQ_v}$ $6.0 \times T_v$ for permeable pavement block systems

6-1304.6 Aggregate Base/Storage Chamber Design

6-1304.6A Storage Volume. Storage for detention or infiltration may be provided by a layer of aggregate or aggregate in combination with storage chambers beneath the pervious pavement. Water flows into the storage layer either through an inlet structure or through the pavement. Water flows out of the storage layer either by infiltration into the underlying *in situ* soils or through a restricted underdrain. The design objectives are to infiltrate as much of the water as possible, to assure that there is complete drain down of the facility between storms, to meet the structural requirements for the pavement design, and to meet the physical constraints of the site.

6-1304.6B The required storage volume shall be determined in accordance with Virginia Stormwater Design Specification No. 7, Permeable Pavement (Latest version referenced in the VSMP Regulations).

~~6-1304.6A(1) For facilities designed to infiltrate the water quality volume, the amount of storage required is based on water quality volume minus the infiltration rate into the underlying *in situ* soils and the outflow through the underdrain during the 2 hour filling period. The required storage volume is computed as follows:~~

~~$V_s = WQT_v - [(k_s)(A_s)(t_s) / 12] - [3{,}600(Q_u)(t_s)]$~~

~~Where:~~
~~V_s = volume of storage (ft^3)~~
~~WQT_v = water quality volume (ft^3)~~
~~k_s = soil infiltration rate (in./hr.)~~
~~A_s = area of soil bed (ft^2)~~
~~t_s = time base of design storm (hrs.)~~
~~Q_u = outflow through underdrain (cfs)~~

~~6-1304.6A(2) For facilities designed to provide detention in addition to treating the water quality treatment volume, the water quality volume is replaced in the above equation by the total storm runoff volume for the design storm (V_{ds}). The required storage volume is computed as follows:~~

~~$V_s = V_{ds} - [(k_s)(A_s)(t_s) / 12] - [3{,}600(Q_u)(t_s)]$~~

~~6-1304.6B Storage Depth. Typically, the area of the soil bed will be known and the depth of the aggregate layer will be computed from the required storage and the porosity of the aggregate as follows:~~

~~For facilities designed to treat only the water quality volume:~~

~~$d_g = V_s / [(n_g)(A_s)]$~~

~~For facilities designed to provide detention add 0.5 feet to the above to provide the required separation (§ 6-1304.4C) between the bedding layer and the 10-year water surface elevation:~~

~~$d_g = V_s / [(n_g)(A_s)] + 0.5$~~

~~Where:~~
~~d_g = depth of aggregate layer (ft.)~~
~~V_s = volume of storage (ft^3)~~
~~n_g = porosity of aggregate~~
~~A_s = area of soil bed (ft^2)~~

~~The depth of the aggregate layer does not include the thickness of the bedding layer.~~
~~For volume calculations, use a porosity of 0.40 for VDOT #2, #3, and #57 stone.~~

6-1304.6C Check the computed depth of the aggregate layer against the required depth for installation of the underdrain system (4 inches plus the diameter of the largest underdrain pipe)

and the required depth of the pavement subbase (see § 7-0500 *et seq*.). The minimum required depth will be the greatest of these three values.

6-1304.6D Check the invert elevation of the aggregate layer against the elevation of the water table and bedrock. Also check that the facility can drain to the intended outfall.

6-1304.6E Facility Drain Time. The final step in the design of the aggregate layer is to compute the time that it takes the facility to drain. The facility must drain completely within 24 hours. The drain time is computed as follows:

$$t_d = V_s / [(k_s)(A_s) / 12 + 3{,}600(Q_u)]$$

Where:
t_d = total drain time for facility (hrs.)
V_s = volume of storage (ft^3)
k_s = soil infiltration rate (in./hr.)
A_s = area of soil bed (ft^2)
Q_u = outflow through underdrain (cfs)

6-1304.6F For facilities designed with unrestricted underdrains, computation of the storage volume, storage depth, and facility drain time are not necessary. However, it is still necessary to check the depth of the aggregate layer against the required depth for the pavement sub-base and the invert elevation of the bottom of the aggregate layer against the elevation of the water table, bedrock, and the intended outfall.

6-1304.6G For facilities designed to provide infiltration, the infiltration rate into the underlying in situ soils typically will be less than the flow rate through the pavement and the outflow through the underdrain will be restricted or absent such that some storage will be required. In performing computations of the storage volume, storage depth, and facility drain time, initially assume that the underdrain is capped and there is no outflow through the underdrain. If the allowable depth of the storage layer based on the elevation of the groundwater table or bedrock is insufficient to provide the necessary storage volume, storage may be increased by increasing the area of the aggregate layer and soil bed or by incorporating storage chambers. Alternatively, the underdrain may be provided with an orifice to decrease the amount of storage needed. If the total drain time of the facility is in excess of 24 hours, it will be necessary to increase the area of the aggregate base and soil bed or provide an orifice and recompute the total drain time through the facility. Outflow through the orifice may not exceed the pre-development peak flow rates for the 1-year, 2-year, and 10-year storms.

6-1304.7 Underdrains. Underdrains shall consist of perforated pipe ≥ 4 inches in diameter placed in a layer of washed VDOT #57 stone. VDOT #2 or #3 stone may be substituted for #57 stone when #2 or #3 stone is used for the aggregate base. There shall be a minimum of 2 inches of aggregate above and below the pipe. Laterals shall be a minimum of 4-6 inches in diameter.

Main collector lines and manifolds shall be a minimum of 6-8 inches in diameter. Underdrains shall be laid at a minimum slope of 0.5 percent. Underdrains shall have a maximum internal spacing of 20 feet on center and extend to within 10 feet of the perimeter of the aggregate base. Underdrains not terminating in an observation well/clean-out shall be capped. Underdrain pipe connected to structures shall be nonperforated within 1 foot of the structure. Cleanouts and observation wells shall be nonperforated within 1 foot of the surface. All stone shall be washed with less than 1 percent passing a #200 sieve. Clean-outs and observation wells shall have a screw or flange type cap, which shall be load-bearing when in a paved area.

6-1304.8 Materials Specifications

6-1304.8A Open jointed concrete blocks shall have a minimum thickness of 3 1/8 inches and conform to ASTM C 936-01 Standard Specification for Solid Concrete Interlocking Pavement Units. Joint openings shall be a minimum of 10 percent of the surface area of the pavement after installation. Joint openings shall be filled with VDOT #8, #8P, or #9 stone. VDOT #8 stone is recommended. VDOT #8P or #9 stone may be used where needed to fill narrow joints. All stone shall be washed with less than 1 percent passing a #200 sieve.

6-1304.8B Porous asphalt pavement shall be a minimum of 2.5 inches thick and conform to VDOT Road and Bridge Specifications for Asphalt Materials (Section 210) and Asphalt Cement (Section 211) except for aggregate gradation. The asphalt mix shall be 5.75 percent to 6.0 percent of dry aggregate by weight. The asphalt binder shall be modified with an elastomeric polymer to produce a binder meeting the requirements of PG 76-22 (AASHTO MP-1) and applied at a rate of 3.0 percent by total weight of the binder. Drain down of the asphalt binder shall be no greater than 0.3 percent (ASTM D 6390). The aggregate gradation shall be as specified in Table 6.21. Porous asphalt pavement shall have a minimum connected void space of 18 percent.

Table 6.21 Aggregate Gradation

U.S. Standard Sieve Size	Percent Passing
1/2 in.	100
3/8 in.	92-98
#4	34-40
#8	14-20
#16	7-13
#30	0-4
#200	0-2

6-1304.8C Pervious concrete shall conform to VDOT Road and Bridge Specifications for Hydraulic Cement Concrete (Section 217) except where contraindicated. Pervious concrete shall be designed to have a minimum thickness of 6.0 inches and a void space of 15 - 25% with an in-place unit weight of 105 – 135 lbs/ft^3. Designs in the range of 15 - 19% voids with a unit weight

of 127 – 132 lbs/ft^3 were found to be optimum for both strength and permeability in a 2006 study by the National Concrete Pavement Technology Center [*Mix Design Development for Pervious Concrete in Cold Weather Climates*, National Concrete Pavement Technology Center (NCPTC), Iowa State University, Final Report, February 2006]. The materials proportions should be within the ranges specified in the table below.

Materials Proportions for Pervious Concrete

Material	Proportion
Water/Cement ratio	0.27 – 0.34 (by mass)
Aggregate/Cement ratio	4.0 – 4.5 (by mass)
Fine/Coarse Aggregate ratio	0 – 0.1 (by mass)

Coarse aggregate shall be VDOT #67, #8, or #8P. Air entrainment shall be used to improve resistance to freeze/thaw cycles. However, air entrainment cannot be verified or quantified by standard test methods and an alternative test method is not currently available. A preliminary mix design must be included in the plan. A plan revision with the final mix design, if different than the preliminary design, must be submitted to DPWES for approval prior to construction. Appendix 6 of ACI 211.3R-02 (Guide for Selecting Proportions for No-Slump Concrete) provides a procedure for determining mix proportions for pervious concrete.

6-1304.8D ~~6-1304.8C~~ The bedding course for open jointed pavement blocks shall consist of 1.5 - 3 inches of washed VDOT #8, #8P, or #9 stone. VDOT #8 stone is recommended. VDOT #8P or #9 stone may be used to match the stone used in the joint openings. The thickness of the bedding course is to be based on the block manufacturer's recommendation. The bedding course for porous asphalt pavement shall consist of 1 to 2 inches of washed VDOT #57 stone. All stone shall be washed with less than 1 percent passing a #200 sieve. Pervious concrete does not require a bedding course.

6-1304.8E ~~6-1304.8D~~ The aggregate base course shall consist of washed VDOT #57 stone. The thickness of the base course is determined by runoff storage needs, the infiltration rate of *in situ* soils, structural requirements of the pavement sub-base, depth to watertable and bedrock, and frost depth conditions. VDOT #2 or #3 stone may be substituted as the base course material provided an adequate choker course of VDOT #57 stone is provided between the aggregate base course and the bedding course. All stone shall be washed with less than 1 percent passing a #200 sieve.

6-1304.8F ~~6-1304.8E~~ Underdrains shall be PVC pipe conforming to the requirements of ASTM F758, Type PS 28 or ASTM F949; HDPE pipe conforming to the requirements AASHTO M252 or M 294, Type S; or other approved rigid plastic pipe with a smooth interior. Underdrains shall be perforated with four rows of 3/8-inch holes with a hole spacing of 3.25 ± 0.25 inches or a combination of hole size and spacing that provides a minimum

inlet area ≥ 1.76 square inches per linear foot of pipe or be perforated with slots 0.125 inch in width that provides a minimum inlet area ≥ 1.5 square inches per linear foot of pipe.

6-1304.8G ~~6-1304.8F~~ Filter fabric. Filter fabric shall be a needled, non-woven, polypropylene geotextile meeting the requirements listed in Virginia Stormwater Design Specification No. 7 Permeable Pavement (Latest version referenced in the VSMP Regulations) ~~the requirements listed in Table 6.22~~. Heat-set or heat-calendared fabrics are not permitted.

~~Table 6.22 Filter Fabric Specifications~~	
~~Grab Tensile Strength (ASTM D4632)~~	~~≥ 120 lbs~~
~~Mullen Burst Strength (ASTM D3786)~~	~~≥ 225 lbs/in^2~~
~~UV Resistance (ASTM D4355)~~	~~70% strength after 500 hours~~
~~Flow Rate (ASTM D4491)~~	~~≥ 125 gal./min./ft^2~~
~~Apparent Opening Size (AOS) (ASTM D4751)~~	~~US #70 or #80 sieve~~

6-1304.9 Construction Specifications

6-1304.9A The owner shall provide for inspection during construction of the facility by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers and results of the inspections required under ~~§ 6-1304.9G(11) or § 6-1304.9H(6) and § 6-1304.9H(7)~~ § 6-1304.9G(2) or § 6-1304.9H(2) and § 6-1304.9H(3) or § 6-1304.9I(3) and § 6-1304.9I(4) shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1304.9B Pervious pavement facilities shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan. Preliminary grading of the area where pervious pavement is to be installed may be performed at the time the rest of the site is mass graded provided that positive drainage is maintained and the area is stabilized. For pervious pavement applications that will utilize infiltration, preliminary grading shall be a minimum of 2 feet above the final design

elevation of the bottom of the aggregate base and the area shall be immediately stabilized with no further construction traffic until the pervious pavement is installed.

6-1304.9C Areas where pervious pavement is to be installed should not be used for temporary sediment basins. Where unavoidable, the invert of the sediment basin shall be a minimum of 2 feet above the final design elevation of the bottom of the aggregate base.

6-1304.9D For facilities designed for full or partial exfiltration, the floor of the facility shall be scarified to a minimum depth of 6 inches to reduce soil compaction and leveled before the filter fabric and stone are placed. Any areas of the facility where a temporary sediment basin was located also shall have 2-3 inches of sand incorporated into the *in situ* soils.

6-1304.9E Filter fabric shall be placed on the bottom and sides of the facility. Strips of fabric shall overlap by a minimum of 2 feet. Fabric shall be secured a minimum of 4 feet beyond the edge of the excavation. Following placement of the aggregate and again after placement of the pavement or pavers, the filter fabric should be folded over placements to protect installation from sediment inputs. Excess filter fabric should not be trimmed until the site is fully stabilized.

6-1304.9F After installation of the filter fabric over the soil subgrade, a 2-inch lift of aggregate shall be placed for the underdrain bedding. Underdrain piping shall be installed and sufficient aggregate shall be placed around and over the underdrain pipe to prevent damage to the pipe prior to compaction. Aggregate shall be placed in 4- to 8-inch lifts and compacted with a static roller. At least four passes should be made with a minimum 10-ton static roller. The initial passes of the roller can be with vibration to consolidate the base material. The final passes should be without vibration. No visible movement should occur in the base material when compaction is complete.

6-1304.9G Installation of open jointed pavement blocks

<u>6-1304.9G(1) Installation of open jointed pavement blocks shall be in accordance with the construction sequence in Virginia Stormwater Design Specification No. 7 Permeable Pavement (Latest version referenced in the VSMP Regulations).</u>

~~6-1304.9G(1) The bedding course shall be placed in a single lift. The bedding course shall be leveled and pressed (choked) into the aggregate base with at least four passes of a 10-ton steel drum static roller. The bedding material should be moist to facilitate movement into the aggregate base. (Note: Install optional filter fabric per engineer's specifications prior to placement of bedding course.)~~

~~6-1304.9G(2) Edge restraints for open jointed pavement blocks shall be in place prior to installation of the bedding course and pavement blocks.~~

~~6-1304.9G(3) Prior to placement of the pavers, ¾ - 1 inch of the compacted bedding material shall be loosened and smoothed to an even surface.~~

~~6-1304.9G(4) Pavers may be placed by hand or with mechanical installers. Compact and seat pavers into the bedding material with a low amplitude 5,000 lb. ft., 75 to 95 Hz plate compactor.~~

~~6-1304.9G(5) Gaps at the edge of the paved areas shall be filled with cut pavers or edge units. When required, pavers shall be cut with a paver splitter or masonry saw. Cut pavers shall be no smaller than one-third of the full unit size.~~

~~6-1304.9G(6) Fill the openings and joints with aggregate until it is within ½ inch of the top surface. Remove excess aggregate by sweeping pavers clean. Compact the pavers again, vibrating the aggregate into the openings. Apply additional aggregate to the openings and joints, filling them completely. Remove excess aggregate by sweeping and compact the pavers. This will require at least two passes with the compactor.~~

~~6-1304.9G(7) Do not compact within 3 feet of the unrestrained edges of the pavers.~~

~~6-1304.9G(8) The system must be thoroughly swept to remove any sediment or excess aggregate immediately after construction.~~

~~6-1304.9G(9) Proof roll the surface after installation is complete.~~

~~6-1304.9G(10) The area shall be inspected for settlement. Any blocks that settle shall be reset and re-inspected.~~

6-1304.9G(2) ~~6-1304.9G(11)~~ The facility shall be inspected at 18-30 hours after a significant rainfall (0.5-1.0 inch) or artificial flooding to determine that the facility is draining properly.

6-1304.9H Installation of porous asphalt pavement

6-1304.9H(1) Installation of porous asphalt pavement shall be in accordance with the construction sequence in Virginia Stormwater Design Specification No. 7 Permeable Pavement (Latest version referenced in the VSMP Regulations).

~~6-1304.9H(1) The choker course shall be placed in a single lift. The choker course shall be leveled and pressed (choked) into the aggregate base with at least four passes of a 10-ton steel drum static roller. The choker course material should be moist to facilitate movement into the aggregate base.~~

~~6-1304.9H(2) Porous asphalt pavement is installed similarly to regular asphalt pavement. The pavement shall be laid in a single lift over the choker course. The laying temperature shall be~~

~~between 230 degrees F and 260 degrees F, with a minimum air temperature of 50 degrees F, to make sure that the surface does not stiffen before compaction.~~

~~6-1304.9H(3) Compaction of the surface course should be completed when the surface is cool enough to resist a 10-ton roller. One or two passes of the roller are required for proper compaction. More rolling could cause a reduction in the porosity of the pavement.~~

~~6-1304.9H(4) The mixing plant shall certify to the aggregate mix, the abrasion loss factor, and the asphalt content in the mix. The asphalt mix shall be tested for its resistance to stripping by water using ASTM 1664. If the estimated coating area is not above 95 percent, additional antistripping agents shall be added to the mix.~~

~~6-1304.9H(5) The mix shall be transported to the site in a clean vehicle with smooth dump beds sprayed with a non-petroleum release agent. The mix shall be covered during transportation to control cooling.~~

6-1304.9H(2) ~~6-1304.9H(6)~~ The full permeability of the pavement surface shall be tested by application of clean water at a rate of at least 5 gpm over the entire surface. All water must infiltrate directly without puddle formation or surface runoff.

6-1304.9H(3) ~~6-1304.9H(7)~~ The facility shall be inspected at 18-30 hours after a significant rainfall (0.5-1.0 inch) or artificial flooding to determine that the facility is draining properly.

6-1304.9I Installation of pervious concrete

6-1304.9I(1) Installation of pervious concrete shall be in accordance with the construction sequence in Virginia Stormwater Design Specification No. 7 Permeable Pavement (Latest version referenced in the VSMP Regulations).

6-1304.9I(2) Installation of pervious concrete should only be performed by qualified personnel. A National Ready Mixed Concrete Association (NRMCA) Certified Pervious Concrete Craftsman or Installer should be on site, overseeing each placement crew, during all concrete placement and finishing operations. Each placement crew should have at least two NRMCA certified Pervious Concrete Technicians. Information about certification requirements and programs is available from NRMCAand the Virginia Ready Mixed Concrete Association.

6-1304.9I(3) The full permeability of the pavement surface shall be tested by application of clean water at a rate of at least 5 gpm over the entire surface. All water must infiltrate directly without puddle formation or surface runoff.

6-1304.9I(4) The facility shall be inspected at 18-30 hours after a significant rainfall (0.5-1.0 inch) or artificial flooding to determine that the facility is draining properly.

6-1304.10 Plan Submission Requirements

6-1304.10A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures including underdrains.

6-1304.10B Cross section(s) of the facility with elevations showing the following as required: elevations and dimensions of inlet, outlet, underdrain, pavement course, bedding course, choker course, aggregate base, storage chambers, filter fabric, groundwater table and bedrock.

6-1304.10C Sizing computations for the facility including volume of storage and surface area of the facility required and provided.

6-1304.10D Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 7.

6-1304.10E ~~6-1304.10D~~ Hydrologic calculations for the facility.

6-1304.10F ~~6-1304.10E~~ Infiltration calculations as appropriate.

6-1304.10G ~~6-1304.10F~~ Soils analysis and testing results for facilities that utilize infiltration including the elevation of the groundwater table and bedrock.

6-1304.10H ~~6-1304.10G~~ A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1304.10I ~~6-1304.10H~~ Construction and materials specifications.

~~6-1304.11 Pervious Pavement Design Example:~~

~~6-1304.11A Given:~~

~~Parking lot area = 20,000 ft^2~~
~~Area of regular pavement (A_i) = 10,000 ft^2~~
~~Area of porous asphalt pavement (A_p) = 10,000 ft^2~~
~~Coefficient of permeability of porous asphalt pavement (k_p) = 1.1 in./hr.~~
~~Design infiltration rate of *in situ* soils (k_s) = 0.26 in./hr. (one-half of field measured rate of 0.52 in./hr.)~~
~~Porosity of gravel (n_g) = 0.40~~

~~6-1304.11B Determine the required area of the porous asphalt pavement (A_p) for a water quality volume (WQ_v) of 1.0 inch per acre (3,630 ft^3) of impervious pavement plus 1.0 inch per acre~~

~~(3,630 ft^3) of porous asphalt pavement. For design purposes, assume that the water quality volume can flow through the pervious pavement without surface runoff.~~

~~6-1304.11B(1) The water quality volume is:~~
~~WQv= 3,630 ft^3 (20,000 ft^2 / 43,560 ft^2) = 1,667 ft^3~~

~~6-1304.11B(2) The required area of the porous asphalt pavement is:~~

~~A_p = 5.455 x WQ_v = 5.455 x 1,667 = 9,094 ft^2~~
~~Area provided 10,000 ft^2 ≥ 9,094 ft^2 OK~~

~~Note that as long as the ratio of impervious area to porous asphalt pavement meets the requirements of § 6-1304.2G (≤ 3.4:1 for a water quality volume of 0.5 inches and ≤ 1.2:1 for a water quality volume of 1.0 inch), the area of the porous asphalt pavement will be sufficient to treat the water quality volume. In this example the ratio of impervious area to pervious pavement is 1:1.~~

~~6-1304.11C Determine the required storage volume (V_s) and depth (d_g) of the gravel layer to provide for infiltration of the entire water quality volume (WQ_v) (1,667 ft^3). The design infiltration rate (k_s) is equal to half of the field measured rate of 0.52 in/hr. Assume that the area of the soil bed (A_s) is equal to the area of the porous asphalt pavement (A_p). Ignore any additional storage that may be provided by the underdrain pipes and assume that there is no outflow (Q_u) through the underdrain.~~

~~6-1304.11C(1) The required storage volume is:~~

~~$V_s = WQ_v - [(k_s)(A_s)(t_s) / 12] - [3{,}600(Q_u)(t_s)]$~~
~~$= 1{,}667 - [0.26(10{,}000)(2) / 12] - 0$~~
~~$= 1{,}233.7\ ft^3$~~

~~Use: V_s = 1,234 ft^3~~

~~6-1304.11C(2) Compute the depth of the gravel storage area for a soil bed area of 10,000 square feet and a storage volume of 1,234 ft^3.~~

~~$d_g = V_s / [(n_g)(A_s)]$~~
~~$= 1{,}234 / [(0.40)(10{,}000)]$~~
~~$= 0.31$ ft.~~

~~6-1304.11C(3) Check the computed depth of the aggregate layer against the required depth for installation of the underdrain system and the required depth of the pavement subbase. The minimum required depth will be the greatest of these three values.~~

~~Check the depth between the bottom of the gravel storage area and the groundwater table and bedrock elevations from soil borings. Also check that the facility can drain to the intended outfall.~~

~~6-1304.11C(4) Compute the total drain time for the facility for a soil bed area of 10,000 square feet and a storage volume of 1,667 cubic feet (must be less than 24 hours).~~

$t_d = V_s / [(k_s)(A_s) / 12 + 3{,}600(Q_u)]$
$= 1{,}667 / [(0.26)(10{,}000) / 12 + 0]$
$= 7.7$ hrs. $\leq$ 24 hrs. OK

~~6-1304.11D Redesign the facility to provide detention of the 10-year, 2-hour storm in addition to water quality control and to maximize infiltration. Note that an inlet or an extension of the aggregate base beyond the edge of the pavement will be required to deliver the storm volume in excess of the water quality volume (1,667 cubic feet) to the gravel storage layer. The 10-year, 2-hour storm volume is 3 inches per acre (10,890 cubic feet) of impervious pavement and 3 inches per acre (10,890 cubic feet) of porous asphalt pavement. Assume the gravel storage layer fills in 2 hours and that there is no outflow through the orifice during the filling period.~~

~~6-1304.11D(1) The 10-year 2-hour storm volume is:~~

$V_{10} = 10{,}890\ ft^3 (20{,}000\ ft^2 / 43{,}560\ ft^2)$
$= 5{,}000\ ft^3$

~~6-1304.11D(2) Determine the required storage volume (V_s).~~

$V_s = V_{10} - [(k_s)(A_s)(t_s) / 12] - [3{,}600(Q_u)(t_s)]$
$= 5{,}000 - [0.26(10{,}000)(2) / 12] - 0$
$= 4{,}567\ ft^3$

~~6-1304.11D(3) Compute the depth of the gravel storage area for a soil bed area of 10,000 square feet and a storage volume of 4,567 cubic feet.~~

$d_g = V_s / [(n_g)(A_s)] + 0.5$
$= 4{,}567 / [(0.40)(10{,}000)] + 0.5$
$= 1.64$ ft.

~~Check the depth between the bottom of the gravel storage area and the groundwater table and bedrock elevations from soil borings. If 1.64 feet is too deep, adjust the depth by providing additional storage in pipes or chambers or by enlarging the footprint of the facility.~~

~~6-1304.11D(4) Compute the total drain time for the facility for a soil bed area of 10,000 square feet and a storage volume of 4,567 cubic feet. (Must be less than 24 hours.)~~

~~$t_d = V_s / [(k_s)(A_s) / 12 + 3{,}600(Q_u)]$~~
~~$= 4{,}567 / [(0.26)(10{,}000) / 12 + 0]$~~
~~$= 21.1$ hrs. $\leq$ 24 hrs. OK~~

~~6-1304.11E As a final example, assume that there is no infiltration into the *in situ* soils and we want to address an inadequate outfall by providing maximum detention of the 10-year storm. This will require that the entire 10-year storm volume be stored in the gravel storage layer and an orifice be designed for the underdrain system to keep the total drain time for the facility to less than 24 hours.~~

~~6-1304.11E(1) Compute the depth of the gravel storage area for a soil bed area of 10,000 square feet and a storage volume of 5,000 cubic feet.~~

~~$d_g = V_s / [(n_g)(A_s)] + 0.5$~~
~~$= 5{,}000 / [(0.40)(10{,}000)] + 0.5 = 1.75$ ft.~~

~~Check the depth between the bottom of the gravel storage area and the groundwater table and bedrock elevations from soil borings. If 1.75 feet is too deep, adjust the depth by providing additional storage in pipes or chambers or by enlarging the footprint of the facility.~~

~~6-1304.11E(2) Size an orifice to keep the total drain time for the facility to 24 hours for a maximum water level of 1.25 feet in the gravel storage layer (0.5 feet below the bedding layer) and a storage volume of 5,000 cubic feet. Assume that the invert of the orifice is the same as the invert of the underdrain and that the orifice has a diameter of 2 inches. The average energy head (H_o) above the centroid of the opening will be half of the maximum water level minus 2 inches (0.167 feet) for the pipe bedding minus 1 inch (0.083 feet), half of the diameter of the orifice.~~

~~The required discharge rate is computed from:~~

~~$Q_u = (V_{10} / t_d) / 3{,}600$~~
~~$= (5{,}000 / 24) / 3{,}600$~~
~~$= 0.0579$ cfs~~

~~The size of the required orifice is computed using the standard orifice equation (see § 6-1604.1A(2)):~~

~~$A = Q_o / C(2gH_o)^{1/2}$~~

~~Where:~~
~~Q_o = discharge (cfs)~~
~~C = orifice coefficient, typically set at 0.6 for sharp edged orifices but may vary depending on orifice geometry~~

~~A = flow area (ft^2)~~
~~g = acceleration of gravity, 32.2 ft./sec^2~~
~~H_o = energy head above centroid of opening (ft.)~~

~~The average energy head is:~~
~~H_o = (1.25 – 0.167 - 0.083) / 2 = 0.5~~

~~The orifice area is:~~
~~$A = 0.0579 / 0.6[(64.4)(0.5)]^{1/2} = 0.017\ ft^2$~~

~~The diameter of the orifice is:~~
~~$D = 2(A / \pi)^{0.5}$~~
~~$= 2(0.017 / 3.1416)^{0.5}$~~
~~= 0.147 ft. = 1.76 in.~~

~~The computed diameter of the orifice is less than the assumed diameter. Therefore, the average energy head will be slightly higher than the value used in the computations and the facility will drain within 24 hours.~~

~~6-1304.11F Inflow-outflow hydrograph routings would provide a more accurate solution for these examples.~~

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1305 (Retention and Detention Ponds) by revising it to read as follows:

6-1305 Retention and Detention Ponds

6-1305.1 Small ponds created by constructing low earth dams across natural drainage courses or by excavating and regrading of a development site provide capacity for stormwater runoff detention.

6-1305.1A The ponds may be located in areas where other site development is expensive or unsuitable or may be made an integral part of the site landscaping designs.

6-1305.1B Stormwater permanently retained in these ponds may be considered a potential resource suitable for a variety of uses, including firefighting, irrigation supplies and recreational sources.

6-1305.1C In addition to providing stormwater discharge reduction capabilities, detention ponds provide storage for sediment and pollution control in runoff, especially during the construction phase of development.

6-1305.1D (46-94-PFM) If embankments are used to dam natural drainage courses, they must be designed in accordance with § 6-1600 *et seq*.

6-1305.2 (46-94-PFM) Detention ponds and their primary outlet or principal spillway shall be designed to detain the increased runoff generated by development of a site based on the 1-year, 2-year, and the 10-year frequency design floods. Emergency or secondary spillways for detention ponds shall be designed in accordance with § 6-1600 et seq., except where the watershed is less than 20 acres, in which case the Spillway Design Flood hydrograph may be obtained using the Rational Method.

6-1305.3 Outlets and emergency spillways shall be placed on either undisturbed ground or on a stabilized foundation and not in fill areas.

6-1305.4 (32-90-PFM) The planting of trees and other landscaping, except grass and other ground covers approved by the Director, on the structural embankment of any earth dam which intermittently or permanently impounds water, including stormwater management facilities, is prohibited.

6-1305.5 (32-90-PFM) All plans containing an earth dam which intermittently or permanently impounds water shall include a restrictive easement which covers the entire structural embankment and prohibits the planting of trees and all other landscaping, except grass and other ground covers approved by the Director. This easement shall be recorded in the Land Records of the County and shall run with the land.

6-1305.6 Design calculations for detention ponds shall be submitted with the site drainage plan and shall generally include the following:

6-1305.6A (46-94-PFM) Hydrographs of the 1-year, 2-year, 10-year, emergency spillway and freeboard design storm inflow to the facility.

6-1305.6B Volume of storage vs. depth of storage curve.

6-1305.6C Outlet design calculations.

6-1305.6D Head discharge curve for the selected outlet size.

6-1305.6E (46-94-PFM) The routed or discharge hydrograph from the facility for the 1-year, 2-year, 10-year, emergency spillway and freeboard design inflows.

6-1305.6F (46-94-PFM) Emergency spillway design calculations for ponds shall conform with the requirements of § 6-1603.

6-1305.6G (46-94-PFM) Embankment design computations shall conform to the requirements of § 6-1605.

6-1305.6H Calculations or effects (if any) on established floodplain boundaries.

6-1305.7 Other items that shall be included with or on the plans are:

6-1305.7A (46-94-PFM) When possible, the shape of the pond should conform with the natural topography.

6-1305.7B (46-94-PFM) Identification of required easements.

6-1305.7C Landscaping and fencing around detention ponds when access exposes the public to unusual risk.

6-1305.7D Properly executed maintenance agreements.

6-1305.7E (46-94-PFM) For wet detention ponds a drain valve shall be provided in accordance with § 6-1604.

6-1305.7F (35-91-PFM) The developer shall be required to provide and post signs informing the public where detention and retention ponds are to be located. Signs must be located so as to be visible from the adjoining lots and roadways from which the facilities may be viewed. The number of signs required for a site will depend upon the sight characteristics to meet the above visibility requirements. Signs shall be maintained by the developer from the time the plans for the ponds are approved by DPWES until bond release. At the time of bond release, the signs shall be removed by the developer. See Plate 41B-6 for details.

~~6-1305.8 (46-94-PFM) Example of Detention Pond Design (for a detention pond with a watershed less than 20 acres):~~

~~6-1305.8A Given: A hypothetical 10-acre site to be developed into a commercial shopping center. Design a detention pond in an existing natural drainage course. The natural topography limits the maximum height of the pond to 6 feet, allowing 1-foot freeboard, the maximum height of water will be 5 feet.~~

~~6-1305.8B Calculations:~~

~~Pre-development Runoff:~~

~~Runoff coefficient: C = 0.30~~
~~Time of concentration: t_c = 15 minutes~~
~~Rainfall intensity:~~
~~I = 3.5 in./hr. for 2-year frequency storm from Plate 3-6~~
~~I = 5.1 in./hr. for 10-year frequency storm from Plate 3-6~~
~~Q_{2yr} = CIA = (0.30) (3.5 in./hr.) (10 acre) = 10.5 cfs~~

~~Q_{10yr} = CIA = (0.30) (5.1 in./hr.) (10 acre) = 15.3 cfs~~

~~Therefore, the maximum allowable runoff from the detention pond from the primary outlet(s) shall be limited to 10.5 cfs on the 2-year storm and 15.3 cfs on the 10-year storm.~~

~~Runoff after Development:~~

~~Runoff coefficient: C = 0.9~~
~~Impervious area = (0.90)(10 acres) = 9 impervious acres. Time of concentration: t_c = 5 minutes~~

~~6-1305.8B(1) (46-94-PFM) From unit hydrograph (see Table 6.6) for 5-minute time of concentration, plot inflow hydrograph for a 9 impervious acre area (see Plate 42-6).~~

~~6-1305.8B(2) On the same graph, plot a straight line from the zero intercept to a point on the hydrograph at the 10.5 cfs point. The area between these 2 curves is the approximate volume of storage required. The planimetered area = 9.2 in². The approximate volume = (9.20)(4,050) = 37,300 cubic feet.~~

~~6-1305.8B(3) Limiting depth of storage is 5 feet. Assuming the 2-year storm storage requirement will be approximately 75 percent of the 10-year storage requirement, we have Vol. 10-year/37,300 = 100/75 or 49,600 ft³, say 50,000 ft³, for 5 feet of depth. Hence, design detention pond to have a surface area of 10,000 square feet.~~

~~6-1305.8B(4) Outflow pipe design – use FHWA culvert charts in the VDOT Drainage Manual. Assume HW/D = 2.0 to 3.0~~

~~From concrete pipe culvert with inlet control chart at 10.5 cfs outflow: Diameter of culvert is 15 inches to 18 inches. Assume 15 inches outlet pipe.~~

~~6-1305.8B(5) Plot the volume of storage vs. the depth of storage curve and the depth of storage vs. the discharge curve. The first curve is obtained from topography and grading data and the second curve is obtained from FHWA culvert charts for the selected pipe size (see Plate 43-6).~~

~~6-1305.8B(6) Route the 2-year inflow hydrograph through detention facility by using Plates 42-6 and 43-6. Following is a narrative of the procedure.~~

~~6-1305.9 The basic equation for determining the volume of storage required in a detention facility is that the volume of storage equals the volume of flow into the facility minus the volume of flow released from the facility (see established format in Table 6.23).~~

~~6-1305.9A For each 5 minute increment of time, the rate of flow into the facility is determined from the inflow hydrograph on Plate 42-6, is averaged with the rate of flow for the previous 5 minute~~

~~increment, and this average value is multiplied by the time increment of 5 minutes or 300 seconds to obtain the incremental volume in for that particular 5 minute period (Column 3 of Table 6.23).~~

~~Table 6.23 2-Year Storm Routing~~

	1	2	3	4	5	6	7	8	9	10	11	12
Time	**In-flow Rate cfs**	**Avg Inflow Rate cfs**	**Vol. ft³**	**Storage Carry-over ft³**	**Total ft³**	**Trial WS El. ft.**	**Out-flow Rate cfs**	**Avg Outflow Rate cfs**	**Vol Out ft³**	**Bal in Storage ft³**	**Cor-resp WS El. ft.**	
0	0		0				0					
		24.5						1.0				
5	49		7,350		7,350	.9	2.0		300	7,050	.7	ok
		42						3.95				
10	35		12,600	7,050	19,650	1.8	5.9		1,185	18,465	1.8	ok
		29.3						7.0				
15	23.5		8,780	18,465	27,245	2.6	8.1		2,100	25,145	2.5	ok
		21.5						8.5				
20	19.5		6,440	25,145	31,585	3.0	9.0		2,550	29,030	2.9	ok
		18						9.3				
25	16.5		5,400	29,030	34,340	3.3	9.6		2,790	31,640	3.2	ok
		15.5						9.7				
30	14		4,650	31,640	36,290	3.4	9.8		2,910	33,380	3.3	ok
		12.8						9.8				
35	11.5		3,840	33,380	37,220	3.4	9.8		2,940	34,280	3.4	ok
		10.8						9.8				
40	10		3,240	34,280	37,520	3.4	9.8		2,940	34,580	3.4	ok
		9.3						9.8				
45	8.5		2,800	34,580	37,380	3.4	9.8		2,940	34,440	3.4	ok
		7.8						9.7				
50	7.0		2,340	34,440	36,780	3.3	9.6		2,910	31,350	3.2	ok

~~Therefore, the maximum storage required is 34,580 ft³, maximum depth of storage is 3.4 ft., and the maximum rate of discharge is 9.8 cfs.~~

~~6-1305.9B This incremental volume is summed with the balance in storage (Column 10 and Column 4) to yield the accumulated storage at the end of the particular time increment (Column 5).~~

~~6-1305.9C A trial water surface elevation is assumed and, from Plate 43-6, the rate of runoff or outflow is determined. These values are placed in Columns 6 and 7, respectively.~~

~~6-1305.9D An average outflow rate is calculated in Column 8, and multiplied by the time increment of 300 seconds to determine the volume released from the detention facility (Column 9).~~

~~6-1305.9E Volume (in) minus volume (out) equals storage (Column 10), and is compared to the trial water surface elevation assumed.~~

~~6-1305.9E(1) If the values differ by more than 0.1 feet, assume a new trial water surface elevation and repeat the process.~~

~~6-1305.9E(2) If the values are less than 0.1 foot different, the routing for that 5-minute increment is balanced and the procedure is repeated for the next 5-minute increment, and so on.~~

~~6-1305.9F When the balance of runoff in storage (Column 10) begins to decrease in value, the detention pond is beginning to draw down and the maximum required volume of detention has been reached.~~

~~6-1305.9G The maximum rate of outflow, maximum required storage and maximum height of storage can be read directly from Table 6.23.~~

~~6-1305.9G(1) This particular problem yields the following results:~~

~~Q_{2yr} (max) = 9.8 cfs~~
~~Vol. of provided storage = 34,580 ft^3~~
~~Max height of storage = 3.4 ft.~~

~~6-1305.9G(2) These quantities compare favorably with the assumed 2-year design of the pond and meet the 10.5 cfs maximum outflow requirements established above.~~

~~6-1305.10 Proceed now to the second stage of detention, which limits the 10-year storm to the predeveloped peaks.~~

~~6-1305.10A Calculations:~~

~~6-1305.10A(1) Predevelopment Runoff:~~

~~Runoff Coefficient: C = 0.30~~
~~Time of Concentration: t_c = 15 minutes~~
~~Rainfall Intensity: I = 5.10 in./hr. for 10-year frequency storm from Plate 3-6~~

~~Q = CIA = (0.30)(5.10 in./hr.)(10 acres) = 15.3 cfs~~
~~Therefore, the maximum allowable runoff from the detention pond from the primary outlet shall be limited to 15.3 cfs.~~

~~6-1305.10A(2) Runoff after Development:~~

~~Runoff Coefficient: C = 0.9~~
~~Impervious Area = (0.90)(10 acres) = 9 acres~~
~~Time of Concentration: t_c = 5 minutes~~

~~6-1305.10B From unit hydrograph for 5 minute time of concentration, plot inflow hydrograph for a 9 impervious acre area (see Plate 44-6).~~

~~6-1305.10C On the same graph, plot a straight horizontal line along the 5-cfs discharge rate which is an assumption that the average outflow rate from the lower pipe is half the peak rate found on the 2-year routing above (i.e. 9.8/2 or say 5 cfs).~~

~~6-1305.10C(1) Since 34,580 cubic feet of storage is required to fulfill the 2-year detention requirement let us find out approximately at what time this volume would be fully utilized.~~

~~6-1305.10C(2) To approximate this time strike a vertical line at say 15 minutes and 25 minutes and measure the volumes between the inflow and assumed constant rate outflow. The values are 31,800 cubic feet and 44,000 cubic feet respectively.~~

~~6-1305.10C(3) This gives a difference of 12,200 cubic feet in 10 minutes or a rate of change of approximately 1,220/minute.~~

~~6-1305.10C(4) Since at 15 minutes we have used 31,800 cubic feet and we are looking for the time when 34,580 cubic feet will be required, we take 34,580 cubic feet - 31,800 cubic feet - 2,780 cubic feet/1,220 cubic feet/minute = 2.2 minutes additional or say 17 minutes (15 minutes + 2.2 minutes).~~

~~6-1305.10C(5) Hence at 17 minutes the lower pond 2-year detention facility is full; we draw a new discharge line from 17 minutes average flow of 5 cfs to the allowable discharge rate of 15.3 cfs on the inflow hydrograph curve and measure the volume between the inflow and outflow lines.~~

~~6-1305.10C(6) This gives a first approximation value of about 46,500 cubic feet or the amount of total storage required to accommodate both the 2-year and 10-year storms.~~

~~6-1305.10D Using the elevation – storage curve, we find the depth in the pond will be approximately 4.6 feet.~~

~~6-1305.10D(1) At this depth the 15-inch diameter pipe will discharge approximately 12.2 cfs.~~

~~6-1305.10D(2) With a permissible outflow of 15.3, this leaves a balance of 15.3 – 12.2 = 3.1 cfs to be provided by another opening.~~

~~6-1305.10D(3) Assuming a weir or slot of depth 4.6 feet – 3.4 feet = 1.2 feet of head we can approximate the length from the weir formula $Q = 3LH^{3/2}$ or L = 0.8 feet, say 1-foot long slot on a vertical riser beginning at elevation 3.4 feet.~~

~~6-1305.10E An elevation – discharge curve is developed for this slot and added to the 15-inch diameter pipe curve on Plate 43-6 beginning at elevation 3.4 feet.~~

~~6-1305.10F The routing is then performed as was done on the 2-year storm and is shown on Table 6.24.~~

~~6-1305.10F(1) This results in a peak discharge out of 14.8 cfs at elevation 4.5 feet.~~

~~6-1305.10F(2) It reaches the peak at time 35 minutes and utilized 44,490 cubic feet of storage.~~

~~6-1305.10F(3) These quantities again compare favorably with the assumed 10-year design parameters, and meet the 15.3 cfs maximum outflow requirements established above.~~

~~6-1305.10G (46-94-PFM) The emergency spillway shall be designed to meet the requirements of § 6-1603 and § 6-1604, except as noted in § 6-1305.2.~~

~~6-1305.10H When the depth of storage exceeds 4.5 feet, outflow is expected to continue through the primary spillway as well as through the secondary emergency spillway.~~

~~6-1305.10H(1) (46-94-PFM) As an example, assume the outflow culvert pipe is clogged and the emergency spillway is a weir designed to pass the entire 100-year storm:~~

~~Q(100) = CIA = (0.9)(9.84 in./hr.)(10 acres) = 88.6 cfs~~

~~Q (weir) = CLH$^{1.5}$~~
~~C = 3.0; H = 0.9 ft.; Therefore, L = (88.6 / (3.0)(0.9)$^{1.5}$ = 34.6 ft.~~

~~6-1305.10H(2) The banks of the pond, the overflow weir, and the outlet channel must be adequately protected from erosion, and the capacity of the emergency overflow channel must be sufficient to pass the 100-year storm. Energy dissipaters will be required as appropriate.~~

~~Table 6.24 10-Year Storm Routing~~

	~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~	~~8~~	~~9~~	~~10~~	~~11~~	~~12~~
~~Time~~	~~In-flow Rate cfs~~	~~Avg Inflow Rate cfs~~	~~Vol ft³~~	~~Storage Carry-over ft³~~	~~Total ft³~~	~~Trial WS El. ft.~~	~~Out-flow Rate cfs~~	~~Avg Outflow Rate cfs~~	~~Vol Out ft³~~	~~Bal in Storage ft³~~	~~Cor-resp WS El. ft.~~	
~~0~~	~~0~~		~~0~~				~~0~~					
		~~33~~						~~1.4~~				
~~5~~	~~66~~		~~9,900~~		~~9,900~~	~~.9~~	~~2.3~~		~~420~~	~~9,480~~	~~.9~~	~~ok~~
		~~56~~						~~5.3~~				
~~10~~	~~47~~		~~16,300~~	~~9,480~~	~~26,280~~	~~2.5~~	~~7.8~~		~~1,590~~	~~24,690~~	~~2.5~~	~~ok~~
		~~39.3~~						~~8.8~~				
~~15~~	~~31.5~~		~~11,775~~	~~24,690~~	~~36,465~~	~~3.4~~	~~9.8~~		~~2,640~~	~~33,825~~	~~3.4~~	~~ok~~
		~~28.8~~						~~10.6~~				
~~20~~	~~26~~		~~8,625~~	~~33,825~~	~~42,450~~	~~3.8~~	~~11.4~~		~~3,180~~	~~39,270~~	~~3.9~~	~~ok~~
		~~24~~						~~12.8~~				
~~25~~	~~22~~		~~7,200~~	~~39,270~~	~~46,470~~	~~4.9~~	~~14.2~~		~~3,840~~	~~42,630~~	~~4.3~~	~~ok~~
		~~20.3~~						~~14.5~~				
~~30~~	~~18.5~~		~~5,550~~	~~42,630~~	~~48,180~~	~~4.4~~	~~14.8~~		~~4,350~~	~~43,830~~	~~4.4~~	~~ok~~
		~~17~~						~~14.8~~				
~~35~~	~~15.5~~		~~5,100~~	~~43,830~~	~~48,930~~	~~4.4~~	~~14.8~~		~~4,440~~	~~44,490~~	~~4.5~~	~~ok~~
		~~14.5~~						~~14.8~~				

~~40~~	~~13.5~~	~~12.5~~	~~4,350~~	~~44,490~~	~~48,840~~	~~4.4~~	~~14.8~~	~~14.5~~	~~4,440~~	~~44,400~~	~~4.4~~	~~ok~~
~~45~~	~~11.5~~		~~3,750~~	~~44,400~~	~~48,150~~	~~4.3~~	~~14.2~~		~~4,350~~	~~43,800~~	~~4.4~~	~~ok~~
~~Therefore, the maximum storage required is 44,490 ft³, maximum depth of storage is 4.5 feet, and the maximum rate of discharge is 14.8 cfs.~~												

6-1305.8 ~~6-1305.10I~~ Kentucky 31 tall fescue, the standard grass for most planting, has limitations for use in detention ponds. If the roots are saturated for more than three days, the grass will die. If the drawdown time is less than three days, it can be used. For non-shaded locations, bermuda grass makes good cover, and is very water tolerant. It may be seeded or sprigged. If sprigged on 1-foot centers in the spring or early summer prior to July 1, a good ground cover will develop in about six weeks. Reed canary grass is another satisfactory and water tolerant cover. It grows to a height of 3-4 feet. It will grow in some shade but must be seeded in the fall from the current year's crop.

6-1305.9 ~~6-1305.10J (46-94-PFM)~~ Table 6.6 and Plate 40-6 show inflow hydrographs for various 10-year, 2-hour storms with times of concentration from 5 minutes to 30 minutes.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1306 (Maintenance Design Considerations) by revising it to read as follows:

6-1306 Maintenance Design Considerations

6-1306.1 The maintenance impact of stormwater management and BMP facilities is considered to be a primary concern to the County and to the future operation of these facilities.

6-1306.2 Engineers in the preparation of plans for construction are urged to include maintenance and operation of these facilities as one of the primary design considerations.

6-1306.3 The following shall be included in design considerations:

6-1306.3A All access ways shall be designated on plans and cleared, graded, or constructed with the facility construction.

6-1306.3B Proximity of facilities to public right-of-way shall be considered in order to minimize the length of access way.

6-1306.3C Multiple accesses on major facilities should be provided.

6-1306.3D Standard drainage easement agreements are not acceptable for access; therefore, special access easement agreements are to be executed which shall preclude planting of shrubs, construction of fences and other structures within the easement.

6-1306.3E Grading of the access to and around facilities shall not create steep slopes (maximum 3:1) in order to accommodate easy access for maintenance vehicles.

6-1306.3F (46-94-PFM) All facilities, including wet ponds, underground chambers, etc., shall provide accessibility with an all weather vehicular access way with a minimum 12-feet wide surface. Surfaces may be made of geosystems such as Geogrid, Grassrings, Geoweb, or Grasscrete or may be made of asphalt, concrete or gravel. The specific situation and physical conditions shall be considered when choosing surface materials and access ways shall be designed to support the anticipated maintenance vehicles.

6-1306.3F(1) When a private pipestem driveway is used for maintenance access to a stormwater management facility, the pavement section shall be constructed in accordance with Plates 23-7 and 24-7. A CBR test is required for the shared portion of the pipestem driveway, and for CBR test values less than 10, 1 inch of additional aggregate subbase shall be provided for each point below 10. Pavement sections based on Plate 23-7 may provide an equivalent thickness index through the use of thicker asphaltic concrete layers.

6-1306.3G As these facilities are generally in close proximity to dwellings and may be subject to vandalism, principal spillways and other devices shall be designed to minimize tampering.

6-1306.3H (72-01-PFM) Underground chambers shall provide two or more access points, at least one of which shall be a 4-foot x 4-foot access door, double leaf, aluminum, BILCO Model JD-2AL or approved equal, for each major storage chamber or run of pipe for ventilation and cleaning, and be large enough to accommodate cleaning equipment. Access doors installed in areas subject to vehicle loads shall be BILCO Model JD-2AL H 20 or approved equal. Generally, the minimum height where possible, shall be 72 inches, in order to facilitate maintenance.

6-1306.3I (46-94-PFM) The design of ~~the~~ dry ponds ~~bottom~~ used for water quantity control only shall include a concrete low flow channel (trickle ditch) in accordance with § 6-1604 or a concrete apron in front of the riser structure. The minimum pond floor grade shall be 2 percent minimum into the trickle ditch.

6-1306.3J (46-94-PFM) Trash racks for ponds shall be designed and provided in accordance with § 6-1604. Where trash racks are provided, they shall be removable as a unit by unbolting, without destroying the structure. Access to the trash rack shall be provided immediately above the rack in the underground chambers.

6-1306.3K Where pipe storage is permitted all pipes shall be reinforced concrete with parged joints in facilities maintained by DPWES. Any other material shall be specifically approved by the Director.

6-1306.3L Where utilized, underground chambers shall be only appurtenant structures to the site and through drainage storm sewer systems. The stormwater management facilities shall not be incorporated as an in-line system, but be designed as a parallel or perpendicular appurtenant structure.

6-1306.3M Underground chambers shall provide a smooth contoured bottom to facilitate silt and debris removal.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1307 (Bioretention Filters and Basins) by revising it to read as follows:

6-1307 Bioretention ~~Filters and Basins (98-07-PFM)~~

6-1307.1 General.

6-1307.1A ~~6-1307.1~~ Bioretention filters and basins (a.k.a. rain gardens) are landscaped areas in shallow depressions that are subject to temporary ponding of stormwater runoff. The principal components of bioretention facilities are plants that tolerate fluctuations in soil moisture and temporary ponding of water, a mulch layer, an engineered soil media, a gravel layer, and an underdrain that is connected to the storm drain system or day lighted. The soil media is highly permeable and well drained. Water quality control is provided by filtering storm water runoff through the soil media and mulch, biological and chemical reactions in the soil, mulch, and root zone, plant uptake, and infiltration into the underlying soil. The void spaces in the soil can be used to store runoff for detention or infiltration to provide reductions in the peak rate and volume of stormwater runoff. Additional infiltration capacity or storage for detention can be obtained by using a gravel layer alone or in combination with storage chambers below the soil media.

6-1307.1B ~~6-1307.1A~~ Bioretention filters are designed to provide water quality control and detention of storm water runoff from small storms. Bioretention filters include underdrains that allow water that has passed through the soil media to be freely discharged.

6-1307.1C ~~6-1307.1B~~ Bioretention basins are designed to provide water quality control and retention of storm water. Bioretention basins rely on infiltration into the underlying *in situ* soils to drain down between storms. Bioretention basins, as utilized in Fairfax County, generally include underdrains that are capped or have restricted outflow. This allows a bioretention basin to be converted to a bioretention filter if the infiltration capacity of the *in situ* soils is reduced over time due to clogging of the soil pores.

6-1307.1D Small-scale or Micro-Bioretention used on an individual residential lot is commonly referred to as a Rain Garden.

6-1307.1E ~~6-1307.1C~~ Bioretention facilities are best suited for small drainage areas that have low sediment loads. Pretreatment techniques that allow runoff to flow from impervious surfaces

through well established lawns, naturally vegetated buffers, or specially constructed filter strips are used to remove coarse and fine grained sediments that may otherwise clog the surface of facilities. Level spreaders or stone energy dissipaters may be used to prevent concentrated flow from creating scour paths within the facility. Bioretention facilities should not be located where wooded areas would not otherwise need to be cleared as part of the site development.

~~6-1307.1D (102-08-PFM) Trees within bioretention facilities may be used to meet the requirements of Chapter 122 of the Code and § 12-0000 *et seq*. of the PFM.~~

6-1307.1F Bioretention shall conform to Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations, except as modified herein.

6-1307.2 Feasibility and Limitations. ~~Location and Siting~~

6-1307.2A In residential areas, bioretention facilities and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the ~~Subdivision or Zoning~~ Stormwater Management Ordinance except as noted herein. The Director may approve the location of bioretention facilities on individual buildable single-family detached lots for subdivisions creating no more than ~~three~~ seven lots where it can be demonstrated that the requirement is not practical or desirable due to constraints imposed by the dimensions or topography of the property and where adequate provisions for maintenance are provided. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities.

6-1307.2B Bioretention facilities may be located on individual single-family detached residential lots that are not part of a bonded subdivision to satisfy the BMP requirements of the ~~Chesapeake Bay Preservation~~ Stormwater Management Ordinance for construction on the lot.

6-1307.2C Bioretention facilities may be located in the VDOT right-of-way with specific approval from VDOT.

6-1307.2D ~~6-1307.2C~~ Bioretention facilities that utilize infiltration may not be constructed on fill material.

6-1307.2E ~~6-1307.2D~~ Bioretention facilities may not be constructed on slopes steeper than 15 percent.

6-1307.2F ~~6-1307.2E~~ Setbacks. ~~Bioretention filters shall be located a minimum of 10 feet horizontally from building foundations preferably down gradient. Bioretention basins shall be located a minimum of 20 feet horizontally from building foundations preferably down gradient. Bioretention facilities shall be located a minimum of 100 feet horizontally from water supply~~

~~wells. Bioretention filters shall be located a minimum of 25 feet horizontally up gradient from septic fields and a minimum of 50 feet horizontally down gradient from septic fields. Bioretention basins shall be located a minimum of 50 feet horizontally from septic fields preferably up gradient.~~ Bioretention facilities shall meet the setback requirements of the Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations). In addition, ~~B~~bioretention facilities shall be set back a minimum of 2 feet from property lines.

6-1307.2G ~~6-1307.1D (102-08-PFM)~~ Trees within bioretention facilities may be used to meet the requirements of Chapter 122 of the County Code and § 12-0000 *et seq.* of the PFM.

~~6-1307.2F Bioretention facilities shall not be located in the vicinity of loading docks, vehicle maintenance areas, or outdoor storage areas, where there is the potential for high concentrations of hydrocarbons, toxics, or heavy metals in stormwater runoff.~~

~~6-1307.2G The maximum drainage area to a bioretention filter shall be 2 acres. The maximum impervious area draining to a bioretention filter shall be 1 acre. The maximum drainage area to a bioretention basin shall be 1 acre. The maximum impervious area draining to a bioretention basin shall be 0.5 acre.~~

~~6-1307.2H No minimum size is specified for bioretention facilities to allow for application on sites with limited space or topographic constraints. Bioretention facilities should be "footprinted" into the available landscape to minimize land disturbance.~~

~~6-1307.2I Bioretention facilities may be designed as online or offline facilities. Offline facilities are preferred and are mandatory when any part of the inflow to the facility is from flow in a County storm drainage easement.~~

6-1307.3 Maintenance.

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1307.3A Bioretention facilities and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Bioretention facilities may not be located in County storm drainage easements. The above does not preclude the use of bioretention facilities by the County on County-owned property.

6-1307.3B Maintenance access must be provided for all bioretention facilities not located on individual buildable single family detached lots in accordance with § 6-1306. For bioretention facilities located on individual buildable single family detached lots, maintenance access shall be considered as an integral part of the design and designated on the plan.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1307.3A Bioretention facilities ~~and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Bioretention facilities may not be located in County storm drainage easements. The above does not preclude the use of bioretention facilities by the County on County-owned property~~ located in single-family and residential condominium developments shall be within County storm drainage easements and shall be maintained by DPWES. Bioretention facilities and their appurtenant structures located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1307.3B Maintenance access must be provided for all bioretention facilities ~~not located on individual buildable single family detached lots~~ in accordance with § 6-1306~~. For~~ except that the access way for bioretention facilities located on individual buildable single family detached lots may have a grass surface rather than an all-weather surface~~, maintenance access shall be considered as an integral part of the design and designated on the plan~~.

6-1307.3C Bioretention facilities shall be posted with permanent signs designating the area as a water quality management area. Signs shall state that the facility is a water quality management area, water may pond after a storm, and the area is not to be disturbed except for required maintenance. Signs shall be posted at approximately 150-foot intervals along the perimeter of the bioretention area with a minimum of one sign for each facility. (See Plate 81-6.)

6-1307.3D Urban bioretention facilities (tree box filters) shall be stenciled (or a plaque provided) on the inside of the box in a location clearly visible upon removal of the tree grate designating the tree box as a water quality management facility. The stenciling or plaque shall state that the facility is a water quality management facility, water may pond after a storm, and the facility is not to be disturbed except for required maintenance.

6-1307.4 Design Criteria.~~ General Design Requirements~~

6-1307.4A ~~Water Quality~~ Treatment Volume.~~ For facilities designed to capture and treat the first 0.5 inch of runoff, the required water quality volume is 1,815 cubic feet per acre of impervious area. For facilities designed to capture and treat the first 1.0 inch of runoff, the required water quality volume is 3,630 cubic feet per acre of impervious area. The water quality volume must be captured and filtered through the system.~~ The required treatment volume shall be determined in accordance with Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations).

6-1307.4B Detention. For facilities designed to provide detention, the 1-year storm, the 2-year~~, 2-hour~~ storm and the 10-year~~, 2-hour~~ storm must be routed through the facility; or the facility

may be designed to infiltrate the 10-year~~, 2-hour~~ storm volume; or the facility may be designed to filter the 10-year ~~2-hour~~ storm volume. Except where the facility is designed to filter the 10-year~~, 2-hour~~ storm volume, a drop inlet with a trash rack or screen shall be provided to convey stormwater in excess of the water quality volume to a gravel layer or storage chambers below the soil media.

6-1307.4C For on-line facilities, the inlet must be designed to pass the peak flow rate for the 10-year storm. For off-line facilities, a flow splitter shall be used to capture the design storm (typically the ~~water quality~~ treatment volume) and pass larger flows around the facility.

6-1307.4D Pre-Treatment. Pre-treatment shall be provided at all points of concentrated inflow to facilities. Pre-treatment shall be designed in accordance with Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations). Pre-treatment generally consists of a vegetated filter strip or channel and an energy dissipation device. However, space constraints (e.g., parking lot islands) may limit the ability to provide a vegetated filter strip or channel. Where space permits, vegetated filter strips or channels shall be provided. Energy dissipation devices are required for all facilities at points of concentrated inflow. Where inflow is in the form of sheet flow, a vegetated filter strip shall be provided where space permits. Guidelines for sizing vegetated filter strips and channels are provided in Tables 6.25 and 6.26.

Table 6.25 Pretreatment Filter Strip Sizing

Inflow Surface	**Impervious**				**Pervious**			
Maximum Inflow Approach Length	35 ft.		75 ft.		75 ft.		150 ft.	
Filter Strip % Slope (6% max)	≤ 2	≥ 2	≤ 2	≥ 2	≤ 2	≥ 2	≤ 2	≥ 2
Minimum Filter Strip Length Feet	10	15	20	25	10	12	15	18

Table 6.26 Pretreatment Vegetated Channel Sizing*(101-08-PFM)

% Impervious	**≤ 33%**		**34% - 66%**		**≥ 67%**	
Channel Slope (4% max)	≤ 2%	≥ 2%	≤ 2%	≥ 2%	≤ 2%	≥ 2%
Min. Length feet	25	40	30	45	35	50

* 1 acre drainage area. 2-foot wide channel bottom.

6-1307.4E The maximum surface storage depth from the top of the mulch layer to the elevation of the overflow weir or drop inlet shall be 1 foot.

6-1307.4F Berms used to pond water in bioretention facilities shall be a maximum of 2.0 feet in height measured from the downstream toe-of-slope to the top of the berm. The width of the top of the berm shall be a minimum of 2.0 feet. The side slopes of the berm shall be a maximum of 3:1. Berms and overflow weirs shall be sodded and pegged in accordance with the most recent edition of the "Virginia Erosion and Sediment Control." Facilities with berms that are equal to or less than 2.0 feet in height or excavated facilities will not be subject to the requirements of § 6-1600 (Design and Construction of Dams and Impoundments).

6-1307.4G (107-11-PFM) The side slopes of the facility above ground shall be a maximum of 3:1. Where space permits, gentle side slopes (e.g., 5:1) are encouraged to blend the facility into the surrounding landscape. Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with Virginia Occupational Safety and Health (VOSH) requirements. If the facility is located on problem soils, as defined in Section 107-2-2 (j) of the County Code, a professional authorized by the State shall specify the maximum acceptable slope.

6-1307.4H An outlet structure must be provided to convey the peak flow for the 10-year storm. The outlet structure may be a drop inlet or weir. A minimum freeboard of 6 inches shall be provided from the maximum elevation of the 10-year storm to the top of the facility.

6-1307.4I An emergency overflow weir shall be provided for all facilities with berms. The emergency overflow weir must have the capacity to pass the peak flow from the 100-year storm without overtopping the facility. If the facility design includes a weir in the berm to convey the peak flow for the 10-year storm, it also may be designed to function as the emergency overflow weir. The minimum weir length shall be 2 feet.

6-1307.4J The outfall of all outlet structures, emergency overflow weirs, and underdrains must be in conformance with the adequate drainage requirements of § 6-0200 et seq.

6-1307.4K Underdrains shall be provided for all bioretention filters and basins except that facilities on individual single-family detached residential lots that are not part of a bonded subdivision may be constructed without underdrains if the underdrain cannot be daylighted on the lot or connected to a storm sewer structure. If there are no underdrains, observation wells shall be installed to monitor drainage from the facility.

6-1307.4L The depth between the bottom of the facility and groundwater table or bedrock shall be a minimum of 4 feet for bioretention basins and a minimum of 2 feet for bioretention filters as determined by field run soil borings.

6-1307.4M For facilities designed to provide infiltration, the underdrain shall be restricted as necessary so that the design infiltration rate plus the underdrain outflow rate equals the design draw down rate. The restriction shall be achieved by using an end cap with a hole to act as an orifice or a valve fitted onto the end of the underdrain. Alternatively, a flow control satisfactory

to the Director may be provided within the overflow structure. See § 6-1604.1A(2) for orifice calculations. The minimum diameter of any orifice shall be 0.5 feet. Facilities shall be designed to dewater completely within 48 hours. If the facility can drain in the required time without any outflow through the underdrain, the end cap may be provided without a hole.

6-1307.4N The soil media depth shall be determined in accordance with Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations). ~~The minimum soil media depth shall be 2.5 feet.~~ If large trees and shrubs are to be installed, soil depths shall be increased to a minimum of 4 feet. The bottom of the soil layer must be a minimum of 4 inches below the root ball of plants to be installed. A layer of 2-3 inches of mulch shall be placed on top of the soil media.

6-1307.4O For facilities utilizing infiltration, the design of the facility shall be in accordance with the soil testing, reporting and meeting procedures of § 4-0700 *et seq.*

6-1307.4P Variations of the bioretention filter and basin designs in the typical details and schematics of bioretention facilities in Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations) ~~Plates 82-6, 83-6, 84-6, 85-6, and 86-6~~ may be approved by the Director provided the facility meets all of the requirements in § 6-1307 et seq.

6-1307.4Q The design geometry shall prevent short-circuiting. The Director may waive or modify the guideline for the shortest flow path ratio in cases where (1) the outlet structure within the bioretention area is raised above the filter surface to the ponding depth elevation; and (2) the filter surface is flat.

6-1307.5 Filter Bed Design

6-1307.5A The required surface area of the filter shall be determined in accordance with Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations). ~~is based on the volume of water to be treated and the available storage in the ponding area computed as follows:~~

~~$A_f = WQ_v/h_f$~~

~~Where:~~
~~A_f = area of filter (ft^2)~~
~~WQ_v = water quality volume (ft^3)~~
~~h_f = maximum ponding depth (ft.)~~

6-1307.5B The drain time through the filter is based on the volume of water to be treated and the hydraulic properties of the soil media in accordance with Darcy's law computed as follows:

$t_f = (\underline{T_v}\ \cancel{WQ_v})(d_f) / [(k_f / 12)(0.5h_f+d_f)A_f]$

Where:
t_f = drain time through filter (hrs.)
$\underline{T_v}$ $\cancel{WQ_v}$ = ~~water quality~~ <u>treatment</u> volume (ft^3)
d_f = depth of filter (ft.)
k_f = coefficient of permeability (in./hr.)
h_f = maximum ponding depth (ft.)
A_f = area of filter (ft^2)

6-1307.5C A coefficient of permeability of 1.5 inches/hour for the soil media shall be used for sizing calculations. The ~~water quality~~ <u>treatment</u> volume must drain through the filter section in 24 hours. In determining the drain time through the filter, assume that the rainfall event has ended and the ponding depth is at the maximum elevation prior to the initiation of drawdown.

6-1307.6 Gravel Layer/Storage Chamber Design

6-1307.6A Storage Volume. Storage for detention or infiltration may be provided by a layer of gravel or gravel in combination with storage chambers beneath the soil media. Water flows into the storage layer either through an inlet structure or through the soil media layer. Water flows out of the storage layer either by infiltration into the underlying in situ soils or through a restricted underdrain. The design objectives are to infiltrate as much of the water as possible, to provide sufficient storage so that water can drain freely through the filter without being backed-up, to assure that there is complete drain down of the facility between storms, and to meet the physical constraints of the site.

6-1307.6A(1) For facilities designed to infiltrate the ~~water quality~~ <u>treatment</u> volume, the amount of storage required is based on the flow rate through the filter minus the infiltration rate into the underlying *in situ* soils and the outflow through the underdrain during the filling period. The required storage volume is computed as follows:

$V_s = \underline{T_v}\ \cancel{WQ_v} – [(k_s)(A_s)(t_f) / 12] – [3{,}600(Q_u)(t_f)]$

Where:
V_s = volume of storage (ft^3)
$\underline{T_v}$ $\cancel{WQ_v}$ = ~~water quality~~ <u>treatment</u> volume (ft^3)
k_s = soil infiltration rate (in./hr.)
A_s = area of soil bed (ft^2)
t_f = drain time through filter (hrs.)
Q_u = outflow through underdrain (cfs)

6-1307.6A(2) For facilities designed to provide detention in addition to filtering the ~~water quality~~ <u>treatment</u> volume, the ~~water quality~~ <u>treatment</u> volume is replaced in the above equation

by the total storm runoff volume for the design storm (V_{ds}). The required storage volume is computed as follows:

$$V_s = V_{ds} - [(k_s)(A_s)(t_f) / 12] - [3{,}600(Q_u)(t_f)]$$

6-1307.6B Storage Depth. Typically, the area of the soil bed will be known (approximately equal to the area of filter bed for larger facilities) and the depth of the gravel layer will be computed from the required storage and the porosity of the gravel as follows:

$$d_g = V_s / [(n_g)(A_s)]$$

Where:
d_g = depth of gravel layer (ft.)
V_s = volume of storage (ft^3)
n_g = porosity of gravel
A_s = area of soil bed (ft^2)

6-1307.6C After determining the depth of the gravel layer, check the invert elevation against the elevation of the water table and bedrock. Also check that the facility can drain to the intended outfall.

6-1307.6D Facility Drain Time. The final step in the design of the gravel layer is to compute the time that it takes the facility to drain. The facility must drain completely within 48 hours after the water quality volume has been captured by the filter section. The drain time is computed as follows:

$$t_d = V_s / [(k_s)(A_s) / 12 + 3{,}600(Q_u)] + t_f$$

Where:
t_d = total drain time for facility (hrs.)
V_s = volume of storage (ft^3)
k_s = soil infiltration rate (in./hr.)
A_s = area of soil bed (ft^2)
Q_u = outflow through underdrain (cfs)
t_f = drain time through filter (hrs.)

6-1307.6E For facilities designed as bioretention filters with unrestricted underdrains, computation of the storage volume, storage depth, and facility drain time are not necessary. However, it is still necessary to check the invert elevation of the gravel layer against the elevation of the water table, bedrock, and the intended outfall.

6-1307.6F For facilities designed as bioretention basins, the infiltration rate into the underlying *in situ* soils typically will be less than the flow rate through the filter and the outflow through the

underdrain will be restricted or absent such that some storage will be required. In performing computations of the storage volume, storage depth, and facility drain time, initially assume that the underdrain is capped and there is no outflow through the underdrain. If the allowable depth of the storage layer based on the elevation of the groundwater table or bedrock is insufficient to provide the necessary storage volume, storage may be increased by increasing the area of the filter and soil bed or by incorporating storage chambers. Alternatively, the underdrain may be provided with an orifice to decrease the amount of storage needed. If the total drain time of the facility is in excess of 48 hours, it will be necessary to provide an orifice and recompute the total drain time through the facility. Outflow through the orifice may not exceed the pre-development peak flow rates for the 1-year, 2-year, and 10-year storms.

6-1307.6G A porosity of 0.40 for VDOT #57 stone shall be used for volume calculations.

6-1307.7 Underdrains. Underdrains shall consist of pipe ≥ 4 inches in diameter placed in a layer of washed VDOT #57 stone. There shall be a minimum of 2 inches of gravel above and below the pipe. Laterals shall be a minimum of 4-6 inches in diameter. Main collector lines and manifolds shall be a minimum of 6-8 inches in diameter. Underdrains shall be laid at a minimum slope of 0.5 percent. Underdrains shall extend to within 10 feet of the boundary of the facility and have a maximum internal spacing of 20 feet on center. Underdrains shall be separated from the soil media in accordance with Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations) ~~by geotextile fabric or a 2- to 3-inch layer of washed VDOT #8 stone or 1/8- to 3/8-inch pea gravel.~~ Underdrains not terminating in an observation well/clean-out shall be capped. The portion of underdrain piping beneath the planting soil bed must be perforated. All remaining underdrain piping, including cleanouts, must be nonperforated. All stone shall be washed with less than 1 percent passing a #200 sieve.

6-1307.8 Observation Wells and Cleanouts. There shall be a minimum of one observation well or cleanout per 1,000 square feet of surface area. Observation wells and cleanouts shall be a minimum of 6 inches in diameter with a screw, or flange type cap to discourage vandalism and tampering extending above the BMP water surface elevation. Cleanouts shall be provided at the end of all pipe runs. Cleanouts and observation wells shall be solid pipe except for the portion below the planting soil bed which must be perforated. Observation wells that are not connected to underdrain piping shall be anchored to a footplate at the bottom of the facility.

6-1307.9 Materials Specifications.

6-1307.9A The bioretention soil media shall meet the requirements of Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations ~~Version 1.9, March 1, 2011~~) ~~be composed of a mixture of 60-75 percent washed sand, 5-15 percent organic compost meeting the requirements of Table 6.27, and 10-35 percent topsoil~~. Topsoil used to create bioretention soil media ~~shall~~ should be a sandy loam or~~,~~ loamy sand~~, silt loam or loam~~ per USDA textural classification. The textural class of the topsoil ~~shall~~ should be verified by a laboratory analysis. Topsoil shall be of uniform composition, containing no more

than ~~8~~ 5 percent clay, free of stones, stumps, brush, roots, or similar objects larger than 2 inches. Topsoil shall be free of Bermuda Grass, Quackgrass, Johnson Grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle, Tearthumb, or other noxious weeds. Sand shall meet AASHTO M-6, ASTM C-33, or VDOT Section 202 Grade "A" Fine Aggregate specifications. Sand shall be clean and free of deleterious materials. Any organic material added to create the final soil mixture shall consist of leaf compost or compost meeting the requirements of Virginia Stormwater Design Specification No. 4 Soil Compost Amendment. The final soil mixture shall not contain any material or substance that may be harmful to plant growth, or a hindrance to plant growth or maintenance. ~~The final soil mixture shall meet the requirements in Table 6.28.~~ Each bioretention area shall have a minimum of one soil test performed on the final soil mixture to demonstrate compliance with the mixture requirements for sand, soil fines, organic matter, P-Index (phosphorus content) and cation exchange capacity (CEC) using standard test methods. Test results and materials certifications shall be submitted to DPWES prior to bond release.

6-1307.9B Mulch shall be double shredded aged hardwood bark with a particle size greater than 0.5 inches. Mulch shall be well aged, uniform in color, and free of salts, harmful chemicals, and extraneous material including soil, stones, and plant material. Well aged mulch is mulch that has been stockpiled or stored for 6-12 months.

6-1307.9C Underdrains shall be PVC pipe conforming to the requirements of ASTM F758, Type PS 28 or ASTM F949; HDPE pipe conforming to the requirements AASHTO M252 or M 294, Type S; or approved equivalent pipe. Underdrains shall be perforated with four rows of 3/8-inch holes with a hole spacing of 3.25 ± 0.25 inches or a combination of hole size and spacing that provides a minimum inlet area $\geq$ 1.76 square inches per linear foot of pipe or be perforated with slots 0.125 inches in width that provides a minimum inlet area $\geq$ 1.5 square inches per linear foot of pipe.

6-1307.9D Filter fabric. Filter fabric shall be a needled, non-woven, polypropylene geotextile meeting the requirements listed in Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations ~~Version 1.9, March 1, 2011~~) ~~Table 6.29~~. Heat-set or heat-calendared fabrics are not permitted.

~~**Table 6.27 Compost Specifications**~~

~~pH~~	~~6.0-8.0~~
~~Soluble Salts (electrical conductivity)~~	~~< 5 dS/m~~
~~Nutrient Content (dry weight basis)~~	~~Nitrogen – 1% or above~~ ~~Phosphorus – 1% or above~~ ~~Potassium – 1% or above~~
~~Organic Matter Content (dry weight basis)~~	~~50-60%~~
~~Moisture Content (wet weight basis)~~	~~40-50%~~
~~Particle Size~~	~~Pass through a 1/2 inch screen or smaller~~

~~(aggregate size)~~	
~~Maturity Indicator (percentage of control)~~	~~> 80% of control~~
~~Stability (CO_2 evolution)~~	~~0-4 mg CO_2C per g OM per day~~
~~Trace Elements/Heavy Metals~~	~~Meet U.S. EPA Class A standard, 40 CFR § 503.13. Tables 1 and 3~~
~~Pathogens~~	~~Meet U.S. EPA Class A standard, 40 CFR § 503.32(a)~~

~~**Table 6.28 Soil Media Specifications**~~	
~~pH~~	~~5.5-6.5~~
~~Total Organic Matter by Loss on Ignition (ASTM F1647, Method A)~~	~~≥ 1.5% (dry weight)~~
~~Soluble Salts~~	~~≤ 500 ppm~~

~~**Table 6.29 Filter Fabric Specifications**~~	
~~Grab Tensile Strength (ASTM D4632)~~	~~≥ 120 lbs.~~
~~Mullen Burst Strength (ASTM D3786)~~	~~≥ 225 lbs./in^2~~
~~UV Resistance (ASTM D4355)~~	~~70% strength after 500 hours~~
~~Flow Rate (ASTM D4491)~~	~~≥ 125 gal./min./ft^2~~
~~Apparent Opening Size (AOS) (ASTM D4751)~~	~~US #70 or #80 sieve~~

6-1307.10 Bioretention Planting Plans

6-1307.10A Bioretention planting plans and specifications shall be prepared by a certified landscape architect, horticulturist, or other qualified individual who has knowledge of the environmental tolerance, ecological functions, and ecological impacts of plant species. Planting plans shall be prepared in accordance with the requirements of § 12-0500.

6-1307.10B Depending on the bioretention planting plan type and application as detailed in § 6-1307.10G, a mixture of trees, shrubs, and perennial herbaceous plants with a high density of fibrous roots is required. Selected plants must be able to tolerate highly variable moisture conditions, generally dry with brief periods of inundation. Depending on site conditions, selected plants also must be able to tolerate exposure to wind and sun, as well as salt and toxins in runoff from roads, parking lots, and driveways. The use of native plant species is preferred. The acceptability of proposed plant materials will be determined by the Director. Guidance on the use and selection of plants for bioretention facilities is available from Urban Forest Management.

6-1307.10C All plants shall conform to the latest version of American Standard for Nursery Stock published by the American Nursery and Landscape Association (ANSI Z60.1) for quality and sizing. Trees and shrubs shall be nursery grown unless otherwise approved and shall be healthy and vigorous, free from defects, decay, disfiguring roots, sun-scald, injuries, abrasions, diseases, insects, pests, and all forms of infestations or objectionable disfigurements as determined by the Director.

6-1307.10D Trees shall be a minimum of 1-inch caliper. Shrubs shall be a minimum of 2-gallon container size and herbaceous plants shall be a minimum of 6-inch diameter container size. Variations in size may be approved by the Director, based on the requirements of the specific plants listed in the schedule.

6-1307.10E The planting plan shall provide for plant community diversity and should consider aesthetics from plant form, color, and texture year-round. The bioretention facility design and selection of plant material shall serve to visually link the facility into the surrounding landscape. If trees and shrubs are part of the design, woody plant species shall not be placed directly within the inflow section of the bioretention facility.

6-1307.10F All plantings must be well established prior to release of the conservation deposit. Nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released.

6-1307.10G Bioretention Planting Plan Types and Applications

6-1307.10G(1) Wooded planting plans. Wooded bioretention facilities are appropriate where the facility is located at wooded edges, in the rear of residential lots, or where a wooded buffer is required. Design guidelines include:

6-1307.10G(1)(a) A density of 10 trees per 1,000 square feet of basin shall be used.

6-1307.10G(1)(b) A minimum of three species of trees and three species of shrubs shall be planted, with trees located on the perimeter to maximize shading of the bioretention area;

6-1307.10G(1)(c) Of the three species of trees, at a minimum one shall be a mid or understory species; 30-50 percent of the total quantity of trees planted shall be mid or understory trees;

6-1307.10G(1)(d) Two to three shrubs shall be planted for each tree (2:1 to 3:1 ratio of shrubs to trees);

6-1307.10G(1)(e) At least three species of perennial herbaceous ground cover shall be planted;

6-1307.10G(1)(f) (106-10-PFM) Where the basin is planted at the specified density, interior and peripheral parking lot landscaping and 10-year tree canopy credit will be granted if planting conforms to the requirements of Article 13 of the Zoning Ordinance and Chapter 122 of the County Code (Tree Conservation Ordinance) and PFM § 12-0000 et seq.

6-1307.10G(1)(g) Trees planted in wooded bioretention facilities may also fulfill the requirements of transitional screening if the planting conforms to the provisions of Article 13-300 of the Zoning Ordinance.

6-1307.10G(2) Ornamental garden planting plans. Ornamental garden bioretention facilities are appropriate on commercial sites, as a focal point within residential developments or located in the front yard of an individual residential lot. Design guidelines include:

6-1307.10G(2)(a) The facility should be considered as a mass planting bed with plants that have ornamental characteristics linking it to the surrounding landscape;

6-1307.10G(2)(b) The facility should contain a variety of plant species which will add interest to the facility with each changing season;

6-1307.10G(2)(c) A mixture of trees, shrubs and perennial herbaceous groundcover at an approximate ratio of 10 percent trees, 20 percent shrubs and 70 percent perennials shall be planted;

6-1307.10G(2)(d) When the size or location of the facility precludes the use of large shade trees, use of small ornamental trees shall be considered. Alternatively, a mixture of shrubs and perennials at an approximate ratio of 40 percent shrubs, 60 percent perennials may be used;

6-1307.10G(2)(e) Spacing of plant material is species specific and will be subject to review and approval of the Director. In general the facility shall be planted at a density that the vegetation will cover 80-90 percent of the facility after the second growing season.

6-1307.10G(3) Meadow garden planting plans. Meadow garden bioretention facilities lack woody material and are appropriate for small facilities, either on commercial or residential sites. Design guidelines include:

6-1307.10G(3)(a) Plant material shall consist of a variety of grasses and wildflowers. Other groundcovers, rushes and sedges may be part of the mixture as well;

6-1307.10G(3)(b) Species of different heights, texture, as well as flowering succession shall be selected;

6-1307.10G(3)(c) Spacing of plant material is species specific and will be subject to review and approval of the Director. In general the facility shall be planted at a density that the perennial herbaceous vegetation will cover 80-90 percent of the facility after the second growing season.

6-1307.11 Construction Specifications

6-1307.11A The owner shall provide for inspection during construction of the facility by a licensed design professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers and results of the tests and inspections required under § 6-1307.9A, § 6-1307.11D, and § 6-1307.11K shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1307.11B Bioretention facilities shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan.

6-1307.11C The components of the soil media shall be thoroughly mixed until a homogeneous mixture is obtained. It is preferable that the components of the soil media be mixed at a batch facility prior to delivery to the site. The soil media shall be moistened, as necessary, to prevent separation during installation.

6-1307.11D The soil media shall be tested for pH, organic matter, grain size distribution, P-Index (phosphorus content) and cation exchange capacity (CEC) using standard test methods ~~and soluble salts~~ prior to installation. If the results of the tests indicate that the required specifications are not met, the soil represented by such tests shall be amended or corrected as required and retested until the soil meets the required specifications. If the pH is low, it may be raised by adding lime. If the pH is too high, it may be lowered by adding iron sulfate plus sulfur.

6-1307.11E For bioretention basins, the floor of the facility shall be scarified or tilled to reduce soil compaction and raked to level it before the filter fabric, stone, and soil media are placed.

6-1307.11F The soil media may be placed by mechanical methods with minimal compaction in order to maintain the porosity of the media. Spreading shall be by hand. The soil media shall be placed in 8- to 12-inch lifts with no machinery allowed over the soil media during or after construction. The soil media should be overfilled above the proposed surface elevation as needed to allow for natural settlement. Lifts may be lightly watered to encourage settlement. After the final lift

is placed, the soil media shall be raked to level it, saturated, and allowed to settle for at least one week prior to installation of plant materials.

6-1307.11G Fill for the berm and overflow weir shall consist of clean material free of organic matter, rubbish, frozen soil, snow, ice, particles with sizes larger than 3 inches, or other deleterious material. Fill shall be placed in 8- to12-inch lifts and compacted to at least 95 percent of Standard Proctor Maximum Density in accordance with ASTM D-698, AASHTO T-99, or VDOT specifications. Compaction equipment shall not be allowed within the facility on the soil bed. The top of the berm and the invert of the overflow weir shall be constructed level at the design elevation.

6-1307.11H Plant material shall be installed per § 12-0705.

6-1307.11I Planting shall take place after construction is completed and during the following periods: March 15 through June 15 and Sept. 15 through Nov. 15, unless otherwise approved by the Director.

6-1307.11J All areas surrounding the facility that are graded or denuded during construction of the facility and are to be planted with turf grass shall be sodded.

6-1307.11K The facility shall be inspected at 12-24 and 36-48 hours after a significant rainfall (0.5-1.0 inches) or artificial flooding to determine that the facility is draining properly. Results of the inspection shall be provided to DPWES prior to bond release.

6-1307.11L Additional guidelines for construction are provided in Virginia Stormwater Design Specification No. 9 Bioretention (Latest version referenced in the VSMP Regulations).

6-1307.12 Plan Submission Requirements

6-1307.12A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures including underdrains.

6-1307.12B Cross section(s) of the facility showing the following: elevations and dimensions of berm, inlet, outlet, underdrain, soil media, underlying gravel layer, storage chambers, filter fabric, groundwater table, and bedrock.

6-1307.12C Plant schedule and planting plan specifying species, quantity of each species, stock size, type of root stock to be installed and amount of tree cover claimed for each tree species or spacing of shrubs and perennials within facility. Planting plan shall be in conformance with § 12-0515.

6-1307.12D Sizing computations for the facility including volume of storage and surface area of facility required and provided and a computation of the ratio of the shortest flow path to overall length of the facility.

6-1307.12E Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 9.

6-1307.12F ~~6-1307.12E~~ Hydrologic calculations for the facility.

6-1307.12G ~~6-1307.12F~~ Design calculations and specifications for all hydraulic structures including inlet structures, overflow weirs, and underdrain piping.

6-1307.12H ~~6-1307.12G~~ Infiltration calculations as appropriate.

6-1307.12I ~~6-1307.12H~~ Soils analysis and testing results for facilities that utilize infiltration. Elevation of groundwater table and/or bedrock.

6-1307.12J ~~6-1307.12I~~ A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1307.12K ~~6-1307.12J~~ Construction and materials specifications.

~~6-1307.13 Bioretention Design Example:~~

~~6-1307.13A Given:~~

~~Drainage area to the facility = 20,000 ft^2;~~
~~Impervious area (A_i) = 15,000 ft^2;~~
~~Depth of filter (d_f) = 2.5 ft.~~
~~Maximum ponding depth (h_f) = 1.0 ft.~~
~~Coefficient of permeability of filter bed (k_f) = 1.5 in./hr.~~
~~Design infiltration rate of *in situ* soils (k_s) = 0.35 in./hr. (one-half of field measured rate of 0.7 in./hr.);~~
~~Porosity of gravel (n_g) = 0.40~~

~~6-1307.13B Determine the required area of the filter bed (A_f) for a water quality volume (WQ_v) of 1.0 inches per impervious acre (3,630 cubic feet).~~

~~6-1307.13B(1) The water quality volume is:~~

~~WQ_v = 3,630 ft^3 (15,000 ft^2 / 43,560 ft^2)~~
~~= 1,250 ft^3~~

~~6-1307.13B(2) The area of the filter bed is:~~

~~$A_f = WQ_v / h_f$~~
~~$= 1{,}250 / 1.0 = 1{,}250\ ft^2$~~

~~6-1307.13B(3) Compute the drain time through the filter for a filter area of 1,250 square feet (Must be less than 24 hours).~~

~~$t_f = (WQ_v)(d_f) / [(k_f/12)(0.5h_f+d_f)A_f]$~~
~~$= (1{,}250)(2.5) / [(1.5/12)(0.5(1.0)+2.5)1{,}250]$~~
~~$= 6.67$ hrs. $\leq$ 24 hrs. OK~~

~~If the facility is to be designed as a bioretention filter, the sizing computations are complete and a standard underdrain will be installed with no flow restriction.~~

~~6-1307.13C Determine the required storage volume (V_s) and depth (d_g) of the of the gravel layer to provide for infiltration of the entire water quality volume (WQ_v) (1,250 ft^2). The design infiltration rate (k_s) is equal to half of the field measured rate of 0.7 in/hr. Assume that the area of the soil bed (A_s) is equal to the area of the filter (A_f). Ignore any additional storage that may be provided by the underdrain pipes and assume that there is no outflow (Q_u) through the underdrain.~~

~~6-1307.13C(1) The required storage volume is:~~

~~$V_s = WQ_v - [(k_s)(A_s)(t_f) / 12] - [3{,}600(Q_u)(t_f)]$~~
~~$= 1250 - [0.35(1{,}250)(6.67) / 12] - 0$~~
~~$= 1{,}006.8\ ft^3$~~

~~Use: $V_s = 1{,}007\ ft^3$~~

~~6-1307.13C(2) Compute the depth of the gravel storage area for a soil bed area of 1,250 square feet and a storage volume of 1,007 cubic feet.~~

~~$d_g = V_s / [(n_g)(A_s)]$~~
~~$= 1007 / [(0.40)(1{,}250)]$~~
~~$= 2.01$ ft.~~

~~Use $d_g = 2.0$ ft.~~

~~Check the depth between the bottom of the gravel storage area and the groundwater table and bedrock elevations from soil borings.~~

~~6-1307.13C(3) Compute the total drain time for the facility for a filter area and soil bed area of 1,250 square feet, a storage volume of 1,007 cubic feet, and a drain time through the filter of 6.67 hours (Must be less than 48 hours.).~~

$t_d = V_s / [(k_s)(A_s) / 12 + 3{,}600(Q_u)] + t_f$
$= 1007 / [(0.35)(1{,}250) / 12 + 0] + 6.67$
$= 34.3$ hrs. $\leq$ 48 hrs. OK

~~If the soil infiltration rate is less than the coefficient of permeability of the filter and there is no outflow through the underdrain, the total drain time for the facility can also be computed from:~~

$t_d = WQ_v / [(k_s)(A_s) / 12]$
$= 1250 / [(0.35)(1{,}250) / 12]$
$= 34.3$ hrs.

~~6-1307.13D Redesign the facility to provide detention of the 10-year, 2-hour storm in addition to water quality control and to maximize infiltration. Note that a drop inlet will be required to deliver the storm volume in excess of the 1,250 cubic feet captured by the filter section to the gravel storage layer. The 10-year, 2-hour storm volume is 3 inches (10,890 cubic feet) per impervious acre. Assume the gravel storage layer fills in 2 hours and that there is no outflow through the orifice during the filling period.~~

~~6-1307.13D(1) The 10-year, 2-hour storm volume is:~~

$V_{10} = 10{,}890\ ft^3 (15{,}000\ ft^2 / 43{,}560\ ft^2)$
$= 3{,}750\ ft^3$

~~6-1307.13D(2) Determine the required storage volume (V_s).~~

$V_s = V_{10} - [(k_s)(A_s)(t_f) / 12] - [3{,}600(Q_u)(t_f)]$
$= 3750 - [0.35(1{,}250)(6.67) / 12] - 0$
$= 3{,}506.8\ ft^2$

~~6-1307.13D(3) Compute the depth of the gravel storage area for a soil bed area of 1,250 square feet and a storage volume of 2,963 cubic feet.~~

$d_g = V_s / [(n_g)(A_s)]$
$= 3{,}507 / [(0.40)(1{,}250)]$
$= 7.01$ ft.

~~Check the depth between the bottom of the gravel storage area and the groundwater table and bedrock elevations from soil borings. If 7.01 feet is too deep, adjust the depth by providing additional storage in pipes or chambers or by enlarging the footprint of the facility.~~

~~6-1307.13D(4) Size an orifice for the underdrain system to keep the total drain time for the facility to less than 48 hours.~~

~~The required discharge rate is computed from:~~

$\cancel{Q_u = [(V_{10} / t_d) - (k_s \times A_s) / 12] / 3{,}600}$

$\cancel{= [(3750 / 48) - (0.35 \times 1250) / 12)] / 3{,}600}$

$\cancel{= 0.0116 \text{ cfs}}$

~~The size of the required orifice is computed using the standard orifice equation (see § 6-1604.1A(2)):~~

$\cancel{Q_o = CA(2gH_o)^{1/2}}$

~~Where:~~

~~Q_o = discharge (cfs)~~

~~C = orifice coefficient, typically set at 0.6 for sharp edged orifices but may vary depending on orifice geometry~~

~~A = flow area (ft^2)~~

~~g = acceleration of gravity (32.2 ft./sec^2)~~

~~H_o = energy head above centroid of opening (ft.)~~

~~There are two unknowns in this equation, the orifice area and the energy head. One approach is to assume an orifice size. Based on the assumed orifice size, the average energy head required for the design flow rate can be computed and compared to the depth of the gravel storage area. If the energy head is less than half the depth of the gravel storage area we can safely assume that the facility will drain in 48 hours.~~

~~Try the minimum size orifice (0.5-inch diameter; 0.001364 square feet).~~

$\cancel{H_o = [(Q_o/CA)^2] / 2g}$

$\cancel{= [(0.0116 / 0.6*0.001364)^2] / 64.4}$

~~= 3.12 ft. ≥ 0.5 x 7.01 ft. not OK;~~

~~Try a 5/8-inch diameter orifice (0.002131 ft^2).~~

$\cancel{H_o = [(Q_o / CA)^2] / 2g}$

$\cancel{= [(0.0116 / 0.6*0.002131)^2] / 64.4}$

~~= 1.28 ft. ≤ 0.5 x 7.01 ft. OK~~

~~6-1307.13E Inflow- outflow hydrograph routings would provide a more accurate solution for these examples.~~

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1308 (Vegetated Swales) by revising it to read as follows:

6-1308 Vegetated Swales ~~(98-07-PFM)~~

6-1308.1 General

6-1308.1A Vegetated swales are open, shallow channels with vegetation covering the side slopes and bottom that collect and slowly convey stormwater runoff to downstream discharge points. The principal components of vegetated swales are a dense covering of plants, with a deep root system to resist scouring, that tolerate fluctuations in soil moisture and temporary ponding of water, check dams (where needed) to pond water along the length of the swale, an engineered soil media or compost amended soil, and an underdrain in a gravel layer that is connected to the storm drain system or daylighted. The soil media is highly permeable and well drained. Water quality control is provided by sedimentation, filtering of stormwater runoff through the vegetation and soil media, biological and chemical reactions in the soil and root zone, plant uptake, and infiltration into the underlying soils. Reductions in the peak rate of runoff are achieved due to increases in the time of concentration compared to conventional conveyance systems and the temporary storage provided by the check dams and the void spaces in the soil and underdrain gravel. Infiltration into the underlying soils may provide some volume reduction. Vegetated swales are best suited for small drainage areas that have low sediment loads. The following specifications cover both simple grass channels and dry swales that function similarly to bioretention facilities.

6-1308.1B Grass channels can provide a modest amount of runoff filtering and volume attenuation within the stormwater conveyance system resulting in the delivery of less runoff and pollutants than a traditional system of curb and gutter, storm drain inlets and pipes. The performance of grass channels will vary depending on the underlying soil permeability. Grass channels, however, are not capable of providing the same stormwater functions as dry swales because they lack the storage volume associated with the engineered soil media. Their runoff reduction performance can be boosted when compost amendments are added to the bottom of the swale. Grass channels are a preferable alternative to both curb and gutter and storm drains as a stormwater conveyance system, where development density, topography and soils permit. Grass channels can also be used to treat runoff from the managed turf areas of turf-intensive land uses, such as sports fields and golf courses, and drainage areas with combined impervious and turf cover (e.g., roads and yards).

6-1308.1C Dry swales essentially are bioretention facilities that are shallower, configured as linear channels, and covered with turf or other surface material (other than mulch and ornamental plants). The dry swale is a soil filter system that temporarily stores and then filters the desired Treatment Volume (Tv). Dry swales rely on a pre-mixed soil media filter below the channel that is similar to that used for bioretention. If soils are extremely permeable, runoff infiltrates into

underlying soils. In most cases, however, the runoff treated by the soil media flows into an underdrain, which conveys treated runoff back to the conveyance system farther downstream. The underdrain system consists of a perforated pipe within a gravel layer on the bottom of the swale, beneath the filter media. Dry swales may appear as simple grass channels with the same shape and turf cover, while others may have more elaborate landscaping. Swales can be planted with turf grass, tall meadow grasses, decorative herbaceous cover, or trees.

6-1308.1D Grass channels shall conform to Virginia Stormwater Design Specification No. 3 Grass Channels (Latest version referenced in the VSMP Regulations), except as modified herein. Dry swales shall conform to Virginia Stormwater Design Specification No. 10 Dry Swales (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1308.2 Location and Siting

6-1308.2A In residential areas, vegetated swales and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the ~~Subdivision or Zoning~~ Stormwater Management Ordinance except as noted herein. The Director may approve the location of vegetated swales on individual buildable single-family detached lots for subdivisions creating no more than ~~three~~ seven lots where it can be demonstrated that the requirement is not practical or desirable due to constraints imposed by the dimensions or topography of the property and where adequate provisions for maintenance are provided. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities.

6-1308.2B Vegetated swales may be located on individual single-family detached residential lots that are not part of a bonded subdivision to satisfy the BMP requirements of the ~~Chesapeake Bay Preservation~~ Stormwater Management Ordinance for construction on the lot.

6-1308.2C Vegetated swales may ~~not~~ be located in the VDOT right-of-way with~~out~~ specific approval from VDOT.

6-1308.2D Setbacks. Vegetated swales shall meet the setback requirements for bioretention facilities in § 6-1307 *et seq*. ~~be located a minimum of 10 feet horizontally from building foundations preferably downgradient. Vegetated swales shall be located a minimum of 100 feet horizontally from water supply wells. Vegetated swales shall be located a minimum of 25 feet horizontally up gradient from septic fields and 50 feet horizontally down gradient from septic fields.~~ In addition, ~~V~~vegetated swales shall be set back a minimum of 2 feet from property lines except where swales are located in the right-of-way.

6-1308.2E Vegetated swales shall not be located in the vicinity of loading docks, vehicle maintenance areas, or outdoor storage areas, where there is the potential for high concentrations of hydrocarbons, toxics, or heavy metals in stormwater runoff.

6-1308.2F In order to maintain healthy growth, swales vegetated solely with grass shall be located so that they receive a minimum of six hours of sunlight daily during the summer months throughout the entire length of the swale.

6-1308.2G The maximum drainage area to a vegetated swale shall be 2 acres. The maximum impervious area draining to a vegetated swale shall be 1 acre.

6-1308.2H Vegetated swales typically are designed as online conveyance systems but may be used offline as pre-treatment for other types of BMPs.

6-1308.3 Maintenance

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1308.3A Vegetated swales and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Vegetated swales may not be located in County storm drainage easements. The above does not preclude the use of vegetated swales by the County <u>within existing County drainage easements or</u> on County-owned property.

6-1308.3B Maintenance access must be provided for all vegetated swales not located on individual buildable single family detached lots in accordance with § 6-1306 except that the access way may have a grass surface rather than an all-weather surface. For vegetated swales located on individual buildable single family detached lots, maintenance access shall be considered as an integral part of the design and designated on the plan.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1308.3A Vegetated swales ~~and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Vegetated swales may not be located in County storm drainage easements. The above does not preclude the use of vegetated swales by the County on County-owned property~~ <u>located in</u> ~~residentially zoned areas~~ <u>single-family and residential condominium developments shall be within County storm drainage easements and shall be maintained by DPWES. Vegetated swales and their appurtenant structures located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner and a Private Maintenance Agreement must be executed before the construction plan is approved</u>.

6-1308.3B Maintenance access must be provided for all vegetated swales ~~not located on individual buildable single family detached lots~~ in accordance with § 6-1306 except that the access way may have a grass surface rather than an all-weather surface. ~~For vegetated swales located on individual buildable single family detached lots, maintenance access shall be considered as an integral part of the design and designated on the plan.~~

6-1308.3C Vegetated swales shall be posted with permanent signs designating the area as a water quality management area. Signs for vegetated swales with check dams ~~(swales designed to capture and treat the water quality volume)~~ shall state that the facility is a water quality management area, water may pond after a storm, and the area is not to be disturbed except for required maintenance. Signs for vegetated swales (grass) without check dams shall state that the facility is a water quality management area and that the grass is to be maintained at a 4- to 8-inch height. Signs shall be posted at approximately 150-foot intervals along the length of the vegetated swale on alternating sides with a minimum of one sign for each swale. See Plate 81-6.

~~6-1308.4 General Design Requirements~~

~~6-1308.4A Vegetated swales may be designed to capture and treat the water quality volume using check dams or as simple conveyance systems without check dams. Swales designed as simple conveyance systems are not as effective in reducing pollutants as swales designed to capture and treat the water quality volume. Swales designed as simple conveyance systems are more commonly vegetated with grass. Swales designed to capture and treat the water quality volume are more commonly vegetated similarly to bioretention facilities~~.

~~6-1308.4B Pre-treatment. Bioretention soil media is not cohesive and must be protected from erosive forces. Energy dissipation devices with level spreaders shall be provided at all points of concentrated inflow to vegetated swales.~~

~~6-1308.4C The hydraulic capacity of vegetated swales shall be calculated using the procedures found in §6-1000 of the PFM. For grass swales, an "n" value of 0.2 shall be used for flow depths up to 4 inches decreasing to 0.03 at a depth of 12 inches. For swales vegetated with a combination of native grasses, other types of ground covers, and shrubs an "n" value of 0.15 shall be used.~~

~~6-1308.4D Vegetated swales shall be designed to convey the 10-year peak discharge within the channel and with a minimum freeboard of 6 inches at all check dams. The maximum velocity for the 2-year peak discharge shall be 3 feet per second.~~

~~6-1308.4E Swales shall be trapezoidal in shape to provide an even distribution of flow along the channel bottom. The bottom width of swales shall be 2-10 feet. Side slopes shall be no steeper than 3:1. Swales may vary in width along their length to conform to site topography and design goals.~~

~~6-1308.4F The longitudinal slope of vegetated swales shall be 1-5 percent.~~

~~6-1308.4G Underdrains shall be provided for all vegetated swales.~~

~~6-1308.4H The depth between the bottom of the gravel underdrain and the groundwater table or bedrock shall be a minimum of 2 feet as determined by field run soil borings.~~

~~6-1308.4I The minimum soil media depth shall be 2.0 feet for vegetated swales designed to capture and treat the water quality volume (swales with check dams). If trees and large shrubs are to be installed, soil depths shall be increased to a minimum of 4 feet. The bottom of the soil layer must be a minimum of 4 inches below the root ball of plants to be installed. A layer of 2-3 inches of mulch shall be placed on top of the soil media in areas not planted with vegetation. Biodegradable erosion control netting conforming to Standard and Specification 3.36 of the "Virginia Erosion and Sediment Control Handbook," 3rd edition, 1992, shall be used to retain the mulch and surface soils until the surface of the swale is established.~~

~~6-1308.4J The minimum soil media depth shall be 1.0 foot for vegetated swales (grass) designed to filter the water quality design flow (swales without check dams).~~

~~6-1308.4K The outfall of all vegetated swales and underdrains must be in conformance with the adequate drainage requirements of § 6-0200 *et seq*.~~

~~6-1308.4L Variations of the vegetated swale designs in Plates 87-6, 88-6, and 89-6 may be approved by the Director provided the facility meets all of the requirements in § 6-1308 *et seq*.~~

6-1308.4 ~~6-1308.5~~ ~~Water Quality Volume Based~~ Dry Swale Design

6-1308.4A ~~6-1308.5A~~ Treatment Volume. The required treatment volume shall be determined in accordance with Virginia Stormwater Design Specification No. 10 Dry Swales (Latest version referenced in the VSMP Regulations. ~~For facilities designed to capture and treat the first 0.5 inches of runoff, the required water quality volume is 1,815 cubic feet per acre of impervious area. For facilities designed to capture and treat the first 1.0 inch of runoff, the required water quality volume is 3,630 cubic feet per acre of impervious area. The water quality volume must be ponded behind the check dams so that it can be filtered through the soil media.~~

6-1308.4B ~~6-1308.5B~~ Check dams may ~~shall~~ be provided along the length of the swale to provide storage of ~~the water quality volume~~ a portion of the treatment volume or to reduce the effective slope. The maximum height of check dams shall be 1.5 feet. Check dams shall be located and sized such that the ponded water does not reach the toe of the next upstream check dam or create a tailwater condition on incoming pipes. The length of the channel segment over which water is ponded is a function of the slope of the swale and the height of the check dam computed as follows:

$L = h / s$

Where:
L = length of channel segment (ft.)
H = height of check dam (ft.)
S = channel slope (ft./ft.)

Channel segment lengths for various combinations of check dam height and channel slope that may be used for preliminary design are listed in Table 6.30. In determining the minimum spacing between check dams, add 5 feet to the computed channel segment length to assure that the ponded water does not reach the toe of the next upstream check dam.

Table 6.30 Channel Segment Length ft.

		Check Dam Height ft.		
		0.5	**1.0**	**1.5**
Channel Slope %	**1**	50	100	150
	2	25	50	75
	3	16.7	33.3	50
	4	12.5	25	37.5
	5	10	20	30

6-1308.4C ~~6-1308.5C~~ The volume stored behind a check dam is the average channel cross-section area at the ponding elevation multiplied by the length of the channel reach subject to ponding. Because the channel cross-section area is zero at the head of the reach, the average cross-section area is one half of the channel cross-section area at the low point of the check dam. The storage volume provided behind an individual check dam is computed as follows:

$V_s = L \times 0.5A_s$

Where:
V_s = volume of storage (ft^3)
L = length of channel segment (ft.)
A_s = cross-section area (ft^2) at the check dam

The channel cross-section area for a trapezoidal channel is computed as follows:

$A = by + Zy^2$

Where:
b = bottom width
y = flow depth
Z = side slope length per unit height (e.g., Z = 3 if side slopes are 3H:1V)

The channel cross-section area of a trapezoidal channel with 3:1 side slopes for various combinations of check dam height and bottom width that may be used for preliminary design are listed in Table 6.31.

Table 6.31 Channel Cross-section Area
ft^2

		Check Dam Height ft.		
		0.5	**1.0**	**1.5**
Bottom Width ft.	**2**	1.75	5.0	9.75
	3	2.25	6.0	11.25
	4	2.75	7	12.75
	5	3.25	8	14.25
	6	3.75	9	15.75
	7	4.25	10	17.25
	8	4.75	11	18.75
	9	5.25	12	20.25
	10	5.75	13	21.75

6-1308.4D ~~6-1308.4G~~ Underdrains shall be provided for all ~~vegetated~~ dry swales.

6-1308.4E ~~6-1308.4H~~ The depth between the bottom of the gravel underdrain and the groundwater table or bedrock shall be a minimum of 2 feet as determined by field run soil borings.

6-1308.4F ~~6-1308.4K~~ The outfall of all vegetated swales and underdrains must be in conformance with the adequate drainage requirements of § 6-0200 *et seq*.

6-1308.4G ~~6-1308.4L~~ Variations of the ~~vegetated~~ dry swale designs in the typical details and schematics dry swales in Virginia Stormwater Design Specification No. 10 Dry Swales (Version 1.9, March 1, 2011) ~~Plates 87-6, 88-6, and 89-6~~ may be approved by the Director provided the facility meets all of the requirements in § 6-1308 *et seq*.

6-1308.4H The sides of the excavation for placement of the bioretention soil media, underdrain, and gravel sump shall be lined with geotextile fabric for its' full depth and the bottom of the excavation shall be lined with geotextile fabric or 6-8 inches of sand.

6-1308.5 ~~6-1308.6~~ Grass Channel Design ~~Water Quality Design Flow Method~~

6-1308.5A ~~6-1308.6A~~ Design flow. Design flows shall be determined in accordance with Virginia Stormwater Design Specification No. 3 Grass Channels (Latest version referenced in the VSMP Regulations). ~~For grass swales that function primarily as conveyance systems , swale design for water quality treatment is based on the peak flow from a 2-inch, 24-hour storm. The peak water quality flow should be increased along the swale length to reflect inflows. If a single design flow is used, the flow at the outlet shall be used.~~

~~6-1308.6B The peak water quality flow shall be conveyed at a maximum depth equal to or less than 3 inches.~~

~~6-1308.6C The maximum velocity for the peak water quality flow shall be 1.0 ft./sec. Flow velocity is computed using the continuity equation:~~

$\cancel{V_{wq} = Q_{wq} / A_{wq}}$

~~Where:~~
~~V_{wq} = design flow velocity (ft./sec.)~~
~~Q_{wq} = design flow (cfs)~~
~~A_{wq} = cross-sectional area (ft^2) of flow at design depth~~

~~6-1308.6D The minimum hydraulic residence time (i.e., the time for water to travel the full length of the swale) shall be 18 minutes. The minimum hydraulic residence time may be reduced to 9 minutes if the majority of flow enters at the head of the swale. The swale length required to achieve a minimum hydraulic residence time of 18 minutes (1,080 seconds) is:~~

$\cancel{L = 1080V_{wq}}$

~~Where:~~
~~L = minimum swale length (ft.)~~
~~V_{wq} = design flow velocity (ft./sec.)~~

~~6-1308.6E The minimum swale length for swales designed using the water quality design flow method shall be 100 feet. The minimum length may be achieved with multiple swale segments connected by culverts with energy dissipaters.~~

6-1308.5B Check dams may be provided along the length of the swale to reduce the effective slope. See § 6-1308.4B.

6-1308.5C The use of compost amended soils is required for all grass channels.

6-1308.5D ~~6-1308.4K~~ The outfall of all vegetated swales and underdrains must be in conformance with the adequate drainage requirements of § 6-0200 *et seq*.

6-1308.5E ~~6-1308.4L~~ Variations of the ~~vegetated swale~~ grass channel designs in the typical details and schematics of grass channels in Virginia Stormwater Design Specification No. 3 Grass Channels (Latest version referenced in the VSMP Regulations) ~~Plates 87-6, 88-6, and 89-6~~ may be approved by the Director provided the facility meets all of the requirements in § 6-1308 *et seq*.

6-1308.6 ~~1308.7~~ Underdrains. Underdrains shall consist of pipe ≥ 6 inches in diameter placed in a layer of washed VDOT #57 stone. There shall be a minimum of 2 inches of gravel above and below the pipe. The underdrain shall begin within 10 feet of the upstream boundary of the swale. Underdrains shall be separated from the soil media in accordance with Virginia Stormwater Design Specification No. 10 Dry Swales (Latest version referenced in the VSMP Regulations) ~~by geotextile fabric or a 2- to 3-inch layer of washed VDOT #8 stone or 1/8- to 3/8-inch pea gravel~~. Underdrain pipe shall be perforated. All stone shall be washed with less than 1 percent passing a #200 sieve.

6-1308.7 ~~6-1308.8~~ Cleanouts. Cleanouts shall be placed every 100 feet along the length of ~~the swale~~ dry swales beginning at the upper end of the swale with a minimum of one cleanout per swale. Cleanouts shall be a minimum of 6 inches in diameter with a screw, or flange type cap to discourage vandalism and tampering. Cleanouts shall be nonperforated pipe except for the portion below the planting soil bed which must be perforated. For swales with check dams, the cap shall be above the BMP water surface elevation. For swales without check dams, the cap shall be above the ground surface.

6-1308.8 ~~6-1308.9~~ Materials Specifications

6-1308.8A ~~6-1308.9A~~ The bioretention soil media shall meet the requirements of § 6-1307.9A. Each vegetated swale shall have a minimum of one soil test performed on the final soil mixture. Test results and materials certifications shall be submitted to DPWES prior to bond release.

6-1308.8B ~~6-1308.9B~~ Mulch shall meet the requirements of § 6-1307.9B.

6-1308.8C ~~6-1308.9C~~ Underdrains shall meet the requirements of § 6-1307.9C.

6-1308.8D ~~6-1308.9D~~ Filter fabric. Filter fabric shall meet the requirements of § 6-1307.9D.

6-1308.8E ~~6-1308.9E~~ Check dams. Check dams may be constructed of non-erosive material such as wood, gabions, rip-rap, or concrete. Earthen berms or bio-logs also may be used to create

check dams. Whatever material is used, check dams shall be designed to prevent erosion where the check dams intersect the channel side walls. Check dams shall be anchored into the swale wall a minimum of 2 feet on each side with the toe protected by a suitable non-erodible material (e.g., stone). A notch or depression shall be placed in the top of the check dam to allow the 2-year flow to pass without coming into contact with the check dam abutments.

6-1308.8F Compost. Compost shall meet the requirements of Virginia Stormwater Design Specification No. 4 Soil Compost Amendment

6-1308.9 ~~6-1308.10~~ Vegetated Swale Planting Plans

6-1308.9A ~~6-1308.10A~~ Planting plans are required for all vegetated swales planted with a mixture of shrubs, perennial herbaceous plants, and trees (optional). Planting plans are not required for vegetated swales only planted with grass.

6-1308.9B ~~6-1308.10B~~ (102-08-PFM) Vegetated swale planting plans and specifications shall be prepared by a certified landscape architect, horticulturist, or other qualified individual who has knowledge of the environmental tolerance, ecological functions, and ecological impacts of plant species. Planting plans shall be prepared in accordance with the requirements of § 12-0515.

6-1308.9C ~~6-1308.10C~~ A mixture of shrubs, ~~and~~ perennial herbaceous plants, and grasses with a high density of fibrous roots is required. The use of trees is optional. Selected plants must be able to tolerate highly variable moisture conditions, generally dry with brief periods of inundation, retard and withstand stormwater flows, and filter pollutants. Depending on site conditions, selected plants also must be able to tolerate exposure to wind and sun, as well as salt and toxins in runoff from roads, parking lots, and driveways. The use of native plant species is preferred. The acceptability of proposed plant materials will be determined by the Director. Guidance on the use and selection of plants for vegetated swales is available from Urban Forest Management.

6-1308.9D ~~6-1308.10D~~ Plant materials shall meet the requirements of § 6-1307.10C and § 6-1307.10D.

6-1308.9E ~~6-1308.10E~~ The planting plan shall provide for plant community diversity and should consider aesthetics from plant form, color, and texture year-round. The vegetated swale design and selection of plant material shall serve to visually link the facility into the surrounding landscape. If trees and shrubs are part of the design, woody plant species shall not be placed directly within the inflow section of the swale.

6-1308.9F ~~6-1308.10F~~ All plantings must be well established prior to release of the conservation deposit. Nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released.

6-1308.9G ~~6-1308.10G~~ Design Guidelines for Vegetated Swale Planting Plans

6-1308.9G(1) ~~6-1308.10G(1)~~ The facility should be considered as a mass planting bed with plants that have ornamental characteristics linking it to the surrounding landscape;

6-1308.9G(2) ~~6-1308.10G(2)~~ The facility should contain a variety of plant species which will add interest to the facility with each changing season;

6-1308.9G(3) ~~6-1308.10G(3)~~ A mixture of shrubs and perennial herbaceous groundcover at an approximate ratio of 25 percent shrubs and 75 percent perennials shall be planted;

6-1308.9G(4) ~~6-1308.10G(4)~~ If trees are part of the design, only small ornamental trees may be used (Category I & II per Table 12.17). Trees may be substituted for shrubs up to an approximate ratio of 10 percent trees, 20 percent shrubs, and 70 percent perennials;

6-1308.9G(5) ~~6-1308.10G(5)~~ The plants shall be placed along the bottom of the swale. The side slopes of the swale shall be fully stabilized with vegetation. Spacing of plant material is species specific and will be subject to review and approval of the Director. In general the facility shall be planted at a density that the vegetation will cover 80-90 percent of the facility after the second growing season.

6-1308.10 ~~6-1308.11~~ Grassed Swale Vegetation. A dense cover of water-tolerant, erosion-resistant grass must be established. The selection of an appropriate species or mixture of species is based on several factors including climate, soils, topography, and sun tolerance. Grasses used in swales shall have the following characteristics: a deep root system to resist scouring; a high stem density, with well-branched top growth; water-tolerance; resistance to being flattened by runoff; and an ability to recover growth following inundation. Swales shall be sodded and pegged to provide immediate stabilization of the swale.

6-1308.11 ~~6-1308.12~~ Construction Specifications

6-1308.11A ~~6-1308.12A~~ The owner shall provide for inspection during construction of the facility by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers and results of the tests and inspections required under § 6-1308.8A, § 6-1308.11D, and § 6-1308.11J ~~§ 6-1308.9A, § 6-1308.12D, and § 6-1308.12J~~ shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1308.11B ~~6-1308.12B~~ Vegetated swales shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan.

6-1308.11C ~~6-1308.12C~~ The components of the soil media shall be thoroughly mixed until a homogeneous mixture is obtained. It is preferable that the components of the soil media be mixed at a batch facility prior to deliver to the site. The soil media shall be moistened, as necessary, to prevent separation during installation.

6-1308.11D ~~6-1308.12D~~ The soil media shall be tested for pH, organic matter, and soluble salts prior to installation. If the results of the tests indicate that the required specifications are not met, the soil represented by such tests shall be amended or corrected as required and retested until the soil meets the required specifications. If the pH is low, it may be raised by adding lime. If the pH is too high, it may be lowered by adding iron sulfate plus sulfur.

6-1308.11E ~~6-1308.12E~~ The soil media may be placed by mechanical methods with minimal compaction in order to maintain the porosity of the media. Spreading shall be by hand. The soil media shall be placed in 8- to 12-inch lifts with no machinery allowed over the soil media during or after construction. The soil media should be overfilled above the proposed surface elevation as needed to allow for natural settlement. Lifts may be lightly watered to encourage settlement. After the final lift is placed, the soil media shall be raked to level it, saturated, and allowed to settle for at least one week prior to installation of plant materials.

6-1308.11F ~~6-1308.12F~~ Fill for earthen check dams shall consist of clean material free of organic matter, rubbish, frozen soil, snow, ice, particles with sizes larger than 3 inches, or other deleterious material. Fill shall be placed in 8- to 12-inch lifts and compacted to at least 95 percent of Standard Proctor Maximum Density in accordance with ASTM D-698, AASHTO T-99, or VDOT specifications. Compaction equipment shall not be allowed within the facility on the soil bed. The top of the check dam shall be constructed level at the design elevation.

6-1308.11G ~~6-1308.12G~~ Plant material shall be installed per § 12-0705.

6-1308.11H ~~6-1308.12H~~ Planting shall take place after construction is completed and during the following periods: March 15 through June 15 and Sept. 15 through Nov. 15, unless otherwise approved by the Director.

6-1308.11I ~~6-1308.12I~~ All areas surrounding the facility that are graded or denuded during construction of the facility and are to be planted with turf grass shall be sodded.

6-1308.11J ~~6-1308.12J~~ Vegetated swales designed with check dams ~~to capture and treat the water quality volume~~ shall be inspected at 12-24 and 36-48 hours after a significant rainfall (0.5-1.0 inch) or artificial flooding to determine that the facility is draining properly. Results of the inspection shall be provided to DPWES prior to bond release.

6-1308.12 ~~6-1308.13~~ Plan Submission Requirements

6-1308.12A ~~6-1308.13A~~ Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures including underdrains.

6-1308. 12B ~~6-1308.13B~~ Typical cross section(s) of the swale showing the following: dimensions of swale, underdrain, soil media, underlying gravel layer, filter fabric, groundwater table, and bedrock. Cross section(s) of the check dams.

6-1308.12C ~~6-1308.13C~~ Profile showing the following: invert of the swale, gravel underdrain and pipe, groundwater table, bedrock, and check dams.

6-1308.12D ~~6-1308.13D~~ Detail(s) of check dams.

6-1308.12E ~~6-1308.13E~~ Plant schedule and planting plan specifying species, quantity of each species, stock size, type of root stock to be installed and amount of tree cover claimed for each tree species or spacing of shrubs and perennials within facility. Planting plan shall be in conformance with § 12-0515.

6-1308.12F ~~6-1308.13F~~ Sizing computations for the facility including volume of storage, channel cross-section, and spacing of check dams required and provided.

6-1308.12G Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 10.

6-1308.12H ~~6-1308.13G~~ Hydrologic and hydraulic calculations for the swale.

6-1308.12I ~~6-1308.13H~~ Field run soil borings used to determine the elevation of the groundwater table and/or bedrock.

6-1308.12J ~~6-1308.13I~~ A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1308.12K ~~6-1308.13J~~ Construction and materials specifications.

~~6-1308.14 Vegetated Swale Water Quality Treatment Volume Design Example:~~

~~6-1308.14A Given:~~

~~Drainage area to the swale = 30,000 ft^2~~
~~Impervious area (A_i) = 10,000 ft^2~~

~~Slope of swale (s) = 2.5%~~
~~Length of swale = 200 ft.~~

~~6-1308.14B Determine the required check dam height and spacing and channel cross-section for a water quality volume (WQ_v) of 0.5 inches per impervious acre (1,815 ft^3).~~

~~6-1308.14B(1) The water quality volume is:~~

~~WQv = 1,815 ft^3 (10,000 ft^2 / 43,560 ft^2)~~
~~= 417 ft^3~~

~~6-1308.14B(2) Select height and spacing of check dams. For a channel slope of 2.5 percent, the channel segment lengths subject to ponding for check dam heights of 0.5, 1.0, and 1.5 feet are:~~

~~L = h / s~~
~~= 0.5 ft./0.025 = 20 ft.~~
~~= 1.0 ft./0.025 = 40 ft.~~
~~= 1.5 ft./0.025 = 60 ft.~~

~~To determine the minimum spacing between check dams, add 5 feet to the computed channel segment length to assure that the ponded water does not reach the toe of the next upstream check dam. To determine the number of check dams, divide the total channel length by the minimum spacing and round down to the nearest whole number. If the computed value is a whole number, subtract one. This gives us minimum spacings of 25, 45, and 65 feet for check dam heights of 0.5, 1.0, and 1.5 feet, respectively.~~

~~The volume of water ponded behind an individual check dam is the required water quality volume divided by the number of check dams. For 7, 4, and 3 check dams, the required storage volumes are 59.6, 104.3, and 139 cubic feet, respectively.~~

~~The minimum required cross-section areas are:~~

~~Ax = 2.0(Vs / L)~~
~~= 2.0(59.6 ft^3 / 20 ft.) = 5.96 ft^2~~
~~= 2.0(104.3 ft^3 / 40 ft.) = 5.22 ft^2~~
~~= 2.0(139.0 ft^3 / 60 ft.) = 4.64 ft^2~~

~~From Table 6.31, it can be seen that a trapezoidal channel with 0.5-foot high check dams would need to exceed the allowable channel bottom width to provide the required storage volume. A trapezoidal channel with a 3-foot bottom width and 1.0-foot high check dams would work as would a trapezoidal channel with a 2-foot bottom width and 1.5-foot high check dams. The results of the above computations are summarized in Table 6.32.~~

~~**Table 6.32 Example Problem**~~			
	~~**Check Dam Height**~~		
	~~**0.5**~~	~~**1.0**~~	~~**1.5**~~
~~Number of Check Dams~~	~~7~~	~~4~~	~~3~~
~~Spacing of Check Dams~~	~~25 ft.~~	~~45 ft.~~	~~65 ft.~~
~~Storage Volume (Vs)~~	~~59.6 ft^3~~	~~104.3 ft^3~~	~~139.0 ft^3~~
~~Cross-section Area (Required)~~	~~5.96 ft^2~~	~~5.22 ft^2~~	~~4.64 ft^2~~
~~Cross-section Area (Provided)~~	~~--~~	~~6.0 ft^2~~	~~9.75 ft^2~~
~~Channel bottom width~~	~~--~~	~~3 ft.~~	~~2 ft.~~

~~6-1308.15 Vegetated Swale Water Quality Flow Design Example~~

~~6-1308.15A Given:~~

~~Drainage area to the swale = 30,000 ft^2~~
~~Impervious area (A_i) = 10,000 ft^2~~
~~Hydrologic Soil Group (HSG) of pervious area = "C"~~
~~Time of concentration T_c = 0.25 hr.~~
~~Time of travel Tt = 0.15 hr per 100 ft.~~
~~Slope of swale (s) = 2.5 %~~
~~Length of swale = 200 ft.~~

~~Assume that flow enters uniformly along the length of the swale. Therefore, the required minimum hydraulic residence time required is 18 minutes (§ 6-1308.6D).~~

~~6-1308.15B Calculate the design flow for a 20-inch, 24-hour storm using standard NRCS methods. The swale was modeled as two subareas and two 100-foot long reaches. T_c for the first 100-foot reach of the swale consists of 6 minutes for sheet flow to the swale and 9 minutes travel time in the swale. The resulting design flow is 0.54 cfs at the outlet of the swale. (Note that computation of the 2-year and 10-year storm flows should use a combined $T_c + T_t$ of 0.1 hour because of the lower "n" value and travel time in the swale at higher flow depths.)~~

~~6-1308.15C Flow in the swale is calculated based on Manning's equation for open channel flow.~~

$$\cancel{Q = \frac{1.49}{n} A R^{0.67} s^{0.5}}$$

~~Where:~~

~~Q = flow rate (cfs)~~

~~n = Manning's roughness coefficient (unitless)~~

~~A = cross-sectional area of flow (ft^2)~~

~~R = hydraulic radius (ft.)~~

~~s = longitudinal slope (ft./ft.)~~

~~For shallow flow depths in swales, channel side slopes may be ignored in the initial estimation of the bottom width. The following equation (a simplified form of Manning's equation) may be used to estimate the swale bottom width:~~

$$\cancel{b = Q_{wq} n_{wq} / 1.49 y^{1.67} s^{0.5}}$$

~~Where:~~

~~b = bottom width of swale (ft.)~~

~~Q_{wq} = water quality design flow (cfs)~~

~~n_{wq} = Mannings roughness coefficient for shallow flow conditions (unitless)~~

~~y = design flow depth (ft.)~~

~~s = longitudinal slope (ft./ft.)~~

~~6-1308.15D The design flow velocity is computed using the continuity equation.~~

$$\cancel{V_{wq} = Q_{wq} / A_{wq}}$$

~~Where:~~

~~V_{wq} = design flow velocity (ft./sec.)~~

~~A_{wq} = $by + Zy^2$ = cross-sectional area (ft^2) for a trapezoidal cross-section~~

~~Z = side slope length per unit height (e.g., Z = 3 if side slopes are 3H:1V)~~

~~6-1308.15E Determine the maximum allowable velocity for a hydraulic residence time of 18 minutes.~~

~~V_{wq} = L / 1,080~~

~~= 200 ft. / 1,080 sec.~~

~~= 0.19 ft./sec.~~

~~6-1308.15F Compute the estimated bottom width and design flow velocity using a flow depth of 3 inches (0.17 feet).~~

$$\cancel{b = 0.54(0.2)/1.49(0.25^{1.67})(0.025^{0.5}) = 4.6 \text{ ft.}}$$

~~$V_{wq} = 0.54 / [(4.6)(0.25) + (3)(0.25^2)] = 0.40$ ft./sec.~~

~~0.40 ft./sec. > 0.19 ft./sec. Not OK~~

~~6-1308.15G Recompute the estimated bottom width and design flow velocity using a flow depth of 2 inches (0.17 feet).~~

~~$b = 0.54(0.2) / 1.49(0.17^{1.67})(0.025^{0.5})$~~
~~$= 8.8$ ft.~~

~~$Vwq = 0.54 / [(8.8)(0.17) + (3)(0.17^2)]$~~
~~$= 0.34$ ft./sec.~~

~~0.34 ft./sec. > 0.19 ft./sec. Not OK~~

~~6-1308.15H At this point it is clear that in order to achieve the 18-minute hydraulic residence time required the slope of the channel must be reduced or a longer channel constructed. We can do both simultaneously by constructing a channel with the same upstream and downstream invert elevations along a sinusoidal path. Try a 300-foot long channel. The resulting slope is 1.7 percent. The maximum allowable velocity for the channel would now be:~~

~~$V_{wq} = L / 1{,}080$~~
~~$= 300$ ft. / 1,080 sec.~~
~~$= 0.29$ ft./sec.~~

~~6-1308.15I Recompute the estimated bottom width and design flow velocity using a flow depth of 2 in. (0.17 ft.) and a slope of 1.7%.~~

~~$b = 0.54(0.2) / 1.49(0.17^{1.67})(0.017^{0.5})$~~
~~$= 10.7$ ft.~~

~~10.7 ft. > 10 ft. Not OK~~

~~$Vwq = 0.54 / (10.7*0.17 + 3*0.17^2)$~~
~~$= 0.28$ ft./sec.~~

~~0.28 ft./sec. < 0.29 ft./sec. OK~~

~~6-1308.15J Although the velocity is acceptable, the swale bottom width is greater than the maximum allowable width. Repeat the procedure of lengthening the swale until an acceptable result is achieved.~~

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by deleting 6-1309 (Tree Box Filters) in its entirety:

~~**6-1309 Tree Box Filters** (98-07-PFM)~~

~~6-1309.1 A tree box filter is a type of bioretention filter contained in a precast or cast-in-place concrete structure. The principal components of a tree box filter are an inlet structure, a concrete box, a tree grate, plants that tolerate fluctuations in soil moisture and temporary ponding of water, a mulch layer, an engineered soil media, and an underdrain in a gravel layer that is connected to the storm drain system. The soil media is highly permeable and well drained. Water quality control is provided by filtering storm water runoff through the soil media and mulch, biological and chemical reactions in the soil, mulch, and root zone and plant uptake.~~

~~6-1309.1A Tree box filters are best suited for small drainage areas that have low sediment loads such as parking lots, courtyards, and along privately maintained streets.~~

~~6-1309.1B (106-10-PFM, 102-08-PFM) Trees in tree box filters may be used to meet the requirements of Chapter 122 of the Code and § 12-0000 *et seq*. of the PFM. Minimum planting area and minimum distance to barriers as required by § 12-0510.4E(5) must be met to use trees in tree box filters to meet 10-year tree canopy requirements. Use of some small trees may be possible (Category I and II).~~

~~6-1309.2 Location and Siting~~

~~6-1309.2A In residential areas, tree box filters and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof.~~

~~6-1309.2B Tree box filters may be located in the right-of-way subject to approval by VDOT.~~

~~6-1309.2C Tree box filters shall not be located in the vicinity of loading docks, vehicle maintenance areas, or outdoor storage areas, where there is the potential for high concentrations of hydrocarbons, toxics, or heavy metals in stormwater runoff unless effective pre-treatment is provided to reduce the concentrations.~~

~~6-1309.2D The maximum impervious area draining to a tree box filter shall be 0.25 acre.~~

~~6-1309.3 Maintenance~~

~~6-1309.3A Tree box filters and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Tree box filters may not be located in County storm drainage easements. The above does not preclude the use of tree box filters by the County on County-owned property.~~

~~6-1309.3B Maintenance access must be provided for all tree box filters. Access routes shall be depicted on plans for all facilities not located in parking lots or along streets.~~

~~6-1309.3C Tree box filters shall be stenciled (or a plaque provided) on the inside of the box in a location clearly visible upon removal of the tree grate designating the tree box as a water quality management facility. The stenciling or plaque shall state that the facility is a water quality management facility, water may pond after a storm, and the facility is not to be disturbed except for required maintenance.~~

~~6-1309.4 General Design Requirements~~

~~6-1309.4A Water Quality Volume. For facilities designed to capture and treat the first 0.5 inches of runoff, the required water quality volume is 1,815 cubic feet per acre of impervious area. For facilities designed to capture and treat the first 1.0 inches of runoff, the required water quality volume is 3,630 cubic feet per acre of impervious area. The water quality volume must be captured and filtered through the system.~~

~~6-1309.4B Flow Rate Based Design. For facilities whose treatment capacity is based on a maximum flow rate, the design methodology shall be approved by the Director.~~

~~6-1309.4C Tree box filters shall be located adjacent to a storm drain inlet to capture runoff that bypasses the system during heavy rainfall events.~~

~~6-1309.4D The top of the structure shall include a grate that will allow vegetation to grow through it and that is capable of supporting H-20 loads. The grate shall be removable for maintenance.~~

~~6-1309.4E The inlet structure shall be a standard curb inlet meeting VDOT requirements. A stone energy dissipater or other approved method shall be provided at the end of the inlet throat running along the entire length of the inlet at the surface of the soil media.~~

~~6-1309.4F Tree boxes shall be constructed of precast or cast-in-place reinforced concrete meeting VDOT requirements for drainage structures.~~

~~6-1309.4G To reduce construction costs, the bottom of the box may be left open in areas where there is potential for infiltration.~~

~~6-1309.4H The maximum surface storage depth from the top of the mulch layer to the bottom of the grate shall be 1 foot.~~

~~6-1309.4I An underdrain connected to the storm drain system shall be provided for all tree box filters. The outfall of all underdrains must be in conformance with the adequate drainage requirements of § 6-0200 *et seq.*~~

~~6-1309.4J The minimum soil media depth shall be 2.5 feet. The bottom of the soil layer must be a minimum of 4 inches below the root ball of plants to be installed. A layer of 2-3 inches of mulch shall be placed on top of the soil media.~~

~~6-1309.4K Variations of the tree box filter design in Plate 90-6 may be approved by the Director provided the facility meets all of the requirements in § 6-1309 *et seq.*~~

~~6-1309.5 Filter Bed Design. The required surface area of the filter is based on the volume of water to be treated and the available storage in the ponding area computed as follows:~~

$\cancel{A_f = WQ_v / h_f}$

~~Where:~~

$\cancel{A_f = \text{area of filter } (ft^2)}$

$\cancel{WQ_v = \text{water quality volume } (ft^3)}$

$\cancel{h_f = \text{maximum ponding depth (ft.)}}$

~~6-1309.6 Underdrains. Underdrains shall consist of perforated pipe ≥ 4 inches in diameter placed in a layer of washed VDOT #57 stone. There shall be a minimum of 2 inches of gravel above and below the pipe. Underdrains shall be laid at a minimum slope of 0.5 percent. Underdrains shall extend the length of the box from one wall to within 6 inches of the opposite wall and may be centered in the box or offset to one side. Underdrains shall be separated from the soil media by geotextile fabric or a 2- to 3-inch layer of washed VDOT #8 stone or 1/8- to 3/8-inch pea gravel. Underdrains shall include a cleanout with a locking cap that extends 6 inches above the soil media and is accessible by removing the grate. Cleanouts shall be nonperforated pipe equal to or greater in diameter than the underdrain pipe. All stone shall be washed with less than 1 percent passing a #200 sieve.~~

~~6-1309.7 Materials Specifications~~

~~6-1309.7A The bioretention soil media shall meet the requirements of § 6-1307.9A. A minimum of one soil test shall be performed on the final soil mixture. Test results and materials certifications shall be submitted to DPWES prior to bond release.~~

~~6-1309.7B Mulch shall meet the requirements of § 6-1307.9B.~~

~~6-1309.7C Underdrains shall meet the requirements of § 6-1307.9C.~~

~~6-1309.7D Filter fabric. Filter fabric shall meet the requirements of § 6-1307.9D.~~

~~6-1309.8 Tree Box Filter Planting~~

~~6-1309.8A A tree box filter shall be planted with a small tree or shrub that is able to tolerate highly variable moisture conditions, generally dry with brief periods of inundation. The selected plants must not have a root zone density or characteristics that will rapidly displace the soils or clog the underdrain. Depending on site conditions, selected plants also must be able to tolerate exposure to wind and sun, as well as salt and toxins in runoff from roads, parking lots, and driveways. The use of native plant species is preferred. The acceptability of proposed plant materials will be determined by the Director. Guidance on the use and selection of plants for tree box filters is available from Urban Forest Management.~~

~~6-1309.8B Plant materials shall meet the requirements of § 6-1307.10C and § 6-1307.10D.~~

~~6-1309.8C All plantings must be well established prior to release of the conservation deposit. Nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released.~~

~~6-1309.9 Construction Specifications~~

~~6-1309.9A The owner shall provide for inspection during construction of the facility by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers and results of the tests and inspections required under § 6-1309.7A, § 6-1309.9D, and § 6-1309.9H shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.~~

~~6-1309.9B Tree box filters shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan. The concrete box may be installed with the other elements of the storm drainage collection system provided that it is flushed of any accumulated sediments prior to installation of the underdrain, filter fabric and soil media components.~~

~~6-1309.9C The components of the soil media shall be thoroughly mixed until a homogeneous mixture is obtained. It is preferable that the components of the soil media be mixed at a batch facility prior to delivery to the site. The soil media shall be moistened, as necessary, to prevent separation during installation.~~

~~6-1309.9D The soil media shall be tested for pH, organic matter, and soluble salts prior to installation. If the results of the tests indicate that the required specifications are not met, the soil represented by such tests shall be amended or corrected as required and retested until the soil meets the required specifications. If the pH is low, it may be raised by adding lime. If the pH is too high, it may be lowered by adding iron sulfate plus sulfur.~~

~~6-1309.9E The soil media shall be placed by hand with minimal compaction in order to maintain the porosity of the media. Spreading shall be by hand. The soil media shall be placed in 8- to12-inch lifts with no machinery allowed over the soil media during or after construction. The soil media should be overfilled above the proposed surface elevation as needed to allow for natural settlement. Lifts may be lightly watered to encourage settlement. After the final lift is placed, the soil media shall be raked to level it, saturated, and allowed to settle for at least one week prior to installation of plant materials.~~

~~6-1309.9F Plant material shall be installed per § 12-0705.~~

~~6-1309.9G Planting shall take place after construction is completed and during the following periods: March 15 through June 15 and Sept. 15 through Nov. 15, unless otherwise approved by the Director.~~

~~6-1309.9H The facility shall be inspected at 12 - 24 hours after a significant rainfall (0.5-1.0 inch) or artificial flooding to determine that the facility is draining properly. Results of the inspection shall be provided to DPWES prior to bond release.~~

~~6-1309.10 Plan Submission Requirements~~

~~6-1309.10A Plan view(s) with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures including underdrains.~~

~~6-1309.10B Cross section of the facility showing the following: elevations and dimensions of the structure, inlet, outlet, underdrain, soil media, and underlying gravel layer, and filter fabric.~~

~~6-1309.10C Plant schedule specifying species, quantity of each species, stock size, type of root stock to be installed and amount of tree cover claimed for each tree species. Planting schedule shall be in conformance with § 12-0515.1E.~~

~~6-1309.10D Sizing computations for the facility including volume of storage and surface area of facility required and provided.~~

~~6-1309.10E Hydrologic calculations for the facility.~~

~~6-1309.10F Design calculations and specifications for all hydraulic structures including inlet structures and underdrain piping.~~

~~6-1309.10G A discussion of the outfalls from the facility is to be included in the outfall narrative.~~

~~6-1309.10H Construction and materials specifications.~~

~~6-1309.11 Tree Box Filter Design Example:~~

~~6-1309.11A Given:~~

~~Impervious area (A_i) draining to the facility = 1,500 ft^2~~
~~Maximum ponding depth (h_f) = 1.0 ft.~~

~~6-1309.11B Determine the required area of the filter bed (A_f) for a water quality volume (WQ_v) of 0.5 inch per impervious acre (1,815 ft^3).~~

~~6-1309.11C The water quality volume is:~~

~~WQ_v = 1,815 ft^3 (1,500 ft^2 / 43,560 ft^2)~~
~~= 62.5 ft^3~~

~~6-1309.11D The area of the filter bed is:~~

~~$A_f = WQ_v / h_f$~~
~~= 62.5 / 1.0 = 62.5 ft^2~~

~~6-1309.11E The minimum size tree filter box would be:~~

~~$\sqrt{62.5}$ = 7.9 ft. Use a square 8-foot x 8-foot box. A rectangular 6-foot x 11-foot box could also be used.~~

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1310 (Vegetated Roof) by revising it to read as follows:

6-1310 Vegetated Roof

6-1310.1 General.

6-1310.1A A vegetated roof (a.k.a. green roof) is a roof system consisting of the structural components of the roof, a waterproof membrane, a drainage layer, a layer of growth media, and plants. Depending on the type of plants and the waterproof membrane specified, an irrigation

system and a root barrier also may be provided. Vegetated roofs reduce the peak rate and volume of stormwater runoff through interception of rainfall and evapotranspiration. Vegetated roofs improve water quality by capturing and filtering airborne depositional pollutants and by plant uptake of dissolved pollutants. Additionally, a vegetated roof provides reductions in energy use for heating and cooling, improvements in air quality, and aesthetic benefits. Vegetated roofs are classified as extensive or intensive systems based on the depth of the growth media and function of the roof.

6-1310.1A(1) ~~6-1310.1A~~ Extensive systems are shallow systems, having a growth media depth of ~~3-6~~ 2-6 inches, a low unit weight, low construction cost, low plant diversity, and minimal maintenance requirements. Extensive systems are constructed when the primary purpose is to achieve environmental benefits and typically are only accessible for maintenance and inspection. ~~Extensive systems may be constructed on slopes of up to 33 percent.~~

6-1310.1A(2) ~~6-1310.1B~~ Intensive systems have a growth media depth of 6 inches or greater, a greater unit weight, increased design sophistication and construction costs, increased plant diversity, greater water holding capacity, and increased maintenance requirements compared to extensive systems. Intensive systems often are accessible and provide an amenity for occupants of the building. ~~Intensive systems may not be constructed on slopes greater than 10 percent.~~

6-1310.1B Vegetated roofs shall conform to Virginia Stormwater Design Specification No. 5 Vegetated Roof (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1310.1C ~~6-1310.2D~~ Post-development hydrology. For hydrologic computations using the Rational Method, the runoff coefficient "C" values for vegetated roofs in Table 6.5 shall be used. For hydrologic computations using Natural Resource Conservation Service (NRCS) methods, see §6-0802 ~~a Curve Number "CN" value of 65 shall be used for intensive systems and a value of 70 shall be used for extensive systems. Other values may be approved by the Director, depending on the composition and depth of the growth media and the slope of the roof, upon submission of a hydrologic analysis of the water retention capacity of the system~~.

6-1310.2 Feasibility and Limitations ~~General Requirements~~

6-1310.2A Vegetated roofs may be used on non-residential buildings (commercial, industrial, and institutional uses), parking structures, multi-family residential buildings including condominiums and apartments, and mixed-use buildings with a residential component.

6-1310.2B Vegetated roofs may not be used on single family detached or attached units for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the ~~Subdivision or Zoning~~ Stormwater Management Ordinance.

6-1310.2C Vegetated roofs may not be used on single family detached units in nonbonded subdivisions to satisfy the BMP requirements of the ~~Chesapeake Bay Preservation~~ Stormwater Management Ordinance.

6-1310.2D ~~6-1310.2C~~ Vegetated roofs must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved.

6-1310.2E Intensive systems may not be constructed on roofs with slopes greater than 10 percent. Extensive systems may not be constructed on roofs with slopes greater than 25%.

6-1310.3 Design of Vegetated Roofs

6-1310.3A ~~6-1310.4~~ ~~Design and Construction Specifications of~~ Vegetated Roof Components. Vegetated roofs typically consist of the structural components of the roof, a waterproof membrane, a root barrier (if required), a protective layer, a drainage layer, filter fabric, a layer of growth media, and plants. Vegetated roofs may also include an optional thermal insulation layer, a leak detection system, and an irrigation system. Specifications for the optional components of vegetated roofs are not provided herein but should meet any applicable Virginia USBC requirements. Variations on the vegetated roof system designs in the typical details and schematics in Virginia Stormwater Design Specification No. 5 Vegetated Roof (Latest version referenced in the VSMP Regulations) ~~Plates 91-6 and 92-6~~ may be approved by the Director provided the facility meets all of the requirements of §6-1310 *et seq*.

6-1310.3B ~~6-1310.3A~~ Extensive vegetated roof systems shall have a minimum growth media depth of ~~3~~ 2 inches and a maximum growth media depth of 6 inches. ~~The Director may approve growth media depths less than 3 inches for systems constructed on existing buildings when necessary because the structural design of the roof is not sufficient to carry the greater loads. Adjustments to the assigned runoff coefficients and curve numbers will be necessary to account for the reduced water holding capacity of the growth media.~~

~~6-1310.3B~~ Intensive vegetated roof systems shall have a minimum growth media depth of 6 inches. A maximum growth media depth is not specified for intensive vegetated roof systems. Unless needed to accommodate small trees or large shrubs, the growth media depth should not be greater than 12 inches. Intensive vegetated roof systems may include subareas with different growth media depths to accommodate different types of plants.

6-1310.3C The drainage layer below the growth media shall be designed to convey stormwater to the roof downspouts, conductors, and leaders without backing water up into the growth media. Roof areas draining to an individual roof drain may not exceed 4,300 square feet unless internal drainage conduits are provided. Internal drainage conduits shall be designed to convey the 10-year storm.

6-1310.3D Roof drains and emergency overflow measures shall be sized in accordance with the Virginia Uniform Statewide Building Code (USBC).

6-1310.3E Vegetated roofs shall have a minimum slope of 2 percent to provide for adequate drainage. The slope of extensive systems shall not be greater than 25 ~~33~~ percent. The slope of intensive systems shall not be greater than 10 percent. Extensive systems with slopes equal to or greater than 17 percent will require supplemental slope stabilization measures (e.g., raised grids) to hold the growth media and plants in place.

6-1310.3F Access to vegetated roofs for maintenance and inspection shall be provided unless waived by the Director. Access shall be provided by an interior stairway through a penthouse or by an alternating tread device with a roof hatch or trap door not less than 16 square feet in area and having a minimum dimension of 24 inches, or by a terrace door with a minimum clear opening width of 32 inches. The access requirement may be waived by the Director for roofs no greater than 12 feet above finished grade and less than 1000 square feet in area.

6-1310.3G Provisions for the safety of maintenance and inspection workers (e.g., parapets, railings, secured rings for safety harnesses, etc.) shall be incorporated in the design of all roofs.

6-1310.3H A vegetation-free zone is recommended along the perimeter of the roof and around all roof penetrations to act as a fire break and to facilitate maintenance and inspection. This zone should be a minimum of 24 inches in width along the perimeter of the roof and a minimum of 12 inches around all roof penetrations. The width of the vegetation-free zone around the perimeter of the roof may be reduced from 24 inches to 12 inches where application of the 24-inch requirement would result in a reduction of the roof area available for greening of greater than 15 percent.

6-1310.3I ~~6-1310.4H~~ Measures for irrigation shall be provided to ensure plant viability during long periods of drought unless waived by the Director. At a minimum, a hose bib shall be provided for manual irrigation. If automated irrigation is provided, the additional dead load shall be incorporated in the roof system design. The requirement to provide measures for irrigation may be waived by the Director for roofs no greater than 12 feet above finished grade and less than 1,000 square feet in area.

6-1310.3J ASTM Standards. The following ASTM standards should be used in the design of vegetated roofs.

6-1310.3J(1) ASTM E2396 Standard Test Method for Saturated Water Permeability of Granular Drainage Media [Falling-Head Method] for Green Roof Systems.

6-1310.3J(2) ASTM E2397 Standard Practice for Determination of Dead Loads and Live Loads associated with Green Roof Systems

6-1310.3J(3) ASTM E2398 Standard Test Method for Water Capture and Media Retention of Geo-composite Drain Layers for Green Roof Systems.

6-1310.3J(4) ASTM E2399 Standard Test Method for Maximum Media Density for Dead Load Analysis of Green Roof Systems

6-1310.3J(5) ASTM E2400 Standard Guide for Selection, Installation, and Maintenance of Plants for Green Roof Systems.

6-1310.4 Specifications of vegetated roof components

6-1310.4A Waterproof membrane. The waterproof membrane that separates the drainage system and growth media from the structural components of the roof can consist of several different systems including modified bitumen, rubberized asphalt, polyvinyl chloride (PVC), thermoplastic polyolephin (TPO), chlorosulfonated polyethylene (CSPE), and ethylene propylene diene monomer (EPDM) systems. Membranes impregnated with pesticides or herbicides are not allowed. Waterproofing must meet Virginia USBC requirements.

6-1310.4B Root barrier. A PVC, polypropelene, or polyethelene membrane ≥ 30 mil thick hot-air welded at the seams or approved equivalent is required to protect modified bitumen and rubberized asphalt waterproofing from root penetration. A root barrier is not required for PVC, EPDM, or CSPE membranes. Root barriers that have been impregnated with pesticides, metals or other chemicals that could leach into stormwater runoff are not allowed.

6-1310.4C Protective layer. A perforation resistant protective layer ~~is required~~ to protect the waterproofing and root barrier (if required) from damage is optional. A protective layer is typically is provided for systems that use granular drainage media or do not use root barriers. The protective layer shall be a polypropylene non-woven needled fabric with a density (ASTM D3776) ≥ 6 oz./yard^2 ~~and a puncture resistance (ASTM D4833) ≥ 220 pounds or approved equivalent~~.

6-1310.4D Drainage layer. The drainage layer shall be a single or composite system capable of conveying stormwater that drains through the growth media. Drainage layers may be a granular drainage media, synthetic geocomposite, or synthetic mat and may include internal drain pipes.

6-1310.4D(1) Granular drainage media shall be a non-carbonate mineral aggregate meeting the requirements listed in Table 6.33.

Table 6.33 Granular Drainage Media Specifications

Saturated Water Permeability (ASTM E2396)	≥ 25 in./min.

Total Organic Matter, by Wet Combustion (MSA)	≤ 1 %
Abrasion Resistance (ASTM C131)	≤ 25 % loss
Soundness (ASTM C88)	≤ 5 % loss
Porosity (ASTM C29)	≥ 25 %
pH	6.5 – 8.0
Grain-size Distribution (ASTM C136)	
Passing US #8 sieve	≤ 1%
Passing 1/4 in. sieve	≤ 30%
Passing 3/8 in. sieve	≥ 80%

6-1310.4D(2) For non-grid systems, a drainage system consisting of deformed polyethylene sheet with a transmissivity (ASTM D4716) greater than or equal to 24 gallons per minute per foot of width.

6-1310.4E Filter fabric. Filter fabric shall be a non-woven, root penetrable, needled, polypropylene geotextile meeting the requirements of Virginia Stormwater Design Specification No. 5 Vegetated Roof (Latest version referenced in the VSMP Regulations) ~~listed in Table 6.34~~. Heat-set or heat-calendared fabrics are not permitted.

~~**Table 6.34 Filter Fabric Specifications**~~	
~~Unit Weight (ASTM D3776)~~	~~≤ 4.25 oz./yd^2~~
~~Grab Tensile Strength (ASTM D4632)~~	~~≥ 90 lbs.~~
~~Mullen Burst Strength (ASTM D3786)~~	~~≥ 135 lbs./in^2~~
~~UV Resistance (ASTM D4355)~~	~~70% strength after 500 hours~~
~~Permittivity (ASTM D4491)~~	~~≥ 2 sec^{-1}~~

6-1310.4F Growth media. Growth media shall be a mineral and organic mixture that provides sufficient nutrients and water holding capacity to support the proposed plant materials. Growth media shall meet the requirements of Virginia Stormwater Design Specification No. 5 Vegetated Roof (Latest version referenced in the VSMP Regulations). ~~Tables 6.35, 6.36, and 6.37 provide specifications for the growth media that must be adapted to the specific application by a competent professional.~~ The growth media shall be tested for organic content to demonstrate compliance with Level 1 or Level 2 design criteria using standard test methods.

~~**Table 6.35 Growth Media Specifications**~~	
~~Total Organic Matter by Loss on Ignition (ASTM F1647, Method A)~~	~~3 – 20% (dry weight)~~
~~Maximum Water Capacity (ASTM E2399)~~	~~≥ 45 % (Vol.) for intensive systems~~ ~~≥ 35 % (Vol.) for extensive systems~~

~~Non-capillary Pore Space (void ratio) at Field Capacity, 0.333 bar (MSA)~~	~~≥ 15% (Vol.)~~
~~Saturated Water Permeability (ASTM D2434)~~	~~≥ 0.7 in./hr. for intensive systems~~ ~~≥ 1.4 in./hr. for extensive systems~~
~~pH~~	~~6.5 – 8.0~~
~~Nitrate + Ammonium, N (in $CaCl_2$)~~	~~≤ 80 mg/l~~
~~Phosphorus, P_2O_2 (in CAL)~~	~~≤ 200 mg/l~~
~~Potassium, K2O (in CAL)~~	~~≤ 700 mg/l~~
~~Magnesium, Mg (in $CaCl_2$)~~	~~≤ 160 mg/l~~

~~**Table 6.36 Mineral Fraction Grain-size Distribution (ASTM D422) for Intensive Sites**~~	
~~Clay ≤ 0.000079 in.~~	~~3 – 10%~~
~~Silt ≤ 0.0029 in.~~	~~10 – 17%~~
~~Passing US #60 sieve~~	~~10 – 40%~~
~~Passing US #18 sieve~~	~~30 – 100%~~

~~**Table 6.37 Mineral Fraction Grain-size Distribution (ASTM D422) for Extensive Sites**~~	
~~Clay ≤ 0.000079 in.~~	~~0%~~
~~Silt ≤ 0.0029 in.~~	~~0 – 15%~~
~~Passing US #60 sieve~~	~~10 – 40%~~
~~Passing US #18 sieve~~	~~30 – 100%~~
~~Passing 1/4 in. sieve~~	~~70 – 100%~~
~~Passing 3/8 in. sieve~~	~~90 – 100%~~

6-1310.4G Plants

6-1310.4G(1) The planting plan and specifications shall be prepared by a certified landscape architect, horticulturist, or other individual who is knowledgeable about the environmental tolerance and ecological functions and impacts of plant species.

6-1310.4G(2) ~~6-1310.4G(1)~~ Plant materials selected shall be shallow rooted, self-sustaining, and tolerant of direct sunlight, drought, wind, and frost. Plant materials for extensive systems may include mosses, sedums, herbaceous plants, and grasses. Plant materials for intensive systems may include mosses, sedums, herbaceous plants, grasses, shrubs and small trees. Invasive species that may disrupt or harm native plant communities shall not be used. The acceptability of proposed plant materials will be determined by the Director. Guidance on the use and selection of plants for vegetated roofs is available from Urban Forest Management.

6-1310.4G(3) ~~6-1310.4G(2)~~ Plants may be installed by vegetation mats, plugs, potted plants, sprigs, or direct seeding.

6-1310.4G(4) ~~6-1310.4G(3)~~ The planting plan shall be designed to achieve 90 percent coverage within two years of installation.

6-1310.4G(5) ~~6-1310.4G(4)~~ Measures for irrigation shall be provided in accordance with § 6-1310.3I ~~to ensure plant viability during long periods of drought unless waived by the Director. At a minimum, a hose bib shall be provided for manual irrigation. If automated irrigation is provided, the additional dead load shall be incorporated in the roof system design. The requirement to provide measures for irrigation may be waived by the Director for roofs no greater than 12 feet above finished grade and less than 1,000 square feet in area~~.

6-1310.5 Construction Requirements

6-1310.5A The owner shall provide for inspection during construction of the facility by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets, ~~and~~ certifications from the material suppliers, and test results of the organic content of the growing media required under § 6-1310.4F shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1310.5B Foot and equipment traffic on the roof shall be minimized. Traffic over the waterproof membrane must be strictly controlled until the protective layer and drainage layer are installed.)

6-1310.5C The organic and mineral components of the growth media shall be thoroughly mixed prior to installation. It is preferable that the components of the growth media be mixed at a batch facility prior to delivery to the site. The media shall be moistened, as necessary, to prevent separation during installation.

6-1310.5D The growth media shall be soaked at a rate of 30 gallons per 100 square feet and allowed to drain thoroughly before planting.

6-1310.5E Erosion Control. A bio-degradable jute mesh with an aperture of 0.375-1.0 inch and a tensile strength (ASTM D4632) $\geq$ 20 pounds or approved equivalent shall be provided when establishing plants from sprigs and/or seed.)

6-1310.5F Plant installation shall occur during the following periods: March 15 through June 15 and Sept. 15 through Nov. 15, unless otherwise approved by the Director.

6-1310.5G Shrubs and potted plants must be hardened off adequately prior to planting.

6-1310.5H The roof should be checked for leakage, slippage of membranes and soil erosion after planting.

6-1310.5I Plantings must be well established prior to release of the conservation deposit. The conservation deposit will be held for a minimum of one year after installation of the plantings and shall only be released if the 90 percent coverage required by § 6-1310.4G(4) ~~§ 6-1310.4G(3)~~ is achieved. If ninety percent coverage is not achieved, the area shall be replanted to achieve the minimum required coverage and the conservation deposit held for an additional year.

6-1310.6 Plan Submission Requirements

6-1310.6A Plan view(s) showing facility dimensions, planting plan, layout for internal drains (if provided as part of the drainage layer), roof access, walkways, roof penetrations, and setbacks from roof lines.

6-1310.6B Cross section of proposed roof system showing the waterproof membrane, root barrier, protection layer, drainage layer, filter fabric, soil media depth, and emergency overflow system. ~~See Plates 91-6 & 92-6.~~

6-1310.6C Specifications for the waterproof membrane, root barrier (if provided), protection layer (if provided), drainage layer, filter fabric, and soil media.

6-1310.6D Plant list specifying species, size, and number of proposed plants, seeding rates, planting procedures, and specifications for erosion control.

6-1310.6E Construction requirements, sequence, and procedures including a list of certifications and tests required to be provided to the County.

6-1310.6F Roof area in square feet that is vegetated.

6-1310.6G Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 5.

6-1310.6H ~~6-1310.6G~~ A note shall be placed on the cover sheet stating that the site plan includes a vegetated roof on the proposed building to meet stormwater and water quality control requirements and that construction of the vegetated roof is required with the building. The note

shall also state that the building plans shall include a statement signed and sealed by the licensed professional submitting the building design that:

6-1310.6H(1) ~~6-1310.6G(1)~~ The vegetated roof design on the building plans is in conformance with the vegetated roof design on the approved site plan;

6-1310.6H(2) ~~6-1310.6G(2)~~ Additional requirements for all items such as roof membranes, drains, irrigation systems, and safety rails shall comply with the requirements of the Virginia USBC;

6-1310.6H(3) ~~6-1310.6G(3)~~ Access to the vegetated roof has been provided in accordance with Public Facilities Manual § 6-1310.3F;

6-1310.6H(4) ~~6-1310.6G(4)~~ Provisions for the safety of maintenance and inspection workers have been incorporated in the design of the vegetated roof in accordance with Public Facilities Manual § 6-1310.3G; and

6-1310.6H(5) ~~6-1310.6G(5)~~ Manual or automated irrigation has been provided in accordance with Public Facilities Manual § 6-1310.3I ~~§ 6-1310.4H~~.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), 6-1311 (Reforestation) by revising it to read as follows:

6-1311 Reforestation ~~(98-07-PFM)~~

6-1311.1 ~~(102-08-PFM)~~ General.

6-1311.1A Site reforestation involves planting trees on existing turf or barren ground at a development site with the explicit goal of establishing a mature forest canopy that will intercept rainfall, increase evapotranspiration rates, and enhance soil infiltration rates. ~~Reforestation is the establishment of a forest ecosystem on open ungraded areas.~~ Forest ecosystems reduce the peak rate and volume of stormwater runoff through interception of rainfall by leaves and the forest duff layer, plant uptake and evapotranspiration, and infiltration into the soil. Forest ecosystems improve water quality by capturing and filtering airborne depositional pollutants, plant uptake of dissolved pollutants, and infiltration into the soil. Tree canopies provide energy conservation for buildings, screening, and other benefits in addition to stormwater management. Reforested areas may be used to meet the tree cover requirements of §12-0000 *et seq*. and Chapter 122 of the County Code. Ten-year canopy credit equivalent to the square footage of the area will be given for reforested areas that have been planted, and are established in accordance with the provisions of this section.

6-1311.1B ~~6-1311.2C~~ Post-development hydrology. A runoff coefficient “C” for reforested areas found in Table 6.5 shall be used for hydrologic computations using the Rational Method.

The Curve Number "CN" for use with Natural Resources Conservation Service methods shall be based upon woods in good condition and the underlying Hydrologic Soil Group.

6-1311.1C Reforestation shall conform to Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Appendix 4A) [Latest version referenced in the VSMP Regulations], except as modified herein.

6-1311.2 Feasibility and Limitations ~~General Requirements~~.

6-1311.2A ~~Reforested areas shall be placed in restrictive easements that include limited provisions for management practices necessary to assure the establishment of a healthy forest ecosystem.~~ In residential areas, reforested areas must be located on homeowner association (or "common") property and may not be located on individual buildable single family detached or attached residential lots, or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the ~~Subdivision or Zoning~~ Stormwater Management Ordinance. ~~Reforested areas may not be located on individual residential lots in nonbonded subdivisions to satisfy the BMP requirements of the Chesapeake Bay Preservation Ordinance.~~ The Director may approve the use of reforestation on individual buildable single-family detached lots for subdivisions creating no more than seven lots where it can be demonstrated that the requirement is not practical or desirable due to constraints imposed by the dimensions or topography of the property. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure establishment and protection of the reforested area.

6-1311.2B Reforested areas may be located on individual residential lots in nonbonded subdivisions to satisfy the BMP requirements of the Stormwater Management Ordinance. Designers should carefully consider the impact of the required easement on future use of the property.

6-1311.2C ~~6-1311.2E~~ In order to maximize the infiltration capacity, structure, and biota of the existing soil profile below the amended soil layer, areas to be reforested shall not be graded as part of the site development. The only land disturbance allowed is that which is necessary to amend the soils and install plantings.

6-1311.3 Maintenance

6-1311.3A ~~6-1311.2B~~ Reforested areas shall be privately managed and maintained.

6-1311.3B Reforested areas shall be placed in restrictive easements that include limited provisions for management practices necessary to assure the establishment of a healthy forest ecosystem.

6-1311.3C ~~6-1311.2D~~ Reforested areas shall be posted with permanent signs designating the area as a Conservation Area. Signs shall state that the area has been reforested as a Low Impact Development practice and no disturbance or cutting of vegetation is allowed. Signs must be a minimum of 8 inches by 10 inches mounted on posts at a height of 4 feet to 6 feet and placed at approximately 150-foot intervals along the perimeter of the reforested area. See Plates 81-6.

6-1311.4 ~~6-1311.3~~ Design of Reforested Areas.

6-1311.4A ~~6-1311.3A~~ Reforestation plans and specifications shall be prepared by a certified landscape architect, horticulturist, or other individual who is knowledgeable about the environmental tolerance, ecological functions, and impacts of plant species.

6-1311.4B ~~6-1311.3B~~ Except as noted below, reforested areas shall have a minimum contiguous area of ~~6~~5,000 square feet, be generally regular in shape, and have a minimum width of 35 feet. The Director may approve areas less than ~~6~~5,000 square feet in size or with minimum widths less than 35 feet provided such areas are contiguous to existing naturally vegetated areas that are preserved with restrictive easements or other long-term protective mechanisms or that are in uses associated with long-term preservation.

6-1311.4C ~~6-1311.3C~~ Reforested areas shall be designed to replicate adjacent forest communities using similar percentages of major indicator species or species that can adapt to abiotic conditions present in the area to be reforested. If there is no adjacent forest community to mimic, the area may be planted with pioneer species, such as Virginia pine, black locust, eastern red cedar, red maple, and persimmon.

6-1311.4D ~~6-1311.3D (106-10-PFM)~~ Reforested areas shall consist of a mixture of overstory trees, understory trees, and shrubs. Generally, overstory trees correspond to Category 3 or 4 trees and understory trees correspond to Category 1 or 2 trees as listed in Table 12.17 in §12-0000 *et seq*. At least 25 percent of the area shall be planted with trees from nursery stock. For nursery stock, deciduous trees must be a minimum of 1-inch caliper and evergreen trees must be a minimum of 6 feet in height. For areas planted with nursery stock, the density of overstory trees shall be a minimum of 100 trees per acre and the density of understory trees shall be a minimum of 200 trees per acre. Nursery stock may be replaced by transplanted material as approved by the Director. For areas planted with bareroot seedlings (See § 12-0705.5B), the density of the trees shall be double that required for nursery stock. The density of shrubs shall be a minimum of 400 ~~1089~~ plants per acre. Shrubs must be a minimum of 18 inches in height.

6-1311.4E ~~6-1311.3E~~ To curtail the spread of disease or insect infestation in a plant species, no more than 70 percent of the trees, seedlings, and shrubs required to be planted shall be of one genus. In addition, no more than 35 percent of the deciduous trees shall be of a single species and no more than 35 percent of the evergreen trees shall be of a single species. Seedlings shall be randomly mixed and placed approximately 8-10 feet apart in a random pattern with shrubs

placed surrounding seedlings. Additional guidance on appropriate species for soils and groundwater conditions can be found in § 12-0000.

6-1311.4F ~~6-1311.3F~~ Tree planting credit may be given for existing trees within the planting area. A planting credit of one 1-inch caliper nursery stock overstory tree shall be given for each 150 square feet of existing overstory tree canopy and a planting credit of one 1-inch caliper nursery stock understory tree shall be given for each 75 square feet of existing understory tree canopy.

6-1311.4G ~~6-1311.3G~~ Compacted soils will limit root growth and establishment of the forest ecosystem. Subsoiling (tilling) and soil amendments are required to relieve soil compaction and restore soil function in previously disturbed soils except as noted below.

6-1311.4G(1) The depth of subsoiling, the amount of compost to be incorporated, and the incorporation depth shall be determined in accordance with Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations).

6-1311.4G(2) Testing of the *in situ* soils for bulk density, pH, salts, and soil nutrients to a depth of 15 inches is required to determine if further soil amendments are needed. A minimum of one test for bulk density, pH, salts, and soil nutrients shall be performed per 5,000 square feet.

6-1311.4G(3) ~~6-1311.3G(1)~~ Subsoiling and soil amendments are not required if the *in situ* bulk density of the existing soil, as measured by the sand cone test (ASTM D1556) or nuclear gauge (ASTM D6938), is less than the value in Table 6.38 for the corresponding soil type or compaction, as measured by the cone penetration test (ASTM D3441), is less than 300 lb./square inch in the top 15 inches of soil. A minimum of one density measurement or test shall be performed per 1,000 square feet.

6-1311.4G(4) ~~6-1311.3G(2)~~ Testing of *in situ* soils to determine compaction is not required if soils will be amended at pre-approved rates in accordance with § 6-1311.4G(1) ~~§ 6-1311.5~~.

Table 6.38 Bulk Densities That May ~~E~~Affect Root Growth[1]

Soil Texture	**lb./ft^3**
Sands, loamy sands	105.50
Sandy loams, loams	101.76
Sandy clay loams, loams, clay loams	99.88
Silts, silt loams	99.88
Silt loams, silty clay loams	96.76
Sandy clays, silty clays, some clay loams (35- 45% clay)	93.02

Clays (>.45% clay)	86.77
[1] From "Protecting Urban Soil Quality: Examples for Landscape Codes and Specifications," USDA 2003	

6-1311.5 ~~6-1311.4~~ Subsoiling and Soil Amendment Specifications.

6-1311.5A Compost. See Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations) for required compost specifications.

6-1311.5B Mulch. Mulch shall consist of wood chips, bark chips, or shredded bark that has been aged for a minimum of 4 months.

~~6-1311.4B Subsoils below the amended topsoil layer shall be scarified to a depth of at least 4 inches.~~

~~6-1311.4C A minimum of 2 inches of organic mulch shall be placed on the topsoil layer at final grade for stabilization purposes after planting. Mulch shall consist of wood chips, bark chips, or shredded bark, that has been aged for a minimum of four months. Alternatively, a native seed mixture combined with appropriate stabilization measures may be used.~~

6-1311.6 ~~6-1311.5~~ Construction.

6-1311.6A See Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations) for the basic construction sequence for the soil amendments. ~~The following construction specifications are designed to achieve an 8-inch depth of topsoil and scarification of compacted subsoil 4 inches below the topsoil layer for a total uncompacted depth of 12 inches.~~

~~6-1311.5A Scarify or till subgrade to 8 inches depth. The entire surface shall be scarified except for the area within the drip lines of existing trees to be retained.~~

~~6-1311.5B Place and rototill 3 inches of organic compost meeting the requirements of Table 6.27 into 5 inches of soil.~~

6-1311.6B ~~6-1311.4A (106-10-PFM)~~ The topsoil layer shall have a minimum depth as determined under § 6-1311.4G ~~of 8 inches~~ except for areas within the dripline of existing trees in or adjacent to the area to be reforested, where subsoiling may adversely impact existing tree roots. Compacted soils within the dripline of existing trees shall be addressed by the use of mulch. The mulch shall consist of a minimum of 3 inches of organic mulch that shall be placed

on the topsoil layer at final grade. ~~Mulch shall consist of wood chips, bark chips, or shredded bark that has been aged for a minimum of 4 months.~~ Mulch beds must be kept free of any grass, weeds, vines and any other plant or condition that might hinder the establishment of the tree canopy.

6-1311.6B ~~6-1311.5C~~ After incorporation of the soil amendments, w~~W~~ater thoroughly and allow soil to settle for one week.

6-1311.6C ~~6-1311.5D~~ Rake beds to smooth and remove surface rocks larger than 2 inches in diameter.

6-1311.6D A test pit shall be dug to verify the depth of mulch, amended soil, and scarification. A rod penetrometer should be used to establish the depth of uncompacted soil at one location per 10,000 square feet. The results of these tests shall be included in the inspection report.

6-1311.6E ~~6-1311.5E~~ Planting should occur as soon as feasible after the soil has been amended.

~~6-1311.6 Planting Requirements~~

6-1311.6F ~~6-1311.6A~~ Planting procedures for trees, shrubs and seedlings shall be in conformance with § 12-0705.

6-1311.6G ~~6-1311.6B~~ Planting of the reforested area should be done with minimal mechanical disturbance to the existing trees and shrubs to be preserved and given credit per § 6-1311.4F ~~§ 6-1311.3F~~. The planting should be done by hand or mechanical auger.

6-1311.6H ~~6-1311.5F~~ After planting, mulch planting beds with 2 inches of organic mulch. ~~Mulch shall consist of wood chips, bark chips, or shredded bark, that has been aged for a minimum of four months.~~ Alternatively, a native seed mixture combined with appropriate stabilization measures may be used. Installation of the above stabilization measures shall be in accordance with the “Virginia Erosion and Sediment Control Handbook,” 3rd edition, 1992.

6-1311.6I ~~6-1311.6C~~ Plantings must be well established prior to release of the conservation deposit. The conservation deposit will be held for a minimum of two years after the initial installation of the plantings. Ninety percent or more of the minimum number of nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released. Sixty-seven percent or more of the initial tree seedling density required by the approved plan shall be viable at the time the conservation deposit is released. If these minimum percentages are not met at the time of inspection, additional nursery stock trees, nursery stock shrubs, and seedlings shall be planted at densities necessary to achieve the required minimum percentages of viability of the initial plantings based on the observed mortality rates. For example, if the plan called for 500 seedlings to be planted, a minimum of 335 seedlings (67

percent) must be viable more than two years after installation. If 250 seedlings were viable (a deficit of 85 viable plants) at the time of inspection (2.5 years after installation), 170 replacement seedlings would need to be planted, based on the observed mortality rate (50 percent), prior to release of the conservation deposit. Replacement seedlings shall be selected such that the resulting mixture of surviving and replacement plants will generally achieve the mixture of understory trees and overstory trees shown on the approved plan as determined by the Director.

6-1311.6J ~~6-1311.5G~~ The owner shall provide for inspection during installation of the soil amendments and planting by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the installation was performed in accordance with the approved plans. The licensed professional's certification along with a~~A~~n inspection report shall be provided to DPWES for review prior to bond release. This report shall include observed survival rates of plantings, replacement plantings installed, material delivery tickets, ~~and~~ certifications from material suppliers, and the above field tests (§ 6-1311.6D). For projects requiring as-built plans, the required inspection report and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required report and supporting documents shall be submitted with the RUP or non-RUP request.

6-1311.7 Plan Submission Requirements.

6-1311.7A Plant schedule and planting plan specifying species, quantity of each species, stock size, type of root stock to be installed, and spacing of proposed plants within the reforested area.

6-1311.7B Reforested areas shall be delineated on the plan sheets with the note: "Reforestation Area. This area is being replanted for Low Impact Development credit. No disturbance other than that necessary to implement the planting plan allowed."

6-1311.7C Construction specifications for soil amendments (if provided) and planting procedures.

6-1311.7D *In situ* soil test results ~~if performed~~ (see § 6-1311.4G ~~§ 6-1311.3G~~).

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding new 6-1312 (Rooftop (Impervious Surface) Disconnection) to read as follows:

6-1312 Rooftop (Impervious Surface) Disconnection

6-1312.1 General.

6-1312.1A Rooftop (impervious surface) disconnection manages runoff close to its source by intercepting, infiltrating, filtering, treating or reusing it as it moves from the impervious surface

to the drainage system. Two types of disconnection are included in the state design specifications: (1) simple disconnection, whereby rooftops or on-lot impervious surfaces are directed to pervious areas, and (2) disconnection leading to an alternative runoff reduction practice(s) adjacent to the roof. Alternative practices can use less space than simple disconnection and can enhance runoff reduction rates. Applicable practices include:

6-1312.1A(1) Soil compost amended filter path (§ 6-1315);

6-1312.1A(2) Infiltration by micro-infiltration practice (§ 6-1303);

6-1312.1A(3) Filtration by rain gardens or micro-bioretention (§ 6-1307);

6-1312.1A(4) Storage and reuse with a cistern or other vessel (§ 6-1316);

6-1312.1A(5) Storage and release in a stormwater planter (§ 6-1307).

6-1312.1B Rooftop Disconnections shall conform to Virginia Stormwater Design Specification No. 1 (Rooftop Disconnection (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1312.2 Feasibility and Limitations.

6-1312.2A Simple Rooftop Disconnection. Because of the constraints that would be placed on property owners' use of their land, difficulties in post-construction monitoring and enforcement, and the availability of more effective practices better suited to the County's urban nature, simple rooftop disconnection is not allowed without approval from the Director on a case by case basis. Designers seeking credit for sheet flow practices are directed to § 6-1313 Sheet Flow to a Vegetated Filter Strip or Conserved Open Space.

6-1312.2.B Rooftop disconnection leading to alternative runoff reduction practices. Rooftop disconnection leading to alternative runoff reduction practices will be allowed based on the applicability of and limitations on the type of alternative practice utilized. The use of rooftop disconnection leading to alternative runoff reduction practices generally will provide greater runoff reduction and take up less space than simple runoff reduction.

6-1312.2.C The impervious area treated by simple rooftop disconnection or a soil compost amended filter path is limited to 1,000 square feet.

6-1312.3 Maintenance.

6-1312.3A Rooftop disconnections must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved.

6-1312.3B The flow path for simple rooftop disconnections must be placed in an easement that prohibits grading and conversion to impervious surfaces.

6-1312.4 Design.

6-1312.4A Rooftop disconnections shall conform to Virginia Stormwater Design Specification No. 1 (Rooftop Disconnection (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1312.4B See § 6-1300 *et seq.* for design of the alternative runoff reduction practices listed in § 6-1312.1A that may be employed with rooftop disconnection.

6-1312.5 Plan Submission Requirements.

6-1312.5A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures.

6-1312.5B Areas of the flow path for simple rooftop disconnection shall be delineated by easements on the plan sheets with the note: "Sheet flow area for simple rooftop disconnection. This area is being used for BMP credit.

6-1312.5C Profile showing the flow path of the rooftop disconnection beginning at the peak of the roof and the slope of the pervious portion of the flow path.

6-1312.5D Plan submissions must include all plan submission requirements for any alternative runoff reduction practice utilized.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding new 6-1313 (Sheet Flow to a Vegetated Filter Strip or Conserved Open Space) to read as follows:

6-1313 Sheet Flow to a Vegetated Filter Strip or Conserved Open Space

6-1313.1 General.

6-1313.1A Filter strips are vegetated areas that treat sheet flow delivered from adjacent impervious and managed turf areas by slowing runoff velocities and allowing sediment and attached pollutants to settle and/or be filtered by the vegetation. The two types of filter strips are designed Vegetated Filter Strips and Conserved Open Space. The design, installation, and management of these design variants are different. In both instances, stormwater must enter the vegetated filter strip or conserved open space as sheet flow.

6-1313.1B Vegetated filter strips and conserved open space shall conform to Virginia Stormwater Design Specification No. 2 Sheet Flow to a Vegetated Filter Strip or Conserved Open Space (Latest version referenced in the VSMP Regulations) except as modified herein.

6-1313.2 Feasibility and Limitations.

6-1313.2A In residential areas, vegetated filter strips and conserved open space must be located on homeowner association (or "common") property and may not be located on individual buildable single family detached or attached residential lots, or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1313.2B Vegetated filter strips and conserved open space may be located on individual residential lots in nonbonded subdivisions to satisfy the BMP requirements of the Stormwater Management Ordinance. Designers should carefully consider the impact of the required easement on future use of the property

6-1313.2C Vegetated filter strips and conserved open space may only be used to treat flow that has not been concentrated. When the existing flow at a site is concentrated, a vegetated swale or other suitable practice should be used instead of a vegetated filter strip or conserved open space.

6-1313.3 Maintenance

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1313.3A Vegetated filter strips and conserved open space shall be privately managed and maintained.

6-1313.3B Vegetated filter strips and conserved open space shall be placed in restrictive easements that include limited provisions for management practices necessary to assure the establishment of a healthy forest ecosystem or vegetated filter strip. Vegetated filter strips also require private maintenance agreements.

6-1313.3C Maintenance access must be provided for all vegetated filter strips and conserved open space not located on individual buildable single family detached lots in accordance with § 6-1306 except that the access way may have a grass surface rather than an all-weather surface. For vegetated filter strips and conserved open space located on individual buildable single family detached lots, maintenance access shall be considered as an integral part of the design and designated on the plan.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1313.3A Vegetated filter strips and conserved open space located in single-family and residential condominium developments shall be maintained by DPWES. Vegetated filter strips and conserved open space located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner, and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1313.3B Vegetated filter strips and conserved open space shall be placed in restrictive easements that include limited provisions for management practices necessary to assure the establishment of a healthy forest ecosystem or vegetated filter strip. For publicly maintained facilities, appurtenant structures such as level spreaders and berms shall be placed in storm drainage easements.

6-1313.3C Maintenance access must be provided for all vegetated filter strips and conserved open space in accordance with § 6-1306 except that the access way may have a grass surface rather than an all-weather surface.

6-1313.3D Vegetated filter strips and conserved open space shall be posted with permanent signs designating the area as a Conservation Area. Signs for conserved open space shall state that the area is a Conservation Area and no disturbance or cutting of vegetation is allowed. Signs for vegetated filter strips shall state the area is a Conservation Area and no disturbance is allowed except for required mowing. Signs must be a minimum of 8 inches by 10 inches mounted on posts at a height of 4 feet to 6 feet and placed at approximately 150-foot intervals along the perimeter of the area. See Plate 81-6.

6-1313.4 Design of Vegetated Filter Strips and Conserved Open Space.

6-1313.4A The width of vegetated filter strips and conserved open space areas shall be determined in accordance with Virginia Stormwater Design Specification No. 2 Sheet Flow to a Vegetated Filter Strip or Conserved Open Space (Latest version referenced in the VSMP Regulations). Where the sheet flow to be treated originates from both pervious and impervious areas, the design shall be based on the requirements for sheet flow from impervious areas.

6-1313.4B The design of engineered level spreaders must include a bypass structure that diverts the design storm to the level spreader and bypasses larger storm events around the vegetated filter strip or conserved open space through a channel or other adequate conveyance.

6-1313.4C Subsoiling (tilling) and soil amendments are required to relieve soil compaction and restore soil function in all previously disturbed soils regardless of the hydrologic soil group except as noted below.

6-1313.4C(1) The depth of subsoiling, the amount of compost to be incorporated, and the incorporation depth shall be determined in accordance with Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations).

6-1313.4C(2) Testing of the *in situ* soils for bulk density, pH, salts, and soil nutrients to a depth of 15 inches is required to determine if further soil amendments are needed. A minimum of one test for bulk density, pH, salts, and soil nutrients shall be performed per 5,000 square feet.

6-1313.4C(3) Subsoiling and soil amendments are not required if the *in situ* bulk density of the existing soil, as measured by the sand cone test (ASTM D1556) or nuclear gauge (ASTM D6938), is less than the value in Table 6.38 for the corresponding soil type or compaction, as measured by the cone penetration test (ASTM D3441), is less than 300 lb./square inch in the top 15 inches of soil. A minimum of one density measurement or test shall be performed per 1,000 square feet.

6-1313.4C(4) Testing of *in situ* soils to determine compaction is not required if soils will be amended at pre-approved rates in accordance with § 6-1313.4B(1).

6-1313.5 Subsoiling and Soil Amendment Specifications.

6-1313.5A Compost. See Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations) for required compost specifications.

6-1313.5B Mulch. Mulch shall consist of wood chips, bark chips, or shredded bark that has been aged for a minimum of 4 months.

6-1313.6 Vegetated Filter Strip Planting Plans

6-1313.6A Planting plans are required for all vegetated filter strips.

6-1313.6B Planting plans and specifications for vegetated filter strips shall be prepared by a certified landscape architect, horticulturist, or other qualified individual who has knowledge of the environmental tolerance, ecological functions, and ecological impacts of plant species. Planting plans shall be prepared in accordance with the requirements of § 12-0515.

6-1313.6C A mixture of grasses and herbaceous plants with a high density of fibrous roots planted at a density sufficient to achieve 90% coverage after the second growing season is required. The use of shrubs and trees is optional. The acceptability of proposed plant materials will be determined by the Director. Guidance on the use and selection of plants for vegetated swales is available from Urban Forest Management.

6-1313.6D All plants shall conform to the latest version of American Standard for Nursery Stock published by the American Nursery and Landscape Association (ANSI Z60.1) for quality and sizing. Trees and shrubs shall be nursery grown unless otherwise approved and shall be healthy and vigorous, free from defects, decay, disfiguring roots, sun-scald, injuries, abrasions, diseases, insects, pests, and all forms of infestations or objectionable disfigurements as determined by the Director.

6-1313.6E Trees shall be a minimum of 1-inch caliper. Shrubs shall be a minimum of 2-gallon container size and herbaceous plants shall be a minimum of 6-inch diameter container size. Variations in size may be approved by the Director, based on the requirements of the specific plants listed in the schedule.

6-1313.6F All plantings must be well established prior to release of the conservation deposit. Nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released.

6-1313.7 Construction.

6-1313.7A See Virginia Stormwater Design Specification No. 2 Sheet Flow to a Vegetated Filter Strip or Conserved Open Space (Latest version referenced in the VSMP Regulations) for the basic construction sequence for vegetated filter strips and conserved open space and Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations) for the basic construction sequence for the soil amendments.

6-1313.7B The topsoil layer shall have a minimum depth as determined under § 6-1313.4B except for areas within the dripline of existing trees in or adjacent to the area to be vegetated, where subsoiling may adversely impact existing tree roots. Compacted soils within the dripline of existing trees shall be addressed by the use of mulch. The mulch shall consist of a minimum of 3 inches of organic mulch that shall be placed on the topsoil layer at final grade. Mulch beds must be kept free of any grass, weeds, vines and any other plant or condition that might hinder the establishment of the tree canopy.

6-1313.7C After incorporation of the soil amendments, water thoroughly and allow soil to settle for one week.

6-1313.7D Rake beds to smooth and remove surface rocks larger than 2 inches in diameter.

6-1313.7E A test pit shall be dug to verify the depth of amended soil and scarification. A rod penetrometer should be used to establish the depth of uncompacted soil at one location per 10,000 square feet. The results of these tests shall be included in the inspection report.

6-1313.7F Planting should occur as soon as feasible after the soil has been amended.

6-1313.7G Planting procedures for trees, shrubs and seedlings shall be in conformance with § 12-0705.

6-1313.7H Plantings must be well established prior to release of the conservation deposit. The conservation deposit will be held for a minimum of two years after the initial installation of the plantings. Ninety percent coverage is required at the time the conservation deposit is released.

6-1313.7I The owner shall provide for inspection during installation of the soil amendments and planting by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the installation was performed in accordance with the approved plans. The licensed professional's certification along with an inspection report shall be provided to DPWES for review prior to bond release. This report shall include observed survival rates of plantings, replacement plantings installed, material delivery tickets, certifications from material suppliers, and the above field tests (§ 6-1313.6E). For projects requiring as-built plans, the required inspection report and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required report and supporting documents shall be submitted with the RUP or non-RUP request.

6-1313.8 Plan Submission Requirements.

6-1313.8A Plan view(s) of the vegetated filter strip or conserved open space and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures.

6-1313.8B Profile view(s) of the vegetated filter strip or conserved open space and appurtenant structures showing the slope of the first 10 feet of the filter and the overall slope of the filter.

6-1313.8C Plant schedule and planting plan specifying species, quantity of each species, stock size, type of root stock to be installed, and spacing of proposed plants within the reforested area.

6-1313.8D Areas of conserved open space shall be delineated on the plan sheets with the note: "Conservation Area. No disturbance other than that necessary for forest management allowed."

6-1313.8E Construction specifications for soil amendments (if provided) and planting procedures.

6-1313.8F *In situ* soil test results (see § 6-1313.4G).

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding new 6-1314 (Soil Compost Amendment) to read as follows:

6-1314 Soil Compost Amendment

6-1314.1 General.

6-1314.1A Soil compost amendment is a practice applied after construction, to deeply till compacted soils and restore their porosity by amending them with compost. These soil amendments can reduce the generation of runoff from compacted urban lawns and also may be used to enhance the runoff reduction performance of downspout disconnections, grass channels, and filter strips. The following specifications cover areas to be revegetated with turf grass. The use of soil compost amendments for areas to be reforested is covered in § 6-1311 *et seq*.

6-1314.1B Soil Compost Amendment shall conform to Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1314.2 Feasibility and Limitations.

6-1314.2A In residential areas, areas of compost amended soils must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance except as noted herein. The Director may approve the use of compost amended soils on individual buildable single-family detached lots for subdivisions creating no more than seven lots where it can be demonstrated that the requirement is not practical or desirable due to constraints imposed by the dimensions or topography of the property and where adequate provisions for maintenance are provided. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities.

6-1314.2B Compost amended soils may be located on individual single-family detached residential lots that are not part of a bonded subdivision to satisfy the BMP requirements of the Stormwater Management Ordinance for construction on the lot.

6-1314.2C Notwithstanding the above, soil compost amendments may be used to restore the porosity of compacted soils on residential subdivision lots. These areas can then be treated as forest/open space in the runoff reduction calculation. However, a loss of 30% of the treated area over time is assumed to compensate for future conversions or disturbance of the area. The existence and purpose of the amended soils shall be disclosed as part of the chain of title to all future homeowners (e.g., individual members of a homeowners' association) responsible for maintenance of the facilities. Such areas of compost amended soils shall not be subject to the requirement that the areas be placed in an easement in § 6-1314.3.

6-1314.2D Setbacks. There are no setback requirements for compost amended soils. However, designers should consider the constraints placed on prospective property owners and avoid requesting credit for areas that are likely to be needed for future construction (e.g. decks and patios).

6-1314.3 Maintenance.

6-1314.3A Areas of compost amended soils shall be privately managed and maintained. Areas of compost amended soils may not be located in County storm drainage easements or sanitary sewer easements for BMP credit or runoff reduction credit. The above does not preclude the use of compost amended soils by the County within existing County drainage easements or on County-owned property.

6-1314.3B Areas of compost amended soils shall be placed in restrictive easements that preclude conversion of the area to impervious surfaces or compaction.

6-1314.4 Design Criteria.

6-1314.4A Plans and specifications for areas of compost amended soils shall be prepared by a certified landscape architect, horticulturist, or other individual who is knowledgeable about the process of amending soil with compost to relieve compaction and the establishment of turf grass.

6-1314.4B Compacted soils will limit root growth and establishment of a dense turf cover. Subsoiling (tilling) and soil amendments are required to relieve soil compaction and restore soil function in previously disturbed soils except as noted below.

6-1314.4B(1) The depth of subsoiling, the amount of compost to be incorporated, and the incorporation depth shall be determined in accordance with Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations).

6-1314.4B(2) Testing of the *in situ* soils for bulk density, pH, salts, and soil nutrients to a depth of 15 inches is required to determine if further soil amendments are needed. A minimum of one test for bulk density, pH, salts, and soil nutrients shall be performed per 5,000 square feet.

6-1314.4B(3) Subsoiling and soil amendments are not required if the *in situ* bulk density of the existing soil, as measured by the sand cone test (ASTM D1556) or nuclear gauge (ASTM D6938), is less than the value in Table 6.38 for the corresponding soil type or compaction, as measured by the cone penetration test (ASTM D3441), is less than 300 lb./square inch in the top 15 inches of soil. A minimum of one density measurement or test shall be performed per 1,000 square feet.

6-1314.4B(4) Testing of *in situ* soils § 6-1314.4B(3) to determine compaction is not required if soils will be amended at pre-approved rates in accordance with § 6-1314.4B(1).

6-1314.5 Specifications. See Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Version 1.8, March 1, 2011) for required compost specifications.

6-1314.6 Construction.

6-1314.6A See Virginia Stormwater Design Specification No. 4 Soil Compost Amendment (Latest version referenced in the VSMP Regulations) for the basic construction sequence for the soil amendments.

6-1314.6B The topsoil layer shall have a minimum depth as determined under § 6-1314.4G except for areas within the dripline of existing trees in or adjacent to the area to be amended with compost, where subsoiling may adversely impact existing tree roots. Compacted soils within the dripline of existing trees shall be addressed by the use of mulch. The mulch shall consist of a minimum of 3 inches of organic mulch that shall be placed on the topsoil layer at final grade. Mulched areas must be kept free of any grass, weeds, vines and any other plant or condition that might hinder the establishment of the tree canopy.

6-1314.6C After incorporation of the soil amendments, water thoroughly and allow soil to settle for one week.

6-1314.6D Rake beds to smooth and remove surface rocks larger than 2 inches in diameter.

6-1314.6E A test pit shall be dug to verify the depth of amended soil and scarification. A rod penetrometer should be used to establish the depth of uncompacted soil at one location per 10,000 square feet. The results of these tests shall be included in the inspection report.

6-1314.6F Turf grass may be established by seeding or laying sod.

6-1314.6G Turf must be well established prior to release of the conservation deposit. The conservation deposit will be held for a minimum of two years after the initial installation of the plantings. Ninety percent coverage must be achieved at the time the conservation deposit is released.

6-1314.6H The owner shall provide for inspection during installation of the soil amendments and planting by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the installation was performed in accordance with the approved plans. The licensed professional's certification along with an inspection report shall be provided to DPWES for review prior to bond release. This report shall include observed survival rates of plantings, replacement plantings installed, material delivery

tickets, certifications from material suppliers, and the above field tests (§ 6-1314.6E). For projects requiring as-built plans, the required inspection report and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required report and supporting documents shall be submitted with the RUP or non-RUP request.

6-1314.7 Plan Submission Requirements.

6-1314.7A Areas of compost amended soils for BMP credit shall be delineated by easements on the plan sheets with the note: "Area of Compost Amended Soils. Soil in this area is being amended for BMP credit." Areas of compost amended soils to be treated as forest/open space in the runoff reduction calculation shall be delineated on the plan sheets with the note: "Area of Compost Amended Soils. Soil in this area is being amended to return it to a more functional hydrologic condition. Seventy percent of the area may be treated as forest/open space in the runoff reduction calculation."

6-1314.7B Construction specifications for soil amendments and planting procedures.

6-1314.7C *In situ* soil test results (see § 6-1314.4B).

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding new 6-1315 (Rainwater Harvesting) to read as follows:

6-1315 Rainwater Harvesting

6-1315.1 General.

6-1315.1A Rainwater harvesting systems (RWHS) intercept, store, and use rainfall. Rainwater that falls on a collection surface is conveyed to a storage tank where it can later be used for non-potable water uses, and/or directed to a secondary BMP for treatment or infiltration.

6-1315.1B Rainwater harvesting can be combined with a secondary, down-gradient runoff reduction practice to enhance runoff volume reduction rates and provide treatment of overflow or drawdown of the storage tank during periods of reduced demand.

6-1315.1C Rainwater Harvesting systems shall conform to Virginia Stormwater Design Specification No. 6 Rainwater Harvesting (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1315.2 Feasibility and Limitations.

6-1315.2A1 Rainwater harvesting may be used for commercial, industrial, or multi-family residential uses to supply all or a portion of non-potable water demand.

6-1315.2B Non-potable uses may include, but are not limited to, water closets, urinals, irrigation, mechanical equipment and hose connections to perform operations, such as vehicle washing and lawn maintenance. Other applications may be used as approved by the Director.

6-1315.2C Rainwater harvesting systems may not be located in single family attached or detached residential developments for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1315.2D The owner of a RWHS is responsible for its on-going operation and maintenance. A private maintenance agreement must be executed before the construction plan is approved.

6-1316.3 Design of Rainwater Harvesting Systems.

6-1315.3A A rainwater harvesting system begins at the point of collection and terminates as waste after the water collected has been used in non-potable fixtures and outlets, industrial applications, or used for irrigation or other approved purposes. The parts of the RWHS include, but are not limited to: a) the collection surface; b) collection surface diversion (a.k.a roof washer, first-flush diverter); c) gutters, downspouts and/or collection piping; d) filtration and/or treatment appropriate for the intended application; e) storage tank (cistern); f) pump(s); g) distribution piping system; and h) a bypass or overflow. A RWHS may also incorporate meters, controls, automated systems for rainfall detection and soil moisture monitoring, a makeup water supply, and other components depending on the intended use.

6-1315.3B Rainwater harvesting systems shall conform to the Virginia Uniform Statewide Building Code (USBC).

6-1315.3C Acceptable sources of rainwater for harvesting and reuse include those collection surfaces and sources permitted by the USBC.~~:~~

6-1315.3D Collection of water from managed turf, vehicular parking or pedestrian surfaces is prohibited except where the water is used exclusively for landscape irrigation.

6-1315.3E The design and placement of rainwater storage tanks must comply with applicable provisions of the Fairfax County Zoning Ordinance, this section, and any other applicable federal, state, or county codes.

6-1315.3F Underground chambers used exclusively for RWHS storage, are not subject to the requirements of § 6-0303.6 and the access door requirements of § 6-1306.3H.

6-1315.3G Stormwater credit for rainwater harvesting and reuse must be determined using a continuous simulation model for sizing the rainwater storage tank. The Virginia Cistern Design Spreadsheet or an alternative computer simulation model approved by the Director shall be used

to quantify the runoff reduction volume credit for input into the Runoff Reduction Compliance Spreadsheet.

6-1315.3H The volume in the tank available for runoff reduction only applies to the useful storage volume that is available to receive stormwater inflow and must account for unused water remaining in the tank, “dead” storage below the pump cutoff elevation, storage above the overflow, freeboard, or an air gap above the maximum storage level. Freeboard volume above the maximum storage level must provide sufficient hydraulic head for proper function of the overflow, or a minumum five percent (5%) of the tank volume, whichever is greater.

6-1315.3I Local historical daily rainfall records shall be used to model daily precipitation for design of the RWHS. A multi-year series, such as the 30-year daily records in the Virginia Cistern Design Spreadsheet, shall be used.

6-1315.3J Daily demand (reuse) shall be based on calculations provided by the project architect and/or MEP engineer. For preliminary design, interior and exterior reuse can be estimated. Plan submittals shall include an itemized list or table of demand assumptions and calculations that support the daily reuse assumed for the design simulation.

6-1315.3K Daily demand assumptions shall appropriately account for fluctuations in reuse due to seasonal demand, day of the week (weekend vs. workday demand), or intermittent uses.

6-1315.3L If for any reason the designed dedicated end use becomes unavailable because of some change, an approved alternative end use or properly designed secondary BMP shall be installed to maintain stormwater credit for the RWHS.

6-1315.3M If a secondary or makeup water supply is used to supplement the RWHS, backup supply should be connected post-tank to the distribution system and should not occur in the tank. Connections must be protected from backflow in accordance with the USBC.

6-1315.3N An overflow or pre-tank diverter mechanism shall be included in RWHS designed to manage an individual storm event or multiple storms in succession that exceed the capacity of the tank.

6-1315.3O Overland relief must be provided in the form of a fail-safe bypass or overflow that ensures that if a complete failure of storm sewer system occurs, no building will be flooded or damaged by the design flow.

6-1315.3P RWH systems and downstream BMPs must discharge to an adequate channel.

6-1315.3Q Rainwater harvesting tanks may be oversized to provide additional stormwater detention volume. Tanks shall be modeled assuming that the Treatment Volume is full.

Supporting calculations shall include routing of the 1-year, 2-year, and 10-year storms, outfall to an adequate channel, and provision for overland relief.

6-1315.3R Access to the RWHS shall be provided for inspection and maintenance. Access opening(s) shall be provided in the storage tank in accordance with USBC. Where applicable, access to storage tanks shall consider confined space entry requirements.

6-1315.4 Specifications.

To ensure proper system installation and function, applicable codes, these guidelines, and any applicable manufacturer's installation and maintenance instructions must be followed. Engineered systems shall be installed per plans and specifications of the engineer of record.

6-1315.5 Construction.

6-1316.5A Permits for installation of a RWHS can vary depending on the type and location of storage tank(s) being installed, system components, and intended use of the harvested rainwater. The applicant shall be responsible for obtaining necessary permits prior to construction. Required permits may include, but are not limited to: site permits, building permit(s) for footings, foundations, enclosures, vaults or roof structures; plumbing permit; and an electrical permit for the pump(s) and electrical controls.

6-1315.6 Plan Submittals.

6-1315.6A The site plan and/or stormwater management plan shall include, as a minimum, the following:

6-1315.6A(1) A concise narrative describing the stormwater management strategy, describing how the RWHS fits into the overall plan, and stating all assumptions made in the design and the purpose(s) for which the harvested rainwater will be used.

6-1315.6A(2) Show the location(s) of the RWHS on the site, ~~A~~ a plan of the rainwater collection area including a roof plan of the building(s) that will be used to capture rainwater, showing slope direction and roof material. The plan shall include location of downspout leaders from the rooftops being used to capture rainwater.

6-1315.6A(3) Plan and profile view of the storm drain pipe layout between the building downspouts and the tank, if applicable, including materials, diameters, slopes and lengths.

6-1315.6A(4Overflow location, filter path, and if applicable, the secondary runoff reduction practice.

6-1315.6B RWHS construction details and specifications shall be submitted and shall include sufficient detail to construct the primary components of the RWHS including, as a minimum, the following:

6-1315.6B(1) The collection surface including area, dimensions, type of surface material, pitch and slope direction, and type and location of rainwater collection points.

6-1315.6B(2) The collection and conveyance system including the specified materials, slopes and diameters of gutters and downspouts.

6-1315.6B(3) Pre-screen and first-flush diverter including the specific filter performance specification and filter efficiency curves. Runoff estimates from the rooftop area captured for the 1-inch storm should be compared to filter efficiencies for the 1-inch storm. It is assumed that the first flush diversion is included in filter efficiency curves. A minimum of 95% filter efficiency should be met for the treatment volume credit.

6-1315.6B(4) Storage tank type, material, and dimensions in a scalable detail and cross-section illustrating the incremental volumes specified for: (a) the low water cut-off volume level; (b) the storage volume associated with the Treatment Volume credit; (c) the storage volume associated with the Channel Protection Volume (if applicable); (d) the storage volume associated with the Flood Protection Volume (if applicable); and (e) the overflow freeboard volume.

6-1315.6B(5) Distribution system.

6-1315.6B(6) The inverts of the orifice outlet, the emergency overflows, and, if applicable, the receiving secondary runoff reduction practice or on-site infiltration facility.

6-1315.5C Plans shall be accompanied by supporting calculations and documentation that include, as a minimum, the following:

6-1315.5C(1) A drainage area map delineating the collection surface area (square feet) to be captured and indicating the 1-inch storm, and design storm peak discharge values on the plan.

6-1315.5C(2) Calculations showing that the collection and conveyance system, at its specified size and slope, will convey the design storm(s).

6-1315.5C(3) A print-out of the “Input” tab, as modeled, from the Virginia Cistern Design Spreadsheet or Director-approved simulation model.

6-1315.5C(4) A print-out of the “Results - Treatment Volume Credit” tab, as modeled, from the Virginia Cistern Design Spreadsheet or Director-approved simulation model.

6-1315.5C(5) A tabulation of the daily demand assumptions used to size the storage tank and determine runoff reduction credit accounting for fluctuations in reuse due to seasonal demand, day of the week, or intermittent uses.

6-1315.6C(6) Design spreadsheet and computations for adequate outfall or a secondary BMP, if applicable, at the point of discharge.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding new 6-1316 (Wet Swale) to read as follows:

6-1316 Wet Swale

6-1316.1 General.

6-1316.1A Wet swales are a cross between a wetland and a swale and provide runoff filtering and treatment within the conveyance system. These linear wetland cells often intercept shallow groundwater to maintain a wetland plant community. The saturated soil and wetland vegetation provide an ideal environment for gravitational settling, biological uptake, and microbial activity. On-line or off-line cells are formed within the channel to create saturated soil or shallow standing water conditions (typically less than 6 inches deep). A regenerative stormwater conveyance (RSC) system is a modification of a wet swale that is used to bring stormwater down steep grades through a series of step pools. RSC systems are used primarily to address channel erosion and outfall issues.

6-1316.1B Wet Swales shall conform to Virginia Stormwater Design Specification No. 11 Wet Swale (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1316.2 Feasibility and Limitations.

6-1316.2A In residential areas, wet swales and their appurtenant structures must be located on homeowner association (or “common”) property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1316.2B Wet swales may be located in the VDOT right-of-way with specific approval from VDOT.

6-1316.2C Setbacks. Wet swales shall meet the setback requirements for bioretention facilities in § 6-1307 *et seq*. In addition, vegetated swales shall be set back a minimum of 2 feet from property lines except where swales are located in the right-of-way.

6-1316.2D Wet swales shall not be located in the vicinity of loading docks, vehicle maintenance areas, or outdoor storage areas, where there is the potential for high concentrations of hydrocarbons, toxics, or heavy metals in stormwater runoff.

6-1316.2E The maximum drainage area to a wet swale shall be 2 acres. The maximum impervious area draining to a wet swale shall be 1 acre.

6-1316.2F Wet swales typically are designed as online conveyance systems but may be used offline as pre-treatment for other types of BMPs.

6-1316.2G The use of regenerative conveyance systems is subject to review and approval by the Director on a case by case basis.

6-1316.3 Maintenance

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1316.3A Wet swales and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Wet swales may not be located in County storm drainage easements. The above does not preclude the use of wet swales by the County within existing County drainage easements or on County-owned property.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1316.3A Wet swales located in single-family and residential condominium developments shall be within County storm drainage easements and shall be maintained by DPWES. Wet swales and their appurtenant structures located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1316.3B Maintenance access must be provided for all wet swales in accordance with § 6-1306 except that the access way may have a grass surface rather than an all-weather surface.

6-1316.3C Wet swales shall be posted with permanent signs designating the area as a water quality management area. Signs shall state that the facility is a water quality management area that includes permanent pools of water, there may be additional ponding of water after a storm, and the area is not to be disturbed except for required maintenance. Signs shall be posted at approximately 150-foot intervals along the length of the wet swale on alternating sides with a minimum of one sign for each swale. See Plate 81-6.

6-1316.4 Design Criteria.

6-1316.4A Treatment Volume. The required treatment volume shall be determined in accordance with Virginia Stormwater Design Specification No. 11 Wet Swale (Latest version referenced in the VSMP Regulations).

6-1316.4B Check dams shall be provided along the length of the swale to provide storage of the treatment volume and to reduce the effective slope. The maximum height of check dams shall be 1.5 feet. Check dams shall be located and sized such that the ponded water does not reach the toe of the next upstream check dam or create a tailwater condition on incoming pipes. The length of the channel segment over which water is ponded is a function of the slope of the swale and the height of the check dam. See § 6-1308.4 *et seq*. for additional details on the design of check dams.

6-1316.4C The outfall of all wet swales must be in conformance with the adequate drainage requirements of § 6-0200 *et seq*.

6-1316.4D Variations of the wet swale designs in the typical details and schematics of wet swales in Virginia Stormwater Design Specification No. 11 Wet Swale (Latest version referenced in the VSMP Regulations) may be approved by the Director provided the facility meets all of the requirements in § 6-1317 *et seq*.

6-1316.5 Materials Specifications.

6-1316.5A Check dams. Check dams may be constructed of non-erosive material such as wood, gabions, rip-rap, or concrete. Earthen berms or bio-logs also may be used to create check dams. Whatever material is used, check dams shall be designed to prevent erosion where the check dams intersect the channel side walls. Check dams shall be anchored into the swale wall a minimum of 2 feet on each side with the toe protected by a suitable non-erodible material (e.g., stone). A notch or depression shall be placed in the top of the check dam to allow the 2-year flow to pass without coming into contact with the check dam abutments.

6-1316.6 Wet Swale Planting Plans

6-1316.6A Planting plans are required for all wet swales.

6-1316.6B Planting plans and specifications for wet swales shall be prepared by a certified landscape architect, horticulturist, or other qualified individual who has knowledge of the environmental tolerance, ecological functions, and ecological impacts of plant species. Planting plans shall be prepared in accordance with the requirements of § 12-0515.

6-1316.6C A mixture of shrubs, perennial herbaceous plants, and grasses with a high density of fibrous roots is required. The use of trees is optional. Selected plants must be able to tolerate

highly variable moisture conditions, generally dry with brief periods of inundation, retard and withstand stormwater flows, and filter pollutants. Depending on site conditions, selected plants also must be able to tolerate exposure to wind and sun, as well as salt and toxins in runoff from roads, parking lots, and driveways. The use of native plant species is preferred. The acceptability of proposed plant materials will be determined by the Director. Guidance on the use and selection of plants for vegetated swales is available from Urban Forest Management.

6-1316.6D All plants shall conform to the latest version of American Standard for Nursery Stock published by the American Nursery and Landscape Association (ANSI Z60.1) for quality and sizing. Trees and shrubs shall be nursery grown unless otherwise approved and shall be healthy and vigorous, free from defects, decay, disfiguring roots, sun-scald, injuries, abrasions, diseases, insects, pests, and all forms of infestations or objectionable disfigurements as determined by the Director.

6-1316.6E Trees shall be a minimum of 1-inch caliper. Shrubs shall be a minimum of 2-gallon container size and herbaceous plants shall be a minimum of 6-inch diameter container size. Variations in size may be approved by the Director, based on the requirements of the specific plants listed in the schedule.

6-1316.6F All plantings must be well established prior to release of the conservation deposit. Nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released.

6-1316.7 Construction.

6-1316.7A The owner shall provide for inspection during construction of the facility by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers and results of inspections shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1316.7B Wet swales shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan.

6-1316.7C Fill for earthen check dams shall consist of clean material free of organic matter, rubbish, frozen soil, snow, ice, particles with sizes larger than 3 inches, or other deleterious

material. Fill shall be placed in 8- to 12-inch lifts and compacted to at least 95 percent of Standard Proctor Maximum Density in accordance with ASTM D-698, AASHTO T-99, or VDOT specifications. Compaction equipment shall not be allowed within the facility on the soil bed. The top of the check dam shall be constructed level at the design elevation.

6-1316.7D Plant material shall be installed per § 12-0705.

6-1316.7E Planting shall take place after construction is completed and during the following periods: March 15 through June 15 and Sept. 15 through Nov. 15, unless otherwise approved by the Director.

6-1316.7F All areas surrounding the facility that are graded or denuded during construction of the facility and are to be planted with turf grass shall be sodded.

6-1316.7G Additional guidelines for construction are provided in Virginia Stormwater Design Specification No. 11 Wet Swale (Latest version referenced in the VSMP Regulations).

6-1316.8 Plan Submission Requirements.

6-1316.8A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures.

6-1316.8B Typical cross section(s) of the swale showing the following: dimensions of swale, groundwater table, and bedrock. Cross section(s) of the check dams.

6-1316.8C Profile showing the following: invert of the swale, groundwater table, bedrock, and check dams.

6-1316.8D Detail(s) of check dams.

6-1316.8E Plant schedule and planting plan specifying species, quantity of each species, stock size, type of root stock to be installed and amount of tree cover claimed for each tree species or spacing of shrubs and perennials within facility. Planting plan shall be in conformance with § 12-0515.

6-1316.8F Sizing computations for the facility including volume of storage, channel cross-section, and spacing of check dams required and provided.

6-1316.8G Hydrologic and hydraulic calculations for the swale.

6-1316.8H Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 11.

6-1316.8I A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1316.8J Construction and materials specifications.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding new 6-1317 (Filtering Practices) to read as follows:

6-1317 Filtering Practices

6-1317.1 General.

6-1317.1A Stormwater filters are used to treat stormwater runoff from small, highly impervious sites. Stormwater filters capture, temporarily store, and treat stormwater runoff by passing it through an engineered filter media, collecting the filtered water in an underdrain, and then returning it back to the storm drainage system. The filter consists of two chambers: the first is devoted to settling, and the second serves as a filter bed consisting of a sand or organic filter media. Stormwater filters depend mainly on physical treatment mechanisms to remove pollutants from stormwater runoff, including gravitational settling in the sedimentation chamber, straining at the top of the filter bed, and filtration and adsorption onto the filter media. Microbial films often form on the surface of the filter bed, which can also enhance biological removal. Filters usually are designed only for water quality treatment.

6-1317.1B Stormwater filters can be classified into several broad categories:

6-1317.1B(1) Surface sand filters. The surface sand filter is designed with both the filter bed and sediment chamber located at ground level. Surface sand filters are normally designed to be off-line facilities, so that only the desired water quality or runoff reduction volume is directed to the filter for treatment. Surface sand filters can be designed as either non-structural systems with configurations similar to bioretention facilities or as structural systems using pre-cast or cast-in-place concrete chambers. The “Austin Sand Filter” design is an example of a surface sand filter.

6-1317.1B(2) Underground sand filters. The underground sand filter is designed with both the filter bed and sediment chamber in an underground vault and is often designed with an internal flow splitter or overflow device that bypasses runoff from larger stormwater events around the filter. Underground sand filters are expensive to construct, but they consume very little space and are well suited to ultra-urban areas. The “DC Sand Filter” design is an example of an underground sand filter.

6-1317.1B(3) Perimeter sand filters. The perimeter sand filter also is designed with both the filter bed and sediment chamber in an underground vault. However, in this design flow enters the system through grates or a curb inlet, usually at the edge of a parking lot. The perimeter sand filter is usually designed as an on-line practice (i.e., all flows enter the system), but larger events bypass treatment by entering an overflow chamber. One major advantage of the perimeter sand

filter design is that it requires little hydraulic head and is therefore a good option for sites with low topographic relief. The "Delaware Sand Filter" design is an example of a perimeter sand filter.

6-1317.1C Stormwater filters shall conform to Virginia Stormwater Design Specification No. 12 Filtering Practices (Latest version referenced in the VSMP Regulations), except as modified herein. Additional guidance on the design of sand filters is provided in the "Northern Virginia BMP Handbook Addendum; Sand Filtration Systems" (NVPDC/ESI, 1996) available online from the Northern Virginia Regional Commission.

6-1317.1D The requirements and specifications herein cover non-proprietary stormwater filters. Requirements and specifications for proprietary stormwater filters are in § 6-1322 et seq.

6-1317.2 Feasibility and Limitations.

6-1317.2A Stormwater filters are recommended for areas 1.5 acres or less and greater than 65% impervious.

6-1317.2B In residential areas, stormwater filters and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1317.2C Stormwater filters may be located in the VDOT right-of-way with specific approval from VDOT.

6-1317.2D Setbacks. Surface sand filters shall be set back a minimum of 2 feet from property lines.

6-1317.2E Stormwater filters may not be utilized in-line with the main conveyance system where the main conveyance system is maintained by the County or carries through drainage from adjoining properties.

6-1317.3 Maintenance.

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1317.3A Stormwater filters and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Stormwater filters may not be located in County storm drainage easements. The above does not preclude the use of stormwater filters by the County within existing County drainage easements

or on County-owned property.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1317.3A Stormwater filters located in single-family and residential condominium developments shall be within County storm drainage easements and shall be maintained by DPWES. Stormwater filters and their appurtenant structures located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1317.3B Maintenance access must be provided for all stormwater filters in accordance with § 6-1306. Access routes shall be depicted on plans for all facilities not located in parking lots or along streets.

6-1317.3C Stormwater filters with above ground ponding areas shall be posted with permanent signs designating the area as a water quality management area. Signs shall state that the facility is a water quality management area, water may pond after a storm, and the area is not to be disturbed except for required maintenance. Signs shall be posted at approximately 150-foot intervals along the perimeter of the filter area with a minimum of one sign for each facility. (See Plate 81-6.)

6-1317.3D Stormwater filters with below ground chambers shall be stenciled (or a plaque provided) on the inside of the box in a location clearly visible upon removal of the access manhole or door designating the stormwater filter as a water quality management facility. The stenciling or plaque shall state that the facility is a water quality management facility, water may pond after a storm, and the facility is not to be disturbed except for required maintenance.

6-1317.4 Design Criteria.

6-1317.4A Filter Area and Storage Volume. The required filter area and storage volume shall be determined in accordance with Virginia Stormwater Design Specification No. 12 Filtering Practices (Latest version referenced in the VSMP Regulations).

6-1317.4B For on-line facilities, the inlet must be designed to pass the peak flow rate for the 10-year storm. For off-line facilities, a flow splitter shall be used to capture the design storm (typically the treatment volume) and pass larger flows around the facility.

6-1317.4C For surface filters, the maximum surface storage depth from the top of the filter to the elevation of the overflow weir or drop inlet shall be 1 foot.

6-1317.4D Berms used to pond water in surface filters shall be a maximum of 2.0 feet in height measured from the downstream toe-of-slope to the top of the berm. The width of the top of the berm

shall be a minimum of 2.0 feet. The side slopes of the berm shall be a maximum of 3:1. Berms and overflow weirs shall be sodded and pegged in accordance with the most recent edition of the "Virginia Erosion and Sediment Control." Facilities with berms that are equal to or less than 2.0 feet in height or excavated facilities will not be subject to the requirements of § 6-1600 (Design and Construction of Dams and Impoundments).

6-1317.4E The side slopes of the surface filter above ground shall be a maximum of 3:1. Where space permits, gentle side slopes (e.g., 5:1) are encouraged to blend the facility into the surrounding landscape. Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with Virginia Occupational Safety and Health (VOSH) requirements. If the facility is located on problem soils, as defined in Section 107-2-2 (j) of the County Code, a professional authorized by the State shall specify the maximum acceptable slope.

6-1317.4F An outlet structure must be provided to convey the peak flow for the 10-year storm. The outlet structure may be a bypass pipe, drop inlet, or weir. A minimum freeboard of 6 inches shall be provided from the maximum elevation of the 10-year storm to the top of the facility.

6-1317.4G An emergency overflow weir shall be provided for all facilities with berms. The emergency overflow weir must have the capacity to pass the peak flow from the 100-year storm without overtopping the facility. If the facility design includes a weir in the berm to convey the peak flow for the 10-year storm, it also may be designed to function as the emergency overflow weir. The minimum weir length shall be 2 feet.

6-1317.4H The outfall of all outlet structures, emergency overflow weirs, and underdrains must be in conformance with the adequate drainage requirements of § 6-0200 et seq.

6-1317.4I The depth between the bottom of the facility and groundwater table or bedrock shall be a minimum of 2 feet for surface filters as determined by field run soil borings.

6-1317.5 Specifications.

6-1317.5A Underdrains shall be PVC pipe conforming to the requirements of ASTM F758, Type PS 28 or ASTM F949; HDPE pipe conforming to the requirements AASHTO M252 or M 294, Type S; or approved equivalent pipe. Underdrains shall be perforated with four rows of 3/8-inch holes with a hole spacing of 3.25 ± 0.25 inches or a combination of hole size and spacing that provides a minimum inlet area ≥ 1.76 square inches per linear foot of pipe or be perforated with slots 0.125 inches in width that provides a minimum inlet area ≥ 1.5 square inches per linear foot of pipe.

6-1317.5B Filter fabric. Filter fabric shall be a needled, non-woven, polypropylene geotextile meeting the requirements listed in Virginia Stormwater Design Specification No. 12 Filtering

Practices (Latest version referenced in the VSMP Regulations). Heat-set or heat-calendared fabrics are not permitted.

6-1317.6 Construction.

6-1317.6A The owner shall provide for inspection during construction of the facility by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers and results of the inspections required under 6-1317.6E shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1317.6B Stormwater filters shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan. The concrete box may be installed with the other elements of the storm drainage collection system provided that it is flushed of any accumulated sediments prior to installation of the underdrain, filter fabric and soil media components.

6-1317.6C Fill for the berm and overflow weir of non-structural filters shall consist of clean material free of organic matter, rubbish, frozen soil, snow, ice, particles with sizes larger than 3 inches, or other deleterious material. Fill shall be placed in 8- to12-inch lifts and compacted to at least 95 percent of Standard Proctor Maximum Density in accordance with ASTM D-698, AASHTO T-99, or VDOT specifications. Compaction equipment shall not be allowed within the facility on the soil bed. The top of the berm and the invert of the overflow weir shall be constructed level at the design elevation.

6-1317.6D All areas surrounding the facility that are graded or denuded during construction of the facility and are to be planted with turf grass shall be sodded.

6-1317.6E The facility shall be inspected at 12 - 24 and 36-48 hours after a significant rainfall (0.5-1.0 inch) or artificial flooding to determine that the facility is draining properly. Results of the inspection shall be provided to DPWES prior to bond release.

6-1317.7 Plan Submission Requirements

6-1317.7A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures including underdrains.

6-1317.7B Cross section of the facility showing the following: elevations and dimensions of the structure, inlet, outlet, underdrain, filter media, and underlying gravel layer, and filter fabric.

6-1317.7C Sizing computations for the facility including volume of storage and surface area of facility required and provided.

6-1317.7D Hydrologic calculations for the facility.

6-1317.7E Design calculations and specifications for all hydraulic structures including inlet structures and underdrain piping.

6-1317.7F A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1317.7G Construction and materials specifications.

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding 6-1303 (Constructed Wetlands) to read as follows:

6-1318 Constructed Wetlands

6-1318.1 General.

6-1318.1A Constructed wetlands are shallow depressions that receive stormwater inputs for water quality treatment. Wetlands are typically less than 1 foot deep (although they have greater depths at the forebay and in micropools) and possess variable microtopography to promote dense and diverse wetland cover. Runoff from each new storm displaces runoff from previous storms, and the long residence time allows multiple pollutant removal processes to operate. Wetlands provide an ideal environment for gravitational settling, biological uptake, and microbial activity. Constructed wetlands are the final element in the roof-to-stream runoff reduction sequence. They should only be considered for use after all other upland runoff reduction opportunities have been exhausted and there is still a remaining water quality or channel protection volume to manage.

6-1318.1B Constructed Wetlands shall conform to Virginia Stormwater Design Specification No. 13 Constructed Wetlands (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1318.2 Feasibility and Limitations.

6-1318.2A Constructed wetlands are not permitted in residential developments unless there are no other reasonable options available for compliance with the water quality control (BMP) requirements. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed

facilities. When allowed in residential areas, constructed wetlands and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1318.2B Setbacks. Constructed wetlands shall meet the setback requirements of the Virginia Stormwater Design Specification No. 13 Constructed Wetlands (Latest version referenced in the VSMP Regulations).

6-1318.2C Trees within constructed wetlands may be used to meet the requirements of Chapter 122 of the County Code and § 12-0000 *et seq.* of the PFM.

6-1318.3 Maintenance.

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1318.3A Constructed wetlands and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Constructed wetlands may not be located in County storm drainage easements. The above does not preclude the use of constructed wetlands by the County within existing County drainage easements or on County-owned property.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1318.3A Constructed wetlands located in single-family and residential condominium developments shall be within County storm drainage easements, and shall be maintained by DPWES. Constructed wetlands and their appurtenant structures located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1318.3B Maintenance access must be provided for all constructed wetlands in accordance with § 6-1306. In addition, maintenance access stabilized to provide for passage of heavy equipment shall be provided for all sediment forebays.

6-1318.3C Constructed wetlands shall be posted with permanent signs designating the area as a water quality management area. Signs shall state that the facility is a water quality management area that includes permanent pools of water, there may be additional ponding of water after a storm, and the area is not to be disturbed except for required maintenance. Signs shall be posted at

approximately 150-foot intervals along the perimeter of the wetland with a minimum of one sign for each facility. See Plate 81-6.

6-1318.3D An onsite area designated for sediment dewatering and disposal should be provided if feasible.

6-1318.4 Design Criteria.

6-1318.4A Constructed wetlands shall be designed and constructed in accordance with County standards for dam embankments, outlet structures including spillways, maintenance access, geotechnical testing, and sinage. Constructed wetlands are treated as wet ponds for dam safety purposes and embankment design. Wherever any conflict exists between a County standard and the state specification, the County standard shall be used except for those design elements necessary to achieve the required pollutant removal.

6-1318.4B Sediment forebays shall be provided at all discharge points into the facility that account for more than 10% of the drainage area to the facility. Sediment forebays shall be excavated to the extent feasible. If sufficient volume cannot be created by excavation, a rock or gabion berm keyed into the sides of the pond no higher than 2 feet may be used.

6-1318.4C Treatment Volume. The required treatment volume shall be determined in accordance with Virginia Stormwater Design Specification No. 13 Constructed Wetlands (Latest version referenced in the VSMP Regulations).

6-1318.4D Water Balance. Water balance computations are required for all facilities to determine their feasibility and minimum pool depths. Computation of the water balance and minimum pool depth shall be determined in accordance with Virginia Stormwater Design Specification No. 13 Constructed Wetlands (Latest version referenced in the VSMP Regulations).

6-1318.4E The outfall of all outlet structures, emergency overflow weirs, and underdrains must be in conformance with the adequate drainage requirements of § 6-0200 et seq.

6-1318.4F In addition to any geotechnical testing required under § 6-1600 (Design and Construction of Dams and Impoundments), soils shall be tested in at least two locations within the planned wetland treatment areas to determine the depth to groundwater and bedrock and potential infiltration losses. If potential infiltration losses are too large, an impermeable liner may be necessary.

6-1318.5 Specifications

6-1318.5A See § 6-1600 *et seq*. for materials specifications for dam embankments, outlet structures, conduits, and spillways and § 6-1319.6 for plant materials.

6-1318.6 Wetland Planting Plans

6-1318.6A Planting plans are required for all constructed wetlands.

6-1318.6B Planting plans and specifications for constructed wetlands shall be prepared by a certified landscape architect, horticulturist, or other qualified individual who has knowledge of the environmental tolerance, ecological functions, and ecological impacts of plant species. Planting plans shall be prepared in accordance with the requirements of § 12-0500.

6-1318.6C Depending on the wetland type and application, a mixture of trees, shrubs, and perennial herbaceous plants with a high density of fibrous roots is required. Selected plants must be able to tolerate highly variable moisture conditions, generally dry with brief periods of inundation. Depending on site conditions, selected plants also must be able to tolerate exposure to wind and sun, as well as salt and toxins in runoff from roads, parking lots, and driveways. The use of native plant species is preferred. The acceptability of proposed plant materials will be determined by the Director.

6-1318.6D All plants shall conform to the latest version of American Standard for Nursery Stock published by the American Nursery and Landscape Association (ANSI Z60.1) for quality and sizing. Trees and shrubs shall be nursery grown unless otherwise approved and shall be healthy and vigorous, free from defects, decay, disfiguring roots, sun-scald, injuries, abrasions, diseases, insects, pests, and all forms of infestations or objectionable disfigurements as determined by the Director.

6-1318.6E Trees shall be a minimum of 1-inch caliper. Shrubs shall be a minimum of 2-gallon container size and herbaceous plants shall be a minimum of 6-inch diameter container size. Variations in size may be approved by the Director, based on the requirements of the specific plants listed in the schedule.

6-1318.6F All plantings must be well established prior to release of the conservation deposit. Nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released.

6-1318.7 Construction.

6-1318.7A The owner shall provide for inspection during construction of the facility by a licensed design professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers shall be submitted to the County prior to bond

release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1318.7B Constructed wetland~~s~~ sites shall be posted with signs during construction in accordance with § 6-1305.7F until the permanent signs required under 6-1318.3C have been installed.

6-1318.7C Constructed wetlands shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan.

6-1318.7D Construction shall meet all applicable requirements of § 6-1600 (Design and Construction of Dams and Impoundments).

6-1318.7E Fill for berms and overflow weirs not subject to the requirements of § 6-1600 *et seq*. shall consist of clean material free of organic matter, rubbish, frozen soil, snow, ice, particles with sizes larger than 3 inches, or other deleterious material. Fill shall be placed in 8- to12-inch lifts and compacted to at least 95 percent of Standard Proctor Maximum Density in accordance with ASTM D-698, AASHTO T-99, or VDOT specifications. Compaction equipment shall not be allowed within the facility on the soil bed. The top of the berm and the invert of the overflow weir shall be constructed level at the design elevation.

6-1318.7F Plant material shall be installed per § 12-0705.

6-1318.7G Planting shall take place after construction is completed and during the following periods: March 15 through June 15 and Sept. 15 through Nov. 15, unless otherwise approved by the Director.

6-1318.7H Additional guidelines for construction are provided in Virginia Stormwater Design Specification No. 13 Constructed Wetlands (Latest version referenced in the VSMP Regulations).

6-1318.8 Plan Submission Requirements

6-1318.8A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures.

6-1318.8B Cross section(s) of the facility showing the following: elevations and dimensions of berms, inlets, outlets, pipes, groundwater table, and bedrock.

6-1318.8C Plant schedule and planting plan specifying species, quantity of each species, stock size, type of root stock to be installed and amount of tree cover claimed for each tree species or spacing of shrubs and perennials within facility. Planting plan shall be in conformance with § 12-0515.

6-1318.8D Sizing computations for the facility including volume of storage and surface area of facility required and provided and a computation of the ratio of the shortest flow path to overall length of the facility.

6-1318.8E Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 13.

6-1318.8F Hydrologic calculations for the facility including computation of the water balance.

6-1318.8G Design calculations and specifications for all hydraulic structures including inlet structures, outlet structures, overflow weirs, and pipes.

6-1318.8H Soils analysis and testing results. Elevation of groundwater table and/or bedrock.

6-1318.8I A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1318.8J Construction and materials specifications.

6-1318.8K All plan submission requirements for dams and impoundments in § 6-1305.6 *et seq.* and § 6-1305.7 *et seq.*

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding 6-1319 (Wet pond) to read as follows:

6-1319 Wet Pond

6-1319.1 General.

6-1319.1A A wet pond consists of a permanent pool of standing water that promotes a better environment for gravitational settling, biological uptake and microbial activity. Runoff from each new storm enters the pond and partially displaces pool water from previous storms. The pool also acts as a barrier to re-suspension of sediments and other pollutants deposited during prior storms. When sized properly, wet ponds have a sufficiently long residence time to allow numerous pollutant removal mechanisms to operate. Wet ponds can also provide detention above the permanent pool to help meet water quantity control requirements. Designers should note that a wet pond is the final element in the roof-to-stream runoff reduction sequence. Therefore, wet ponds should be considered only if there is remaining treatment volume or channel protection

volume to manage after all other upland runoff reduction options have been considered and properly credited.

6-1319.1B Wet Ponds shall conform to Virginia Stormwater Design Specification No. 14 Wet Pond (Latest version referenced in the VSMP Regulations), except as modified herein.

6-1319.2 Feasibility and Limitations.

6-1319.2B Wet ponds are not permitted in residential developments unless they are regional ponds or there are no other reasonable options available for compliance with the water quality control (BMP) requirements. Such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities. When allowed in residential areas, wet ponds and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1319.2C Setbacks. Wet ponds shall meet the setback requirements of the Virginia Stormwater Design Specification No. 14 Wet Pond (Latest version referenced in the VSMP Regulations).

6-1319.2D Trees planted around the perimeter of wet ponds may be used to meet the requirements of Chapter 122 of the County Code and § 12-0000 *et seq.* of the PFM.

6-1319.3 Maintenance.

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1319.3A Except for regional ponds, wet ponds and their appurtenant structures must be privately maintained and a private maintenance agreement must be executed before the construction plan is approved. Nonregional wet ponds may not be located in County storm drainage easements. The above does not preclude the use of nonregional wet ponds by the County within existing County drainage easements or on County-owned property.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1319.3A Wet ponds located in single-family and residential condominium developments shall be within County storm drainage easements and shall be maintained by DPWES. Wet ponds and their appurtenant structures located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1319.3B Maintenance access must be provided for all wet ponds in accordance with § 6-1306. In addition, maintenance access stabilized to provide for passage of heavy equipment shall be provided for all sediment forebays.

6-1319.3C Wet ponds shall be posted with permanent signs designating the area as a water quality management area. Signs shall state that the facility is a water quality management area that includes permanent pools of water, there may be additional ponding of water after a storm, and the area is not to be disturbed except for required maintenance. Signs shall be posted at approximately 150-foot intervals along the perimeter of the wetland with a minimum of one sign for each facility. See Plate 81-6.

6-1319.3D An onsite area designated for sediment dewatering and disposal should be provided if feasible.

6-1319.4 Design Criteria.

6-1319.4A Wet ponds shall be designed and constructed in accordance with County standards for dam embankments, outlet structures including spillways, maintenance access, geotechnical testing, and sinage. Wherever any conflict exists between a County standard and the state specification, the County standard shall be used except for those design elements necessary to achieve the required pollutant removal.

6-1319.4B Sediment forebays shall be provided at all discharge points into the facility that account for more than 10% of the drainage area to the facility. Sediment forebays shall be excavated to the extent feasible. If sufficient volume cannot be created by excavation, a rock or gabion berm keyed into the sides of the pond no higher than 2 feet may be used.

6-1319.4C Treatment Volume. The required treatment volume shall be determined in accordance with Virginia Stormwater Design Specification No. 14 Wet Pond (Latest version referenced in the VSMP Regulations).

6-1319.4D The outfall of all outlet structures and spillways must be in conformance with the adequate drainage requirements of § 6-0200 et seq.

6-1319.5 Specifications.

6-1319.5A See § 6-1600 *et seq*. for materials specifications for dam embankments, outlet structures, conduits, and spillways and 6-1319.6 *et seq*. for plant materials.

6-1319.6 Planting Plans.

6-1319.6A Planting plans are required for all wet ponds.

6-1319.6B Planting plans and specifications for wet ponds shall be prepared by a certified landscape architect, horticulturist, or other qualified individual who has knowledge of the environmental tolerance, ecological functions, and ecological impacts of plant species. Planting plans shall be prepared in accordance with the requirements of § 12-0500.

6-1319.6C Depending on the type and application, a mixture of trees, shrubs, and perennial herbaceous plants with a high density of fibrous roots is required. Selected plants must be able to tolerate highly variable moisture conditions, generally dry with brief periods of inundation. Depending on site conditions, selected plants also must be able to tolerate exposure to wind and sun, as well as salt and toxins in runoff from roads, parking lots, and driveways. The use of native plant species is preferred. The acceptability of proposed plant materials will be determined by the Director.

6-1319.6D All plants shall conform to the latest version of American Standard for Nursery Stock published by the American Nursery and Landscape Association (ANSI Z60.1) for quality and sizing. Trees and shrubs shall be nursery grown unless otherwise approved and shall be healthy and vigorous, free from defects, decay, disfiguring roots, sun-scald, injuries, abrasions, diseases, insects, pests, and all forms of infestations or objectionable disfigurements as determined by the Director.

6-1319.6E Trees shall be a minimum of 1-inch caliper. Shrubs shall be a minimum of 2-gallon container size and herbaceous plants shall be a minimum of 6-inch diameter container size. Variations in size may be approved by the Director, based on the requirements of the specific plants listed in the schedule.

6-1319.6F All plantings must be well established prior to release of the conservation deposit. Nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released.

6-1319.7 Construction.

6-1319.7A The owner shall provide for inspection during construction of the facility by a licensed design professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1319.7B Wet pond sites shall be posted with signs during construction in accordance with § 6-1305.7F until the permanent signs required under 6-1319.3C have been installed.

6-1319.7C Wet ponds shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan. If the pond site will be used for erosion and sediment control during construction of the development, the construction notes shall clearly indicate that the facility will be dewatered, dredged, and graded to design dimensions after the drainage area to the facility is stabilized.

6-1319.7D Construction shall meet all applicable requirements of § 6-1600 (Design and Construction of Dams and Impoundments).

6-1319.7E Fill for berms and overflow weirs not subject to the requirements of § 6-1600 *et seq.* shall consist of clean material free of organic matter, rubbish, frozen soil, snow, ice, particles with sizes larger than 3 inches, or other deleterious material. Fill shall be placed in 8- to12-inch lifts and compacted to at least 95 percent of Standard Proctor Maximum Density in accordance with ASTM D-698, AASHTO T-99, or VDOT specifications. The top of the berm and the invert of the overflow weir shall be constructed level at the design elevation.

6-1319.7F Plant material shall be installed per § 12-0705.

6-1319.7G Planting shall take place after construction is completed and during the following periods: March 15 through June 15 and Sept. 15 through Nov. 15, unless otherwise approved by the Director.

6-1319.7H Additional guidelines for construction are provided in Virginia Stormwater Design Specification No. 14 Wet Pond (Latest version referenced in the VSMP Regulations)].

6-1319.8 Plan Submission Requirements.

6-1319.8A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures.

6-1319.8B Cross section(s) of the facility showing the following: elevations and dimensions of berms, inlets, outlets, pipes, groundwater table, and bedrock.

6-1319.8C Plant schedule and planting plan specifying species, quantity of each species, stock size, type of root stock to be installed and amount of tree cover claimed for each tree species or spacing of shrubs and perennials within facility. Planting plan shall be in conformance with § 12-0515.

6-1319.8D Sizing computations for the facility including volume of storage and surface area of facility required and provided and a computation of the ratio of the shortest flow path to overall length of the facility.

6-1319.8E Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 14.

6-1319.8F Hydrologic calculations for the facility.

6-1319.8G Design calculations and specifications for all hydraulic structures including inlet structures, outlet structures, overflow weirs, and pipes.

6-1319.8H Soils analysis and testing results. Elevation of groundwater table and/or bedrock.

6-1319.8I A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1319.8J Construction and materials specifications.

6-1319.8K All plan submission requirements for dams and impoundments in § 6-1305.6 *et seq.* and § 6-1305.7 *et seq.*

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding 6-1320 (Extended Detention Pond) to read as follows:

6-1320 Extended Detention Pond

6-1320.1 General.

6-1320.1A An extended detention pond relies on extended detention of stormwater runoff after each rain event. Extended detention ponds are designed for 24 hour (Level 1) or 36 hour (Level 2) detention of the treatment volume. An outlet structure restricts stormwater flow so it is temporarily stored within the basin. The temporary ponding enables particulate pollutants to settle out and reduces the maximum peak discharge to the downstream channel, thereby reducing the effective shear stress on the banks of the receiving stream. Extended detention design differs from conventional detention design in that it is designed to achieve a minimum drawdown time, rather than a maximum peak rate of outflow (which is commonly used to design for channel protection or flood control and often detains flows for just a few minutes or hours). However, detention used for channel protection, may result in extended drawdown times. Therefore, designers are encouraged to evaluate the detention drawdown as compared to the extended detention requirements in order to meet both criteria. Extended detention ponds rely on gravitational settling as their primary pollutant removal mechanism. Consequently, they generally provide fair-to-good removal for particulate pollutants, but low or negligible removal

for soluble pollutants, such as nitrate and soluble phosphorus. The use of extended detention alone generally results in the lowest overall pollutant removal rate of any single stormwater treatment option. Extended detention ponds include micropools at the outlet structure and sediment forebays with permanent pools to enhance performance and may incorporate additional deep pools or wetland cells.

6-1320.1B Extended Detention Ponds shall conform to Virginia Stormwater Design Specification No. 15 Extended Detention (ED) Pond [Latest version referenced in the VSMP Regulations], except as modified herein.

6-1320.2 Feasibility and Limitations.

6-1320.2A Extended detention ponds are not permitted in residential developments unless they are regional ponds or there are no other reasonable options available for compliance with the water quality control (BMP) requirements. When allowed in residential areas, extended detention ponds and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1320.2B Setbacks. Extended detention ponds shall meet the setback requirements of the Virginia Stormwater Design Specification No. 15 Extended Detention (ED) Pond [Latest version referenced in the VSMP Regulations].

6-1320.2C Trees planted around the perimeter of extended detention ponds may be used to meet the requirements of Chapter 122 of the County Code and § 12-0000 *et seq.* of the PFM.

6-1320.3 Maintenance.

6-1320.3A Extended detention ponds located in residentially zoned areas, including condominium developments, shall be within County storm drainage easements, and shall be maintained by DPWES. Extended detention ponds located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner, and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1320.3B Maintenance access must be provided for all extended detention ponds in accordance with § 6-1306. In addition, maintenance access stabilized to provide for passage of heavy equipment shall be provided for all sediment forebays.

6-1320.3C Extended detention ponds shall be posted with permanent signs designating the area as a water quality management area. Signs shall state that the facility is a water quality management

area that includes permanent pools of water, there may be additional ponding of water after a storm, and the area is not to be disturbed except for required maintenance. Signs shall be posted at approximately 150-foot intervals along the perimeter of the wetland with a minimum of one sign for each facility. See Plate 81-6.

6-1320.3D An onsite area designated for sediment dewatering and disposal should be provided if feasible.

6-1320.4 Design Criteria.

6-1320.4A Extended detention ponds shall be designed and constructed in accordance with County standards for dam embankments, outlet structures including spillways, maintenance access, geotechnical testing, and sinage. Extended detention ponds are treated as wet ponds for dam safety purposes and embankment design because of the permanent ponding in the sediment forebay and micropool. Wherever any conflict exists between a County standard and the state specification, the County standard shall be used except for those design elements necessary to achieve the required pollutant removal.

6-1320.4B Sediment forebays shall be provided at all discharge points into the facility that account for more than 10% of the drainage area to the facility. Sediment forebays shall be excavated to the extent feasible. If sufficient volume cannot be created by excavation, a rock or gabion berm keyed into the sides of the pond no higher than 2 feet may be used.

6-1320.4C Treatment Volume. The required treatment volume shall be determined in accordance with Virginia Stormwater Design Specification No. 15 Extended Detention Pond (ED) [Latest version referenced in the VSMP Regulations].

6-1320.4D The outfall of all outlet structures and spillways must be in conformance with the adequate drainage requirements of § 6-0200 et seq.

6-1320.4E All facilities shall incorporate the installation of a concrete apron in front of the riser structure, a galvanized or painted steel BMP plate or a reverse slope pipe, and a galvanized or painted steel debris cage in general accordance with the typical details in Plates 3.07-1, 2, 3 & 4. The use of downturned elbows and half-round pipes as described in the state specifications is not permitted. Because the sediment forebay and the bottom of the pond are not intended to remain dry between storm events, a trickle ditch is not required.

6-1320.4F In addition to any geotechnical testing required under § 6-1600 (Design and Construction of Dams and Impoundments), soils shall be tested in at least two locations within the planned pond area to determine the depth to groundwater and bedrock and potential infiltration losses. If potential infiltration losses are too large, extended detention ponds with shallow marshes may not be feasible.

6-1320.5 Specifications.

6-1320.5A See § 6-1600 *et seq*. for materials specifications for dam embankments, outlet structures, conduits, and spillways and 6-1320.6 for plant materials.

6-1320.6 Planting Plans

6-1320.6A Planting plans are required for all extended detention ponds.

6-1320.6B Planting plans and specifications for extended detention ponds shall be prepared by a certified landscape architect, horticulturist, or other qualified individual who has knowledge of the environmental tolerance, ecological functions, and ecological impacts of plant species. Planting plans shall be prepared in accordance with the requirements of § 12-0500.

6-1320.6C Depending on the type and application, a mixture of trees, shrubs, and perennial herbaceous plants with a high density of fibrous roots is required. Selected plants must be able to tolerate highly variable moisture conditions, generally dry with brief periods of inundation. Depending on site conditions, selected plants also must be able to tolerate exposure to wind and sun, as well as salt and toxins in runoff from roads, parking lots, and driveways. The use of native plant species is preferred. The acceptability of proposed plant materials will be determined by the Director.

6-1320.6D All plants shall conform to the latest version of American Standard for Nursery Stock published by the American Nursery and Landscape Association (ANSI Z60.1) for quality and sizing. Trees and shrubs shall be nursery grown unless otherwise approved and shall be healthy and vigorous, free from defects, decay, disfiguring roots, sun-scald, injuries, abrasions, diseases, insects, pests, and all forms of infestations or objectionable disfigurements as determined by the Director.

6-1320.6E Trees shall be a minimum of 1-inch caliper. Shrubs shall be a minimum of 2-gallon container size and herbaceous plants shall be a minimum of 6-inch diameter container size. Variations in size may be approved by the Director, based on the requirements of the specific plants listed in the schedule.

6-1320.6F All plantings must be well established prior to release of the conservation deposit. Nursery stock trees and shrubs required by the approved plan shall be viable (healthy and capable of developing a trunk and branch structure typical for their species) at the time the conservation deposit is released.

6-1320.7 Construction Specifications.

6-1320.7A The owner shall provide for inspection during construction of the facility by a licensed design professional. (In accordance with standard practice, the actual inspections may

be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1320.7B Extended detention pond sites shall be posted with signs during construction in accordance with § 6-1305.7F until the permanent signs required under 6-1320.3C have been installed.

6-1320.7C Extended detention ponds shall be constructed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan. If the pond site will be used for erosion and sediment control during construction of the development, the construction notes shall clearly indicate that the facility will be dewatered, dredged, and graded to design dimensions after the drainage area to the facility is stabilized.

6-1320.7D Construction shall meet all applicable requirements of § 6-1600 (Design and Construction of Dams and Impoundments).

6-1320.7E Fill for berms and overflow weirs not subject to the requirements of § 6-1600 (Design and Construction of Dams and Impoundments) shall consist of clean material free of organic matter, rubbish, frozen soil, snow, ice, particles with sizes larger than 3 inches, or other deleterious material. Fill shall be placed in 8- to12-inch lifts and compacted to at least 95 percent of Standard Proctor Maximum Density in accordance with ASTM D-698, AASHTO T-99, or VDOT specifications. The top of the berm and the invert of the overflow weir shall be constructed level at the design elevation.

6-1320.7F Plant material shall be installed per § 12-0705.

6-1320.7G Planting shall take place after construction is completed and during the following periods: March 15 through June 15 and Sept. 15 through Nov. 15, unless otherwise approved by the Director.

6-1320.7H Additional guidelines for construction are provided in Virginia Stormwater Design Specification No. 15 Extended Detention (ED) Pond [Latest version referenced in the VSMP Regulations].

6-1320.8 Plan Submission Requirements

6-1320.8A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures.

6-1320.8B Cross section(s) of the facility showing the following: elevations and dimensions of berms, inlets, outlets, pipes, groundwater table, and bedrock.

6-1320.8C Plant schedule and planting plan specifying species, quantity of each species, stock size, type of root stock to be installed and amount of tree cover claimed for each tree species or spacing of shrubs and perennials within facility. Planting plan shall be in conformance with § 12-0515.

6-1320.8D Sizing computations for the facility including volume of storage and surface area of facility required and provided and a computation of the ratio of the shortest flow path to overall length of the facility.

6-1320.8E Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in Virginia Stormwater Design Specification No. 15.

6-1320.8F Hydrologic calculations for the facility.

6-1320.8G Design calculations and specifications for all hydraulic structures including inlet structures, outlet structures, overflow weirs, and pipes.

6-1320.8H Soils analysis and testing results. Elevation of groundwater table and/or bedrock.

6-1320.8I A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1320.8J Construction and materials specifications.

6-1320.8K All plan submission requirements for dams and impoundments in § 6-1305.6 *et seq.* and § 6-1305.7 *et seq.*

Amend §6-1300 (Retention, Detention, and Low Impact Development Facilities), by adding 6-1321 (Manufactured BMPs) to read as follows:

6-1321 Manufactured BMPs

6-1321.1 General.

6-1321.1A Manufactured BMPs generally are proprietary stormwater treatment devices that utilize settling, filtration, absorptive or adsorptive materials, vortex separation, vegetative

components, or other technology to reduce pollutants in stormwater runoff. Manufactued BMPs typically do not provide runoff reduction or water quantity control.

6-1321.1B Manufactured BMPs may be used to achieve water quality compliance provided they have been approved for use by the Virginia Department of Conservation and Recreation and have been approved by the Director in accordance with § 6-0400 *et seq*.

6-1321.1C Pollutant removal efficiencies for manufactured BMPs shall be as assigned by the Virginia Stormwater BMP Clearinghouse.

6-1321.2 Feasibility and Limitations.

6-1321.2A Individual manufactured BMPs will have different site constraints and limitations. Manufacturer's specifications, approvals by the Virginia Department of Conservation, and approvals by the Director should be consulted to ensure that manufactured BMPs are feasible for use on a specific site.

6-1321.2B Manufactured BMPs primarily are recommended to treat impervious areas.

6-1321.2C Manufactured BMPs may not be located in County storm drainage easements. The above does not preclude the use of manufactured BMPs by the County within existing County drainage easements or on County-owned property.

6-1321.2D In residential areas, manufactured BMPs and their appurtenant structures must be located on homeowner association (or "common") property and may not be located on individual buildable single-family attached or detached residential lots or any part thereof for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1321.2E Manufactured BMPs may be located in the VDOT right-of-way with specific approval from VDOT.

6-1321.2F Manufactured BMPs may not be located in the vicinity of loading docks, vehicle maintenance areas, or outdoor storage areas, where there is the potential for high concentrations of hydrocarbons, toxics, or heavy metals in stormwater runoff unless effective pre-treatment is provided to reduce the concentrations or the device is designed specifically to address these types of pollutants.

6-1321.2G Manufactured BMPs may not be utilized in-line with the main conveyance system where the main conveyance system is maintained by the County or carries through drainage from adjoining properties.

6-1321.3 Maintenance.

Alternative 1 (New BMPs in residential areas privately maintained.)

6-1321.3A Manufactured BMPs must be privately maintained and a Private Maintenance Agreement must be executed before the construction plan is approved.

Alternative 2 (New BMPs in residential areas publicly maintained.)

6-1321.3A Manufactured BMPs located in single-family and residential condominium developments shall be within County storm drainage easements and shall be maintained by DPWES. Manufactured BMPs and their appurtenant structures located in industrial, commercial, institutional, apartment developments and rental townhouses must be maintained by the property owner and a Private Maintenance Agreement must be executed before the construction plan is approved.

6-1321.3B Maintenance access must be provided for all manufactured BMPs in accordance with § 6-1306. Maintenance access routes must be depicted on plans for all facilities not located in parking lots or along streets.

6-1321.3C Manufactured BMPs with below ground chambers shall be stenciled (or a plaque provided) on the inside of the box in a location clearly visible upon removal of the access manhole or door designating the manufactured BMP as a water quality management facility. The stenciling or plaque shall state that the facility is a water quality management facility, water may pond after a storm, and the facility is not to be disturbed except for required maintenance.

6-1321.4 Design Criteria.

6-1321.4A Manufactured BMPs shall be designed in accordance with the manufacturer's specifications as contained in the most recent design guidelines except as noted herein or as determined by the Director with his approval of the device.

6-1321.4B Manufactured BMPs shall be designed in accordance with all requirements developed by the Virginia Department of Conservation and Recreation and the County. Changes to manufacturer's specifications or variants of the original product design approved by the Director that may impact the device's hydraulic performance or phosphorus removal capability must be evaluated and approved by the Director prior to use.

6-1321.4C Manufactured BMPs shall be designed to treat an instantaneous flow rate of 0.7 cfs per acre without bypass or the minimum treatment volume required by Chapter 124 of the County Code.

6-1321.4D Individual manufactured BMPs may require pretreatment, or may be appropriate for use as pretreatment devices. Manufacturer's specifications should be consulted to determine the device-specific pretreatment requirements. Where the facility may be subject to significant exposure to leaf litter, grass clippings, trash and other debris, some form of pretreatment should be provided

6-1321.4E For on-line facilities, the inlet must be designed to pass the peak flow rate for the 10-year storm. For off-line facilities, a flow splitter shall be used to capture the design storm (typically the treatment volume) and pass larger flows around the facility.

6-1321.4F The outfall of all outlet structures, bypass structures, and underdrains must be in conformance with the adequate drainage requirements of § 6-0200 et seq.

6-1321.4G Manufactured BMPs with below ground chambers shall be designed to resist flotation.

6-1321.5 Specifications.

6-1321.5A Materials shall be in accordance with the manufacturer's most recent specifications except as may be modified by the Director in approving use of the device under § 6-0400 *et seq*.

6-1321.5B Materials certifications from the manufacturer for filter media shall be submitted to the County prior to bond release. Materials certifications must be based on batch test results performed by the manufacturer as part of a quality control/quality assurance program.

6-1321.6 Construction.

6-1321.6A The owner shall provide for inspection during installation of the facility by a licensed professional. (In accordance with standard practice, the actual inspections may be performed by an individual under responsible charge of the licensed professional.) The licensed professional shall certify that the facility was constructed in accordance with the approved plans. The licensed professional's certification along with any material delivery tickets and certifications from the material suppliers and results of the inspections performed shall be submitted to the County prior to bond release. For projects requiring as-built plans, the required certification and supporting documents shall be submitted with or incorporated in the as-built plans. For projects that do not require as-built plans, the required certification and supporting documents shall be submitted with the RUP or non-RUP request.

6-1321.6B Manufactured BMPs shall be installed after the drainage area to the facility is completely stabilized. Erosion and sediment controls for construction of the facility shall be installed as specified in the erosion and sediment control plan. Chambers may be installed with the other elements of the storm drainage collection system provided that they are flushed of any accumulated sediments prior to installation of the internal components.

6-1321.7 Plan Submission Requirements

6-1321.7A Plan view(s) of the facility and appurtenant structures with topography at a contour interval of no more than one foot and spot elevations throughout the facility showing all hydraulic structures including underdrains.

6-1321.7B Cross section of the facility showing the following: elevations and dimensions of the structure, inlet, outlet, underdrain, and internal components.

6-1321.7C Sizing computations for the facility including volume of storage and surface area of facility required and provided.

6-1321.7D Hydrologic calculations for the facility.

6-1321.7E Design calculations and specifications for all hydraulic structures including inlet structures and underdrain piping.

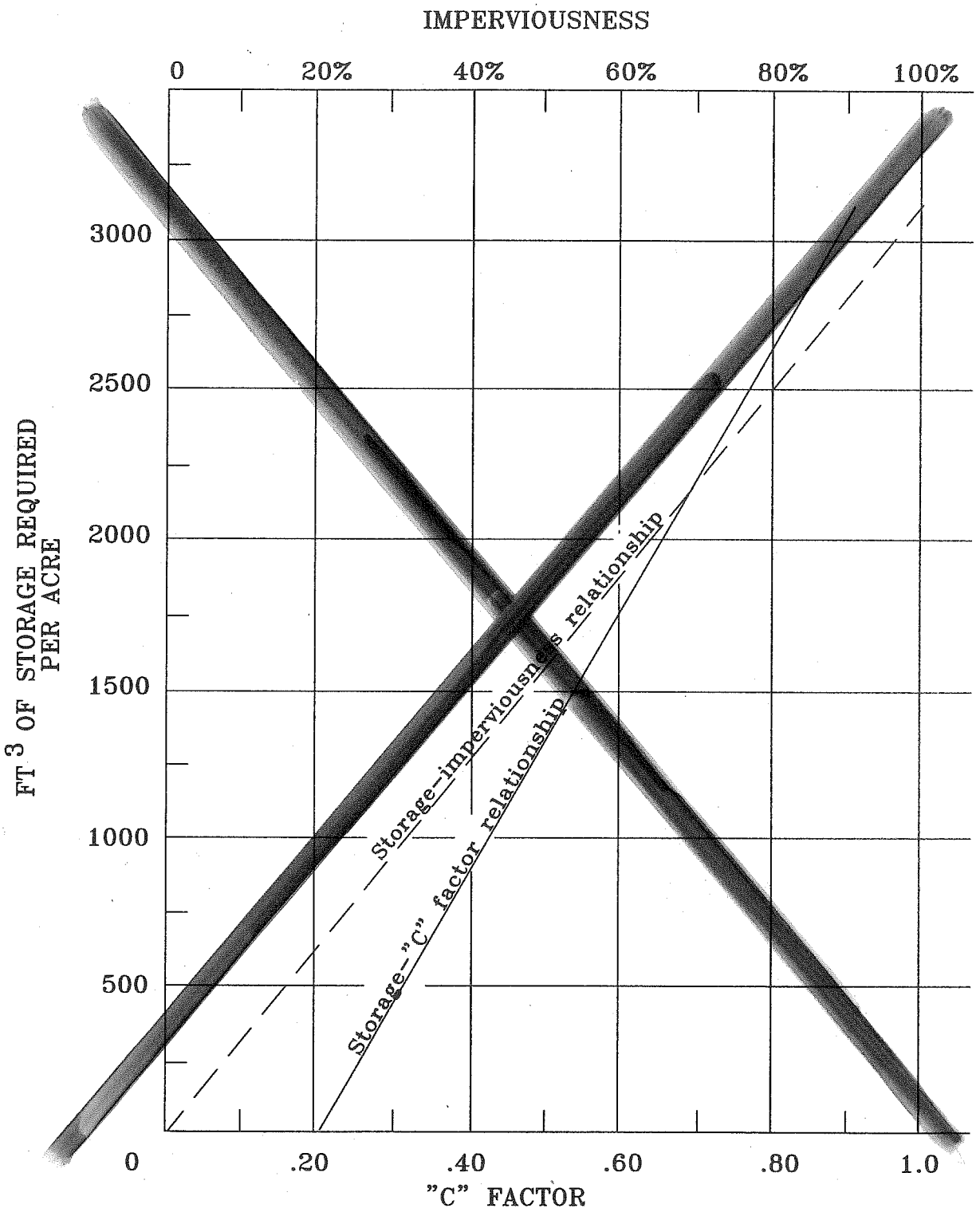
6-1321.7F A discussion of the outfalls from the facility is to be included in the outfall narrative.

6-1321.7G Construction and materials specifications.

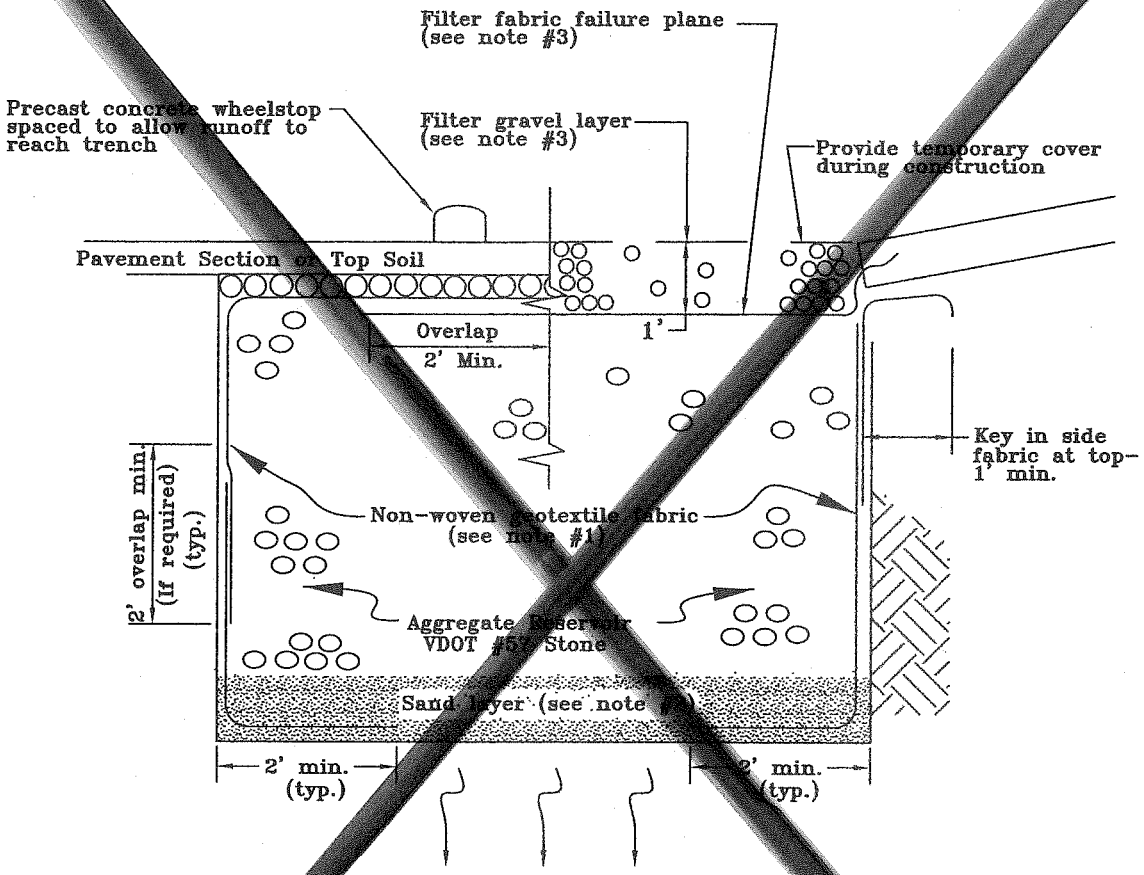
Amend Chapter 6 (Storm Drainage) by deleting the following plates:

Plate No.	Description	Section
2-6	Water Quality Storage Requirements Related to Percent Imperviousness and Rational Formula “C” Factor	§6-0402
41A-6	Percolation Trench	§6-1303
42-6	Unit Flow Hydrograph - 2-Year 2-Hour Storm	§6-1305
43-6	Discharge - 15” Culvert	§6-1305
44-6	Inflow Hydrograph – 10-Year – 2-Hour Storm - 5-Minute Time of Concentration	§6-1305
76-6	Permissible Shear Stress Cohesive Soils	§6-0203.5
77-6	Permissible Shear Stress Non-cohesive Soils	§6-0203.5

78-6	Porous Asphalt Pavement with Extended Aggregate Base	§6-1304
79-6	Permeable Open Joint Pavement Block	§6-1304
80-6	Example Inlet Schematic for Pervious Pavement	§6-1304
82-6	Bioretention Filter or Basin with Stone Storage	§6-1307
83-6	Bioretention Filter	§6-1307
84-6	Bioretention Basin	§6-1307
85-6	Bioretention Filter or Basin (Outfall Daylighted)	§6-1307
86-6	Bioretention Filter & Basin	§6-1307
87-6	Vegetated Swale with Check Dams	§6-1308
88-6	Vegetated Swale without Check Dams	§6-1308
89-6	Vegetated Swale Plan and Profile	§6-1308
90-6	Tree Box Filter	§6-1309
91-6	Vegetated Roof – Extensive	§6-1310
92-6	Vegetated Roof – Intensive	§6-1310



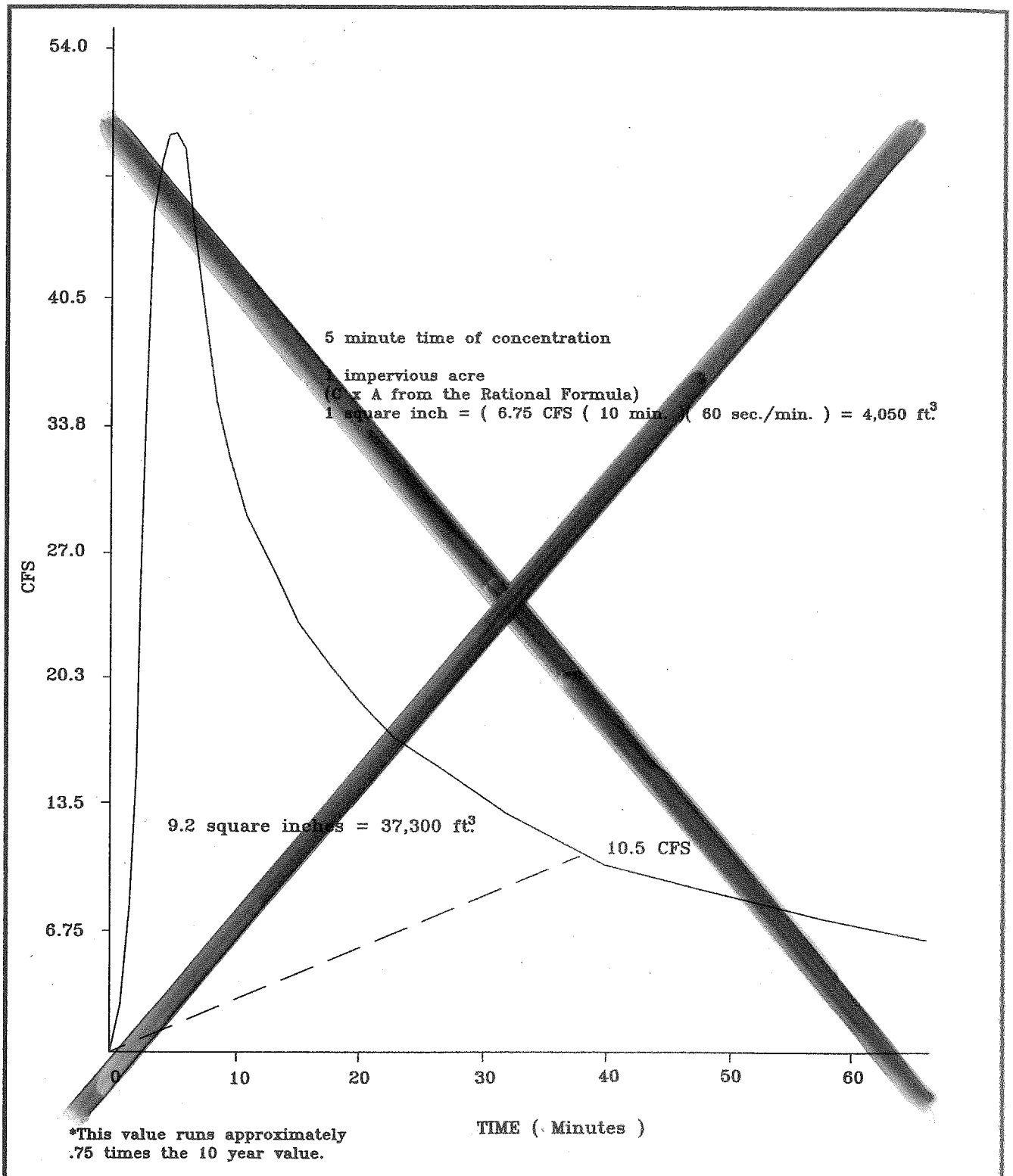
Ref. Sec. 6-0402 Rev. 1-00, 2011 Reprint	WATER QUALITY STORAGE REQUIREMENTS RELATED TO PERCENT IMPERVIOUSNESS AND RATIONAL FORMULA "C" FACTOR	PLATE NO.	STD. NO.
		2-6	



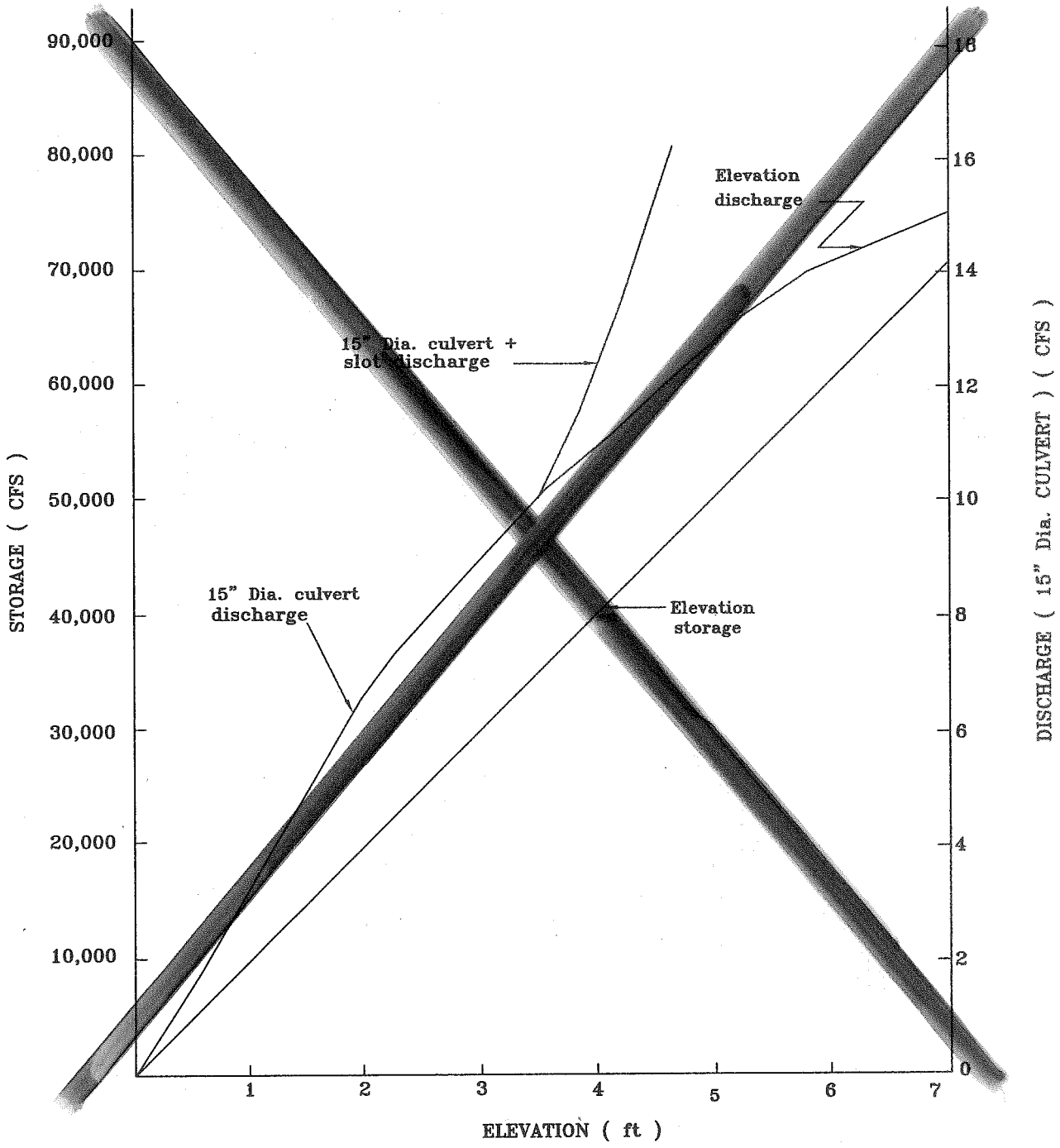
NOTES:

1. Use non-woven geotextile fabric with AOS of 70-100 US Sieve or 0.2 mm - 0.15 mm as determined by ASTM D4751 and a trapezoidal tear strength of 45 LB. or 0.2 kN as determined by ASTM D4533.
2. An 8-in. deep bottom sand layer (VDOT Fine Aggregate, Grading A or B) is required.
3. For an aggregate surface trench, filter fabric shall surround all of the aggregate fill material except the top one foot. A separate piece of fabric shall be used for the top layer to act as a failure plane. This top piece can then be removed and replaced upon clogging.
4. Geotextile fabric shall not be exposed to direct sunlight for more than 24 hours prior to installation.

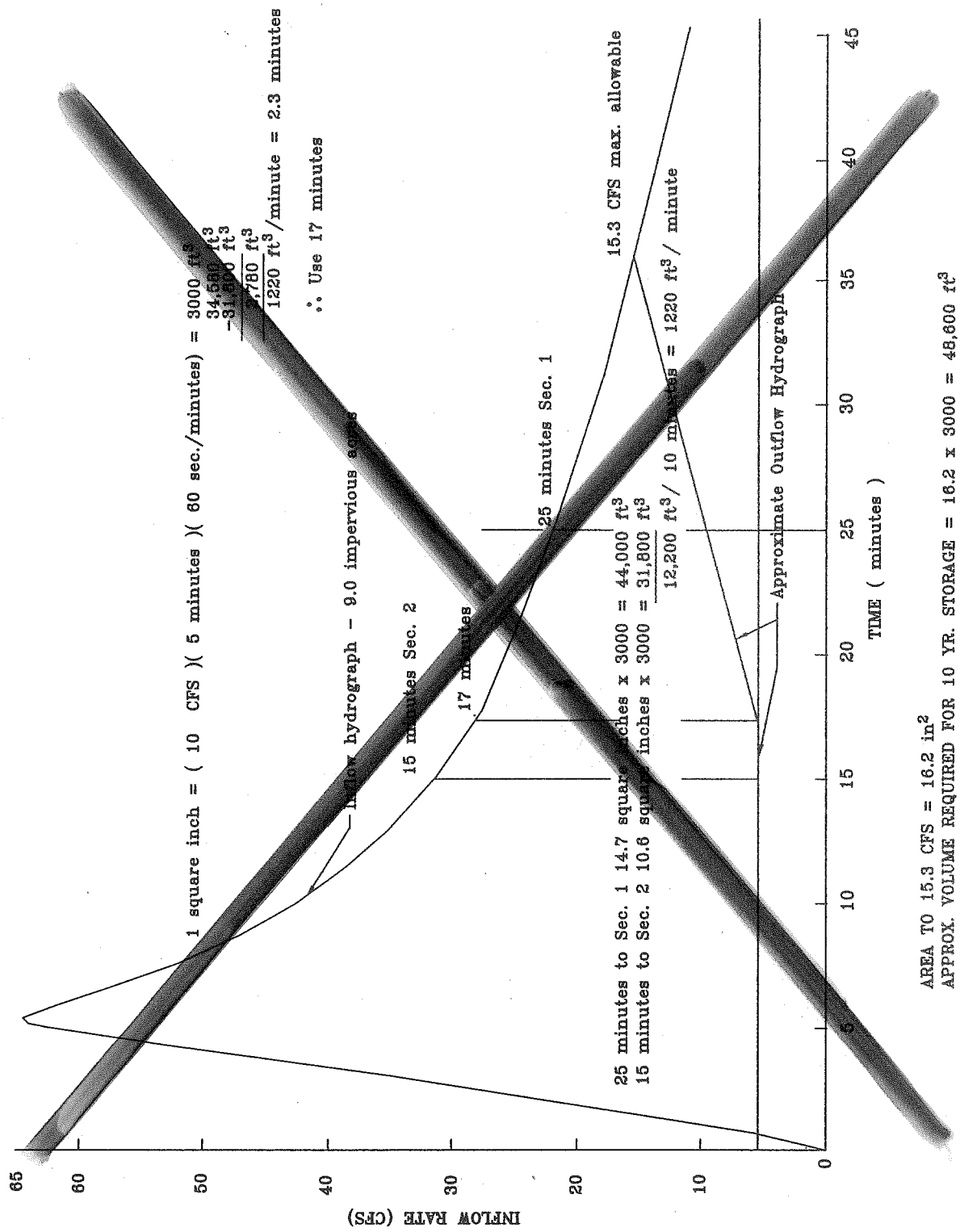
Ref. Sec. 6-1303.7B, 6-1303	PERCOLATION TRENCH	PLATE NO.	STD. NO.
Rev. 1-00, 6-04, 10-06, 2011 Reprint		41A-6	



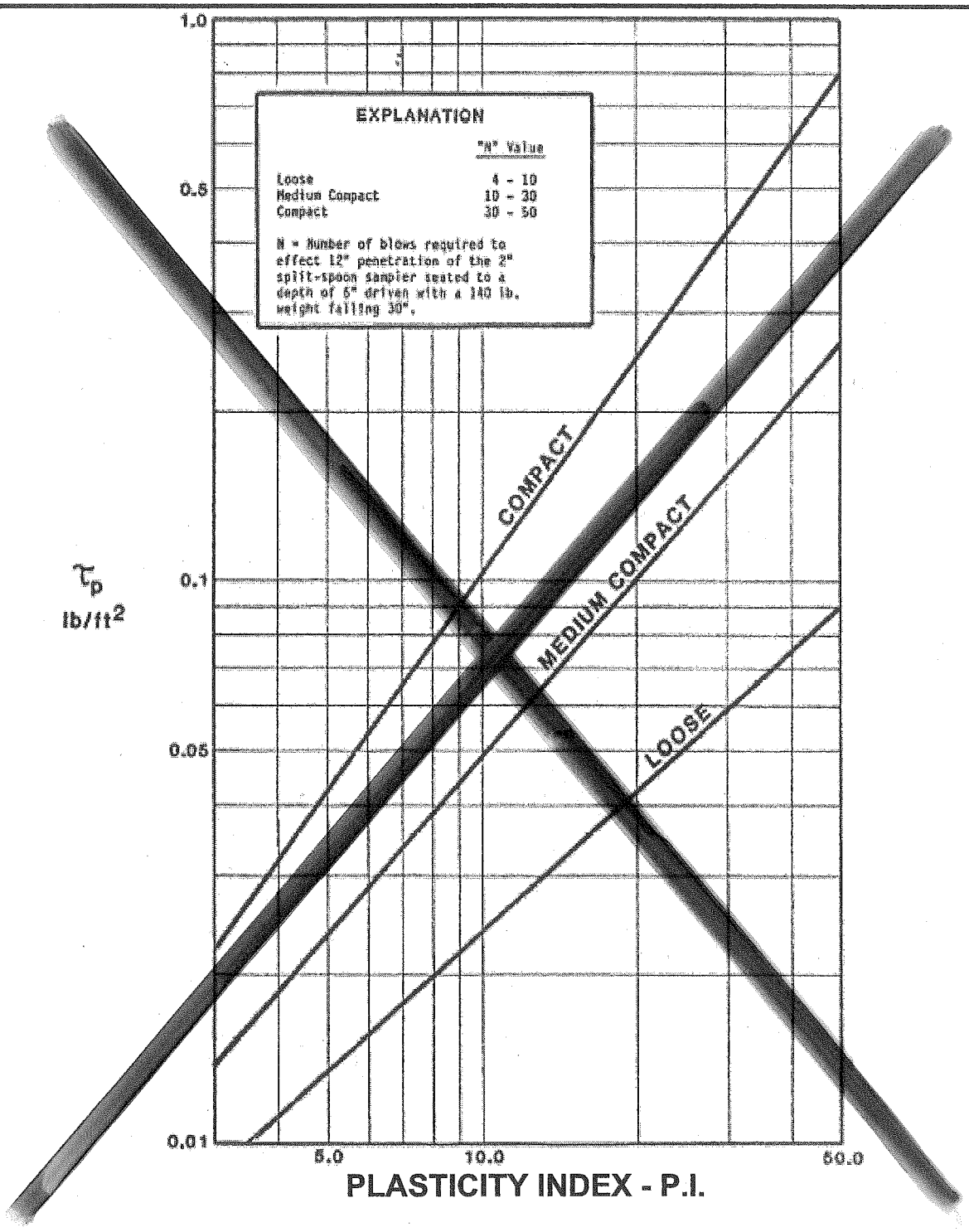
Ref Sec 6-1305.8B(1), 6-1305.9A Rev. 1-00	UNIT FLOW HYDROGRAPH 2 YEAR* - 2 HOUR STORM	PLATE NO.	STD. NO.
		42-6	



Ref. Sec. 6-1305.8B(5), 6-1305.8B(6), 6-1305.9C, 6-1305.10E	DISCHARGE - 15" CULVERT	PLATE NO.	STD. NO.
Rev. 1-00, 2011 Reprint		43-6	



Ref. Sec. 6-1305.10B Rev. 1-00	INFLOW HYDROGRAPH 10 YEAR- 2 HOUR STORM 5 MINUTE TIME OF CONCENTRATION	PLATE NO.	STD. NO.
		44-6	



SOURCE: Federal Highway Administration (IP-87-7) 1988
Design of Roadside Channels with Flexible Linings

Ref. Sec. 6-0203.4A(2)	PERMISSIBLE SHEAR STRESS	PLATE NO.	STD. NO.
Rev. 1-00, 2-06, 2011 Reprint	COHESIVE SOILS	76-6	

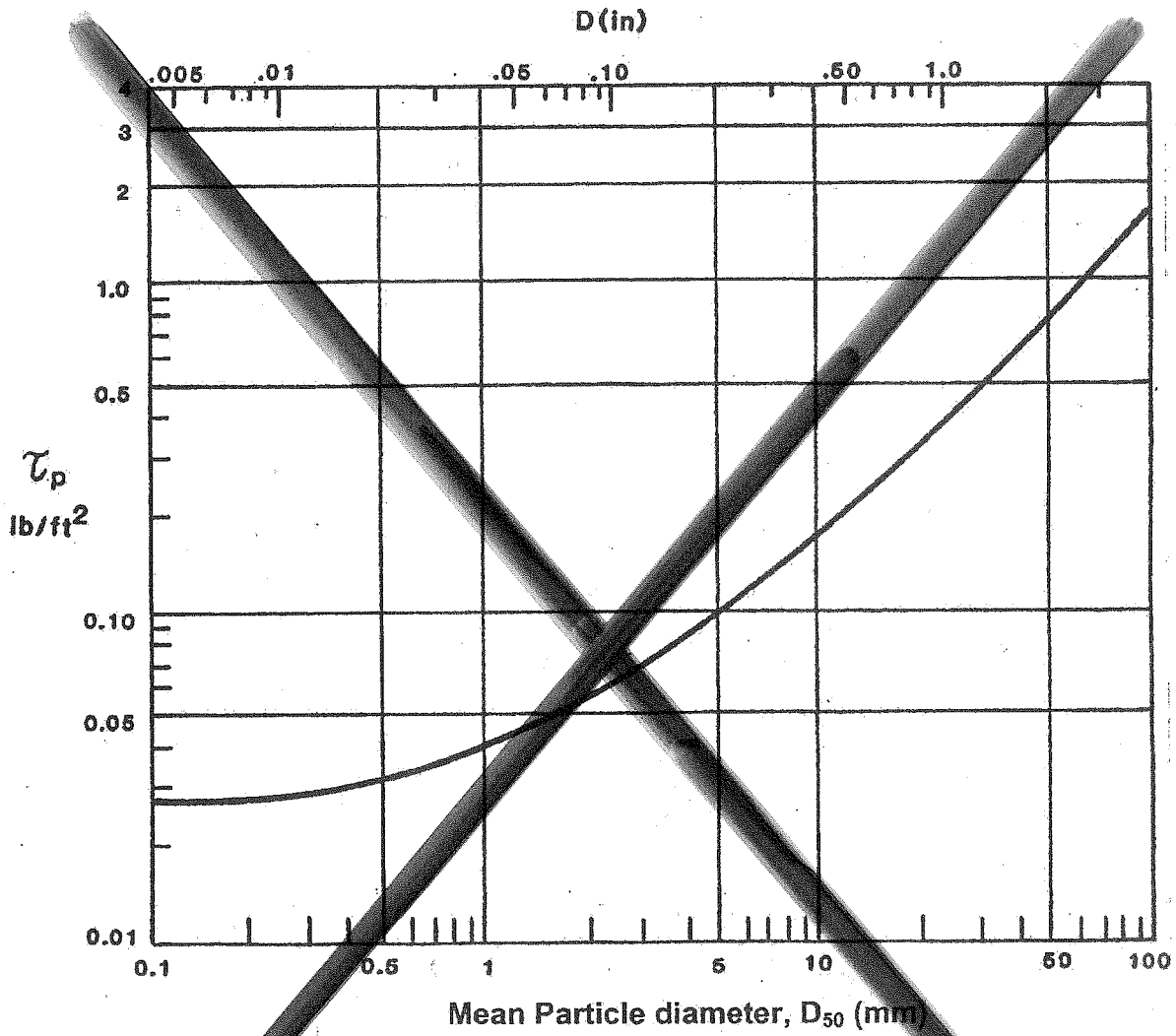
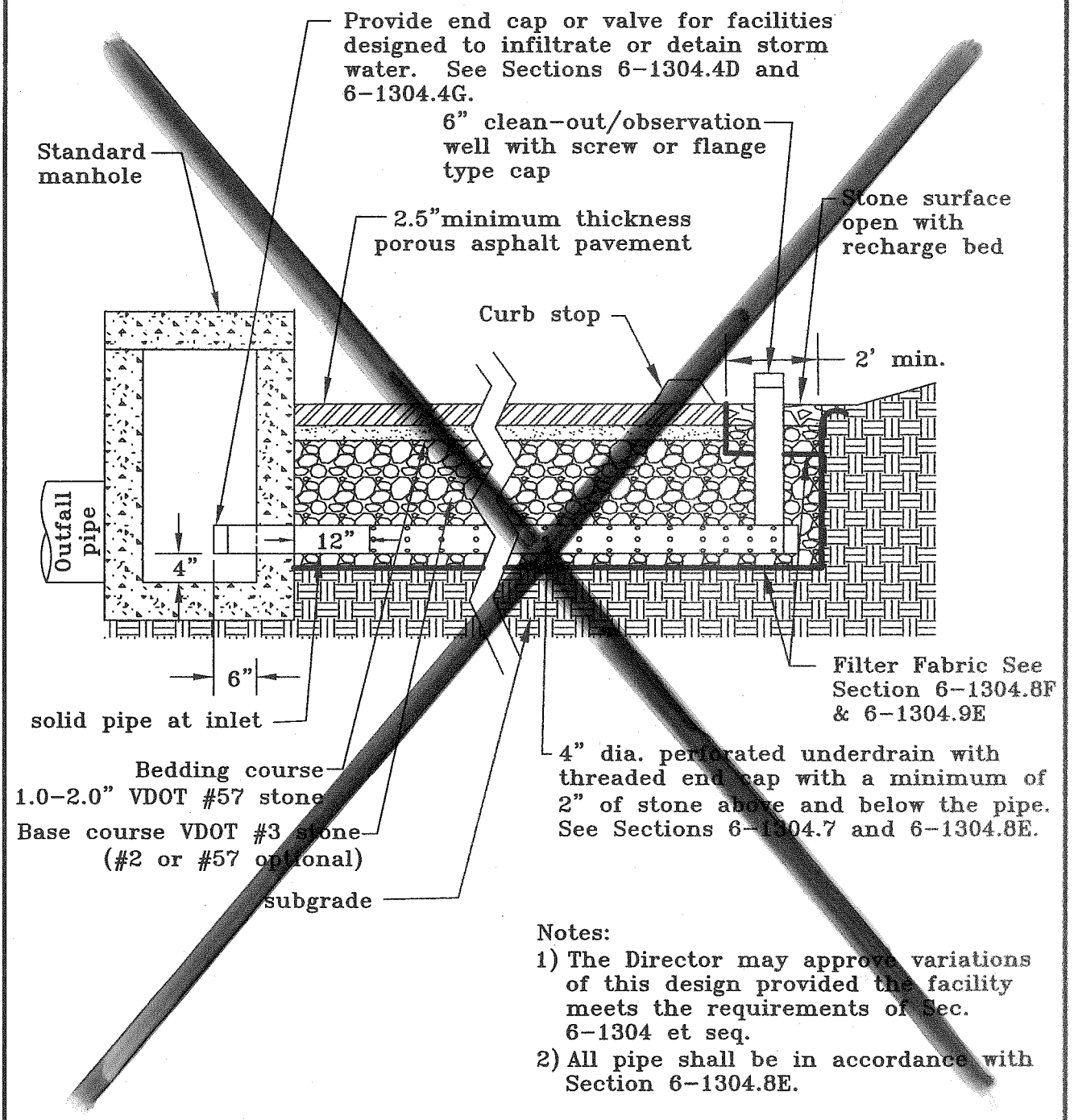


Chart 1. Permissible shear stress for non-cohesive soils.

SOURCE: Federal Highway Administration (IP-87-7) 1988 Design of Roadside Channels with Flexible Linings

Ref. Sec. 6-0203.5A(2)	PERMISSIBLE SHEAR STRESS NON-COHESIVE SOILS	PLATE NO.	STD. NO.
Rev. 2-06		77-6	



Notes:

1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1304 et seq.
2) All pipe shall be in accordance with Section 6-1304.8E.

CROSS SECTION (NTS)

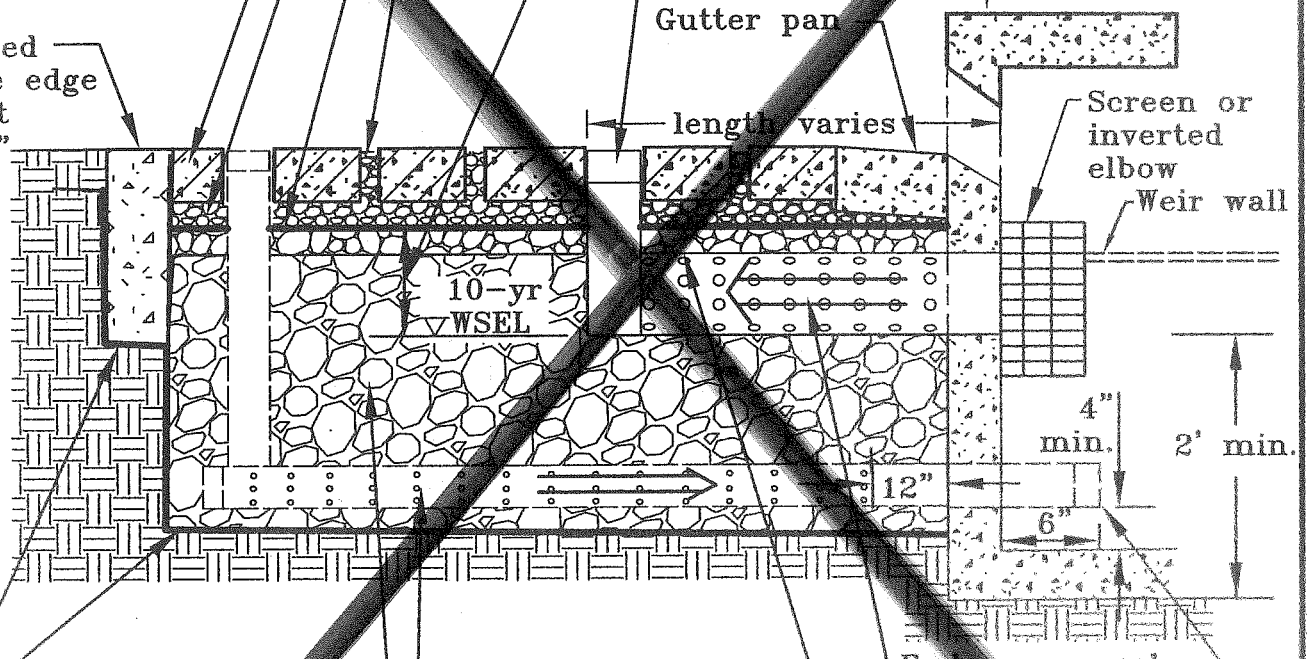
Ref. Sec. 6-1304 et seq. Rev. 3-07	POROUS ASPHALT PAVEMENT EXTENDED AGGREGATE BASE	PLATE NO. 78-6	STD. NO.

Notes:

1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1304 et seq.

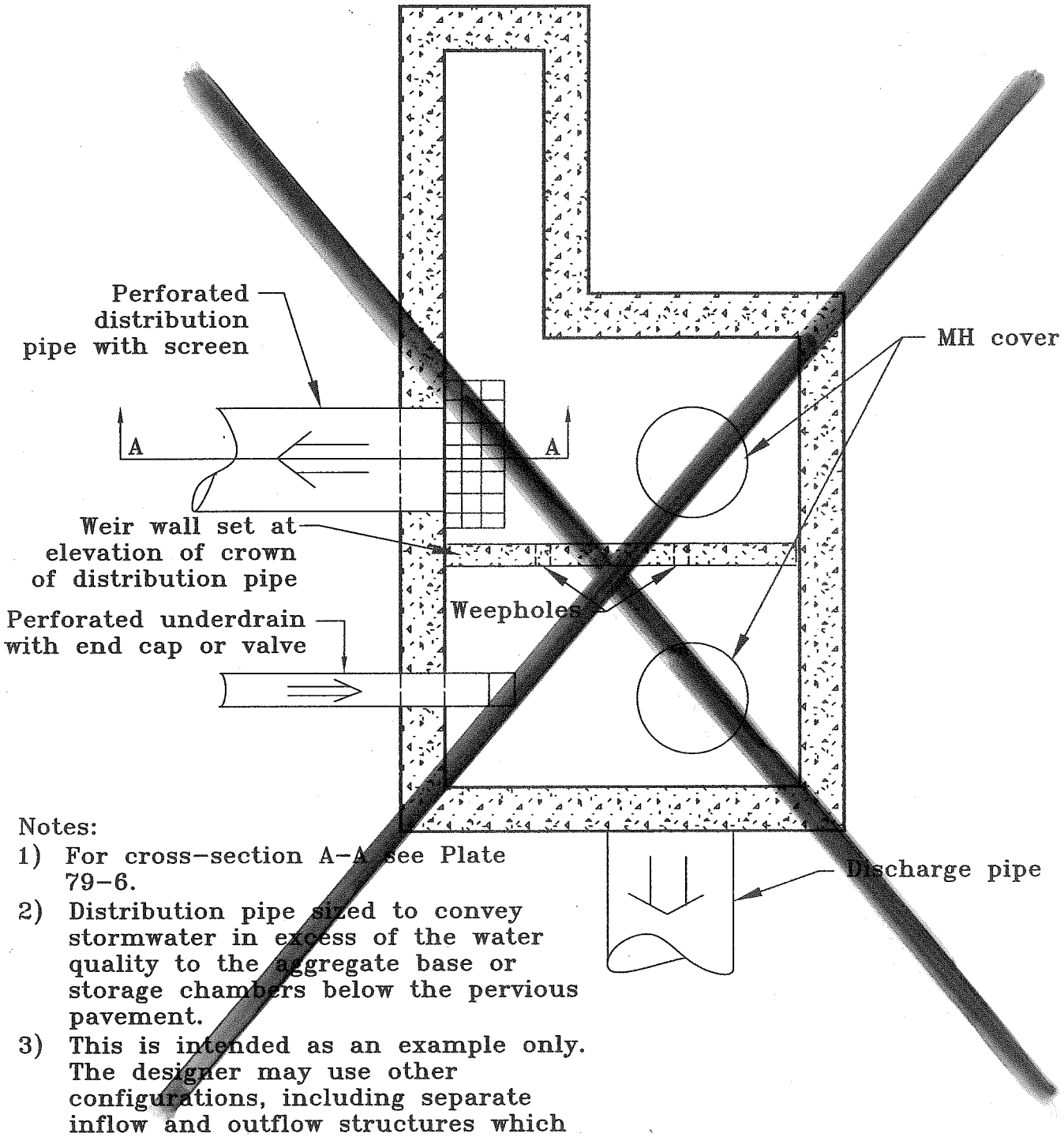
2) All pipe shall be in accordance with 6-1304.8E.

3) Provide end cap or valve for facilities designed to infiltrate or detain storm water. See Sections 6-1304.4D and 6-1304.4G.



CROSS SECTION (NTS)

Ref. Sec. 6-1304 et seq., Plate 80-6 Rev. 3-07	PERMEABLE OPEN JOINT PAVEMENT BLOCK	PLATE NO.	STD. NO.
		79-6	

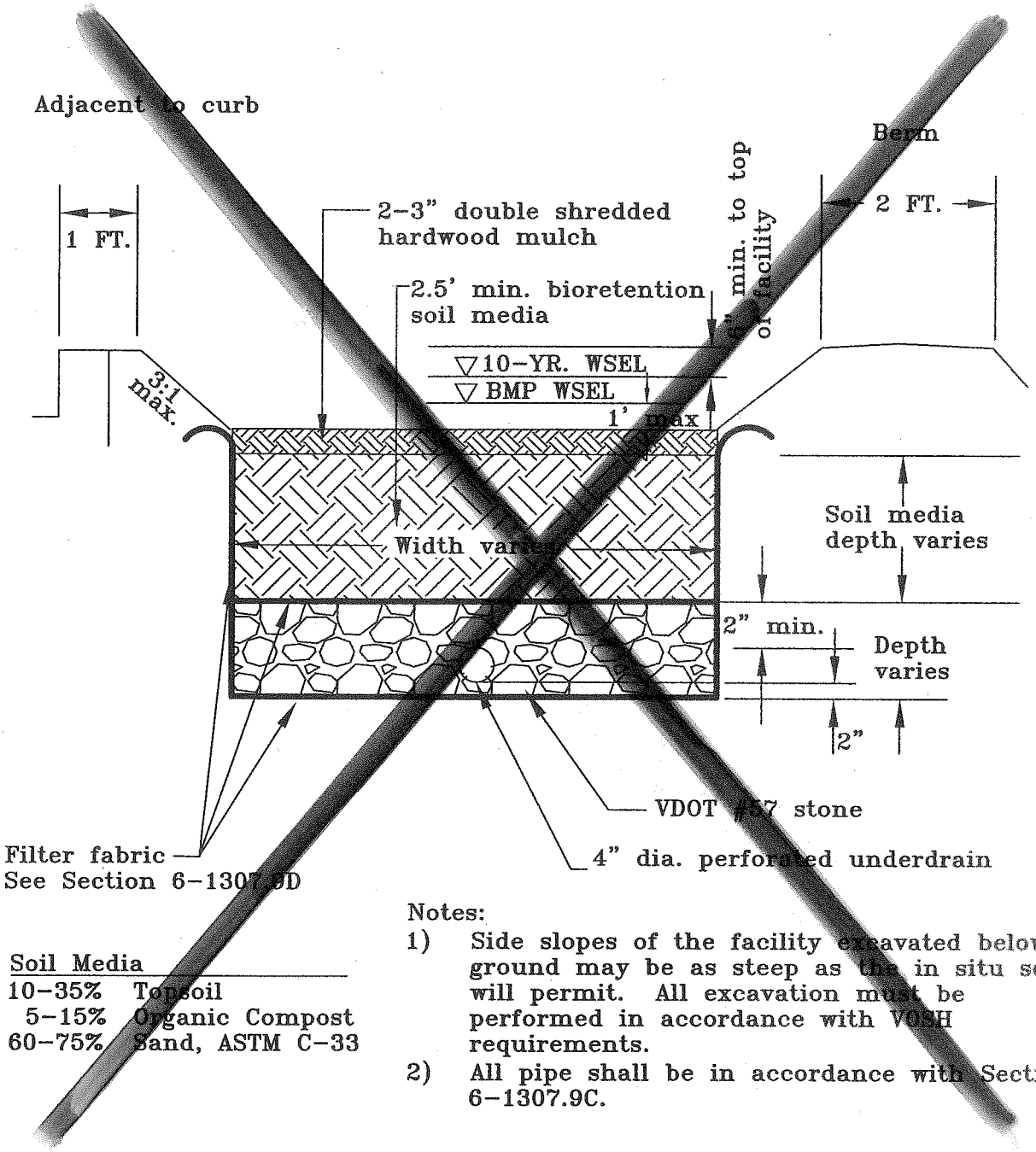


Notes:

1) For cross-section A-A see Plate 79-6.
2) Distribution pipe sized to convey stormwater in excess of the water quality to the aggregate base or storage chambers below the pervious pavement.
3) This is intended as an example only. The designer may use other configurations, including separate inflow and outflow structures which may include manufactured water quality inlets.

PLAN VIEW (NTS)

Ref. Sec. 6-1304 et. seq., Plate 79-6 Rev. 3-07, 2011 Reprint	EXAMPLE INLET SCHEMATIC FOR PERVIOUS PAVEMENT	PLATE NO.	STD. NO.
		80-6	



Soil Media

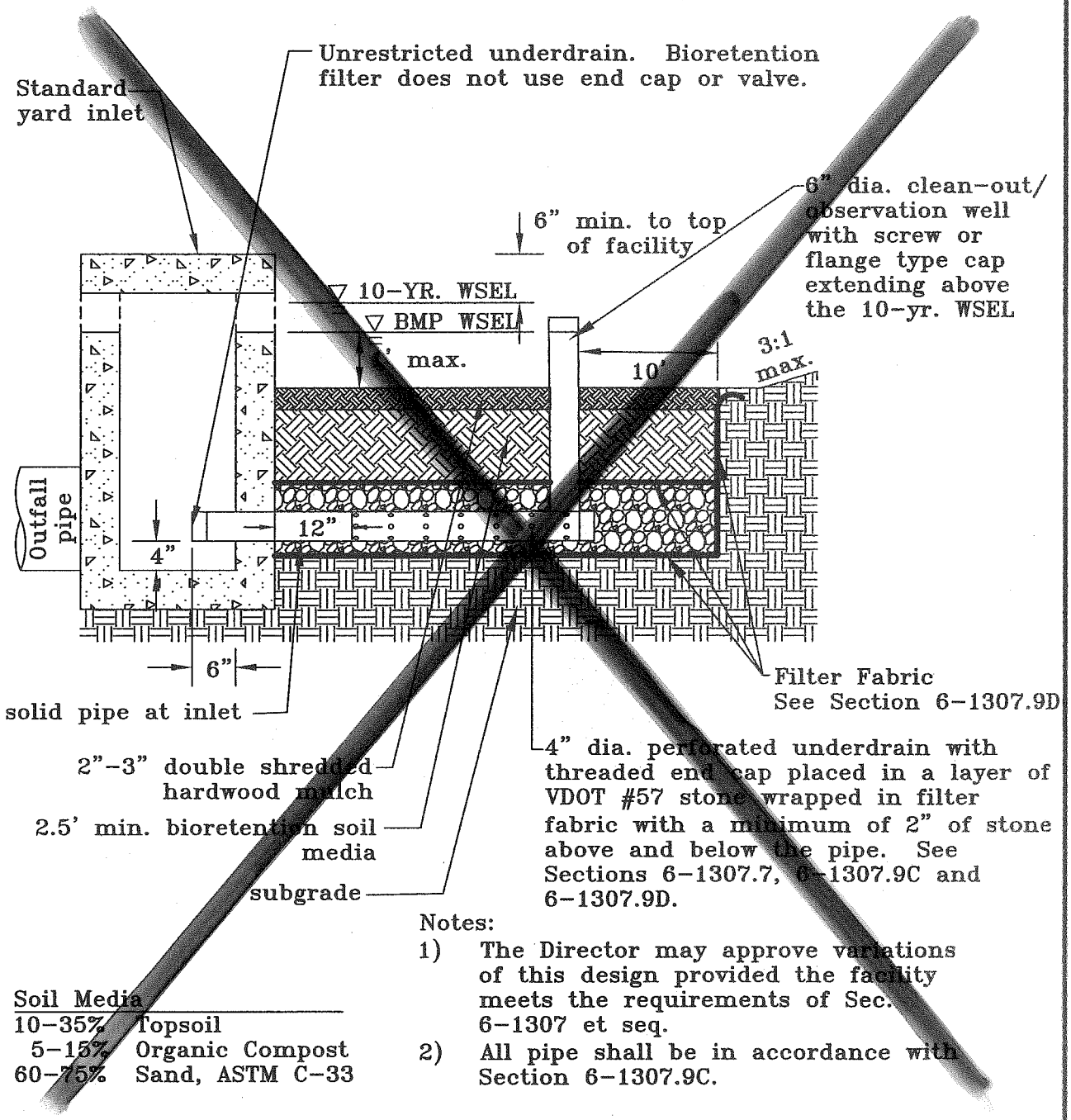
10-35% Topsoil
5-15% Organic Compost
60-75% Sand, ASTM C-33

Notes:

1) Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with VOSH requirements.
2) All pipe shall be in accordance with Section 6-1307.9C.

CROSS SECTION VIEW (NTS)

Ref. Sec. 6-1307 et. seq.	BIORETENTION FILTER OR BASIN WITH STONE STORAGE	PLATE NO.	STD. NO.
Rev. 3-07		82-6	



Notes:

1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1307 et seq.
2) All pipe shall be in accordance with Section 6-1307.9C.

Soil Media

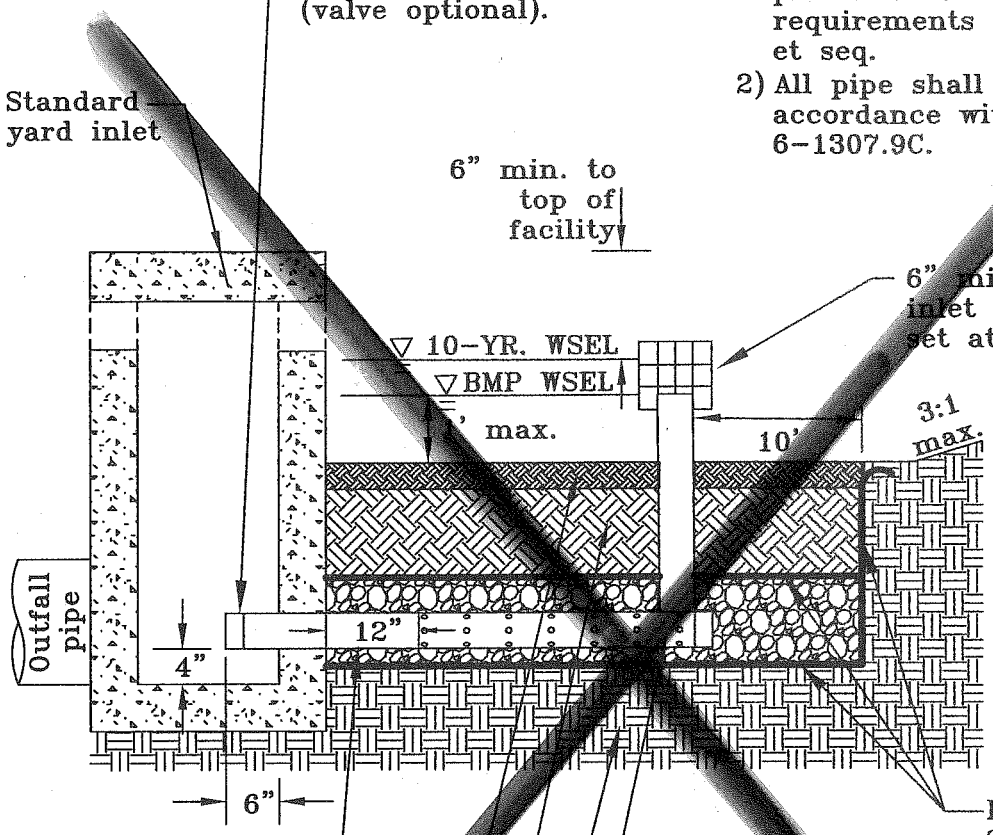
10-35%	Topsoil
5-15%	Organic Compost
60-75%	Sand, ASTM C-33

PROFILE VIEW (NTS)

Ref. Sect. 1307 et seq.	BIORETENTION FILTER	PLATE NO.	STD. NO.
Rev. 3-07		83-6	

Notes:

1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1307 et seq.
2) All pipe shall be in accordance with Section 6-1307.9C.



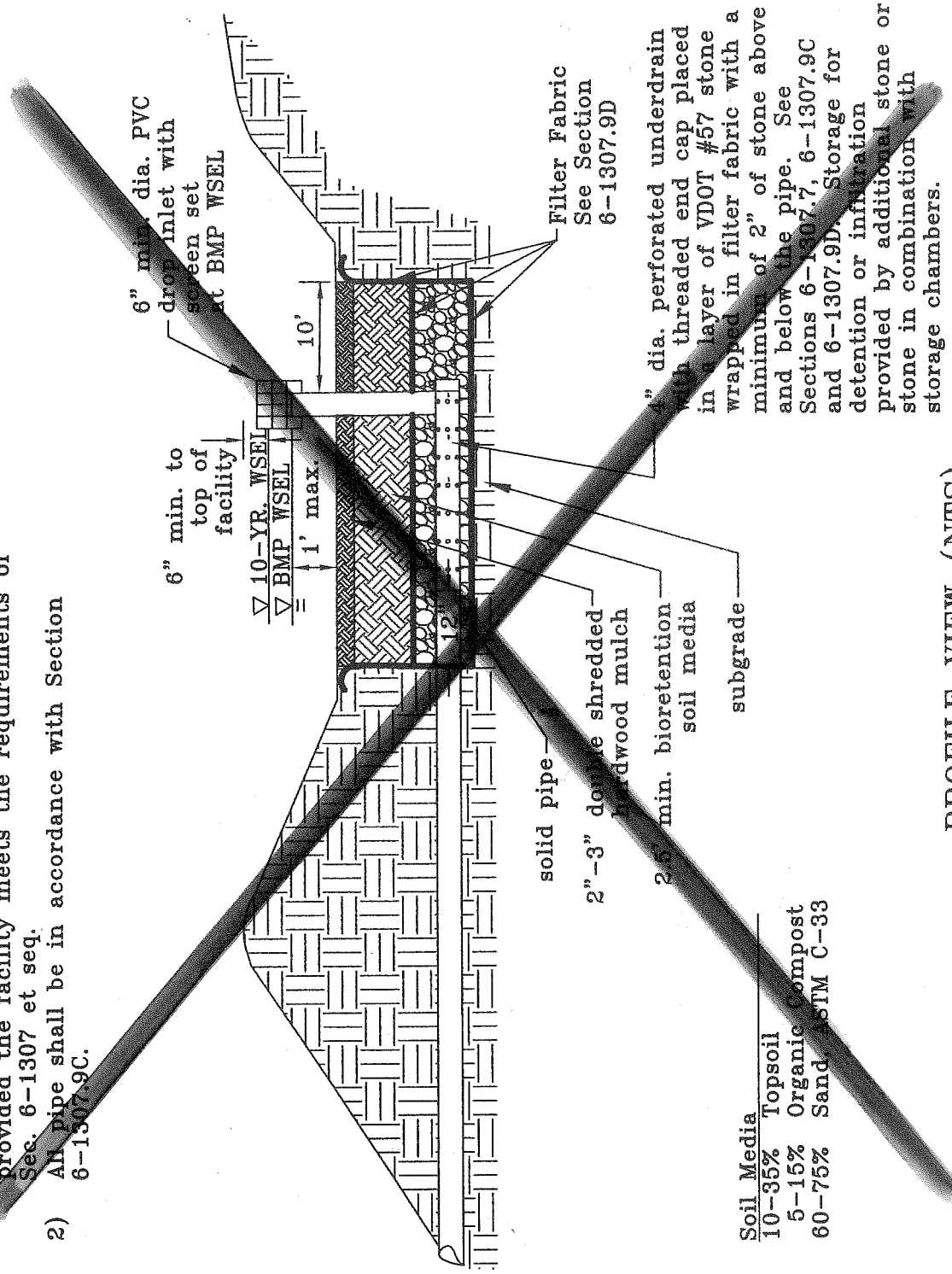
Soil Media

10-35%	Topsoil
5-15%	Organic Compost
60-75%	Sand, ASTM C-33

PROFILE VIEW (NTS)

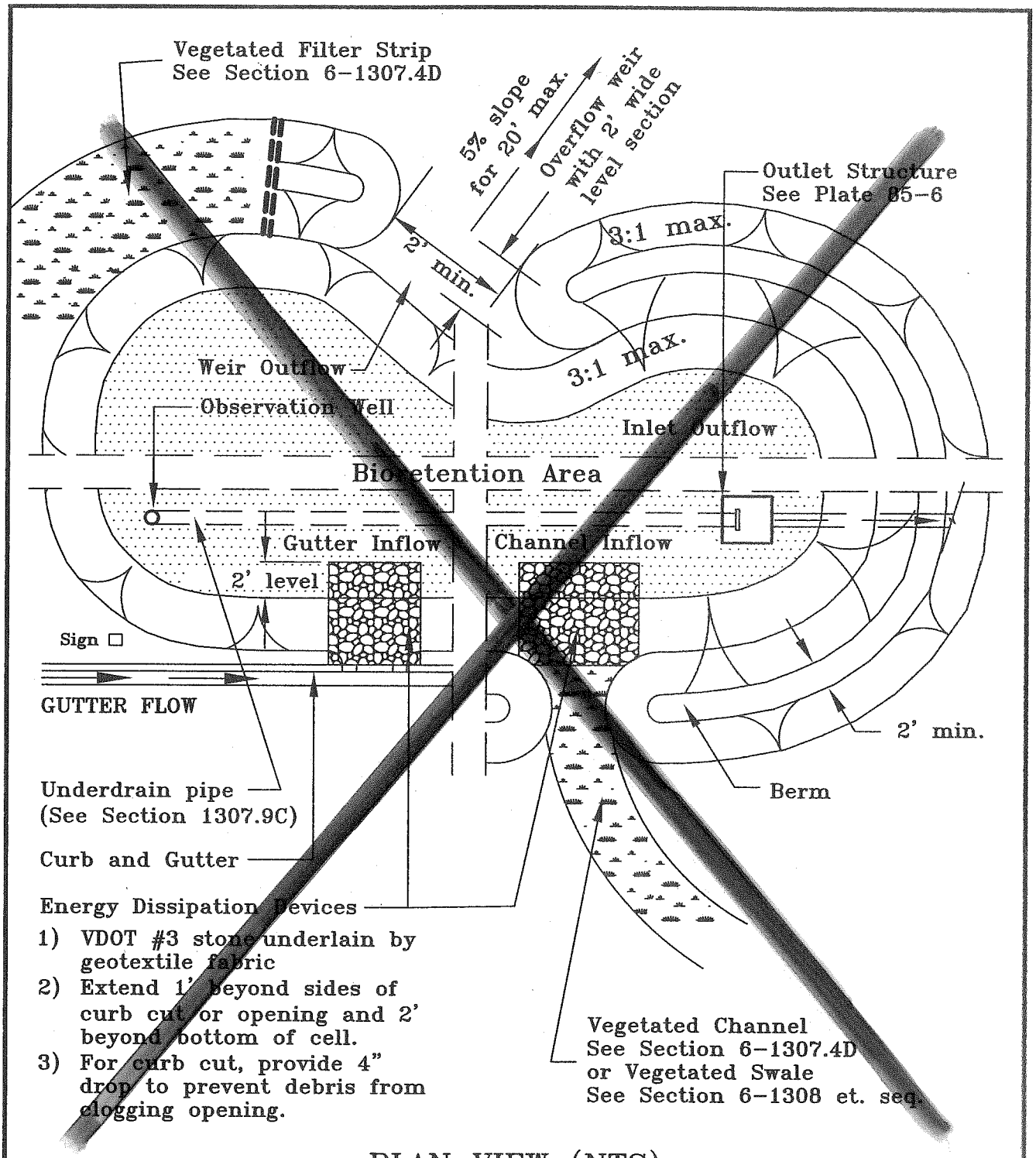
Ref. Sec. 6-1307 et seq.	BIORETENTION BASIN	PLATE NO.	STD. NO.
Rev. 3-07		84-6	

Note:
1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1307 et seq.
2) All pipe shall be in accordance with Section 6-1307.9C.



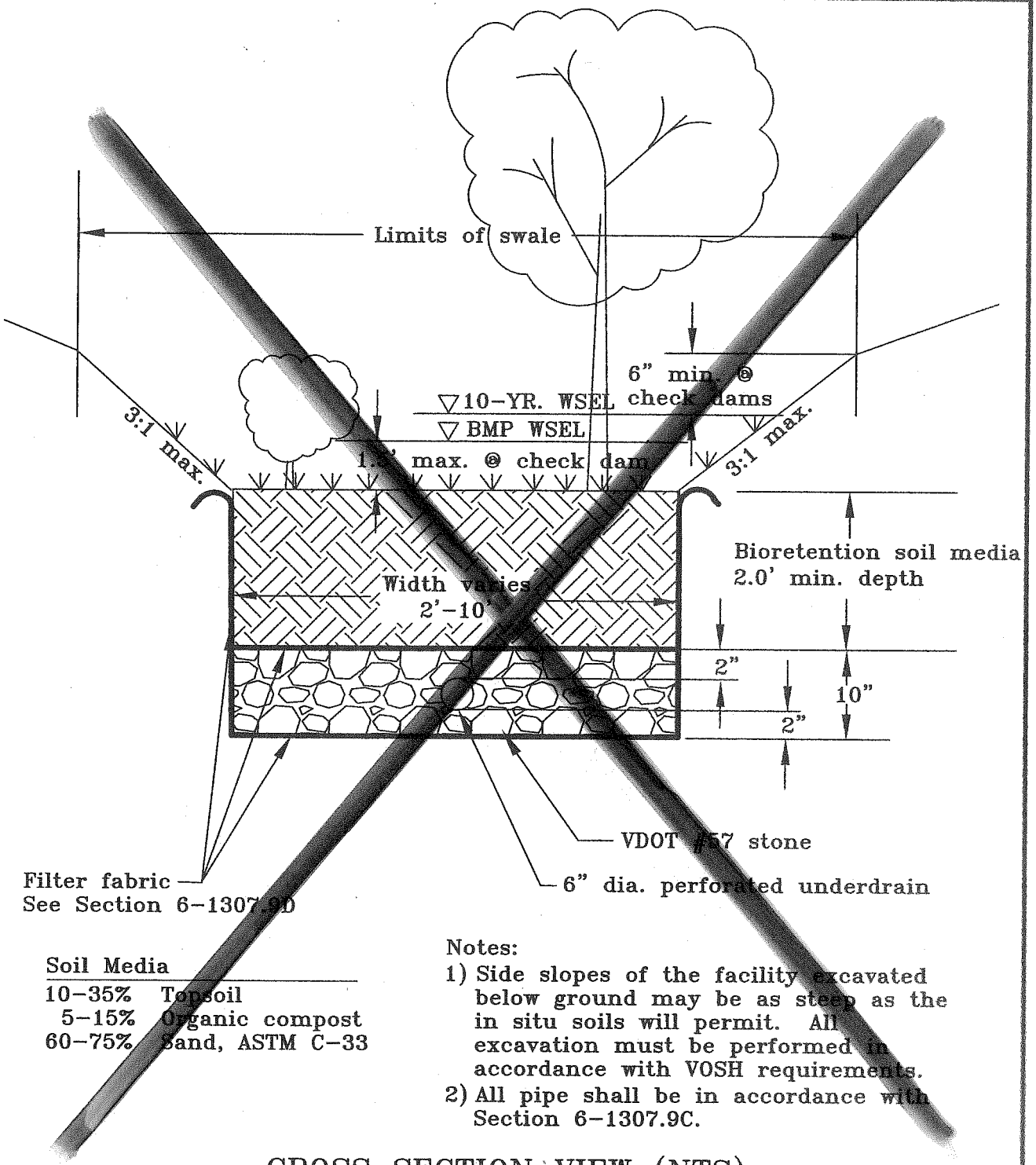
PROFILE VIEW (NTS)

Ref. Sec. 6-1307 et seq.	BIORETENTION FILTER OR BASIN (OUTFALL DAYLIGHTED)	PLATE NO.	STD. NO.
Rev. 3-07		85-6	



PLAN VIEW (NTS)

Ref. Sec. 6-1307 et. seq., Plate 85-6 Rev. 3-07, 2011 Reprint	BIORETENTION FILTER & BASIN	PLATE NO.	STD. NO.
		86-6	



Soil Media

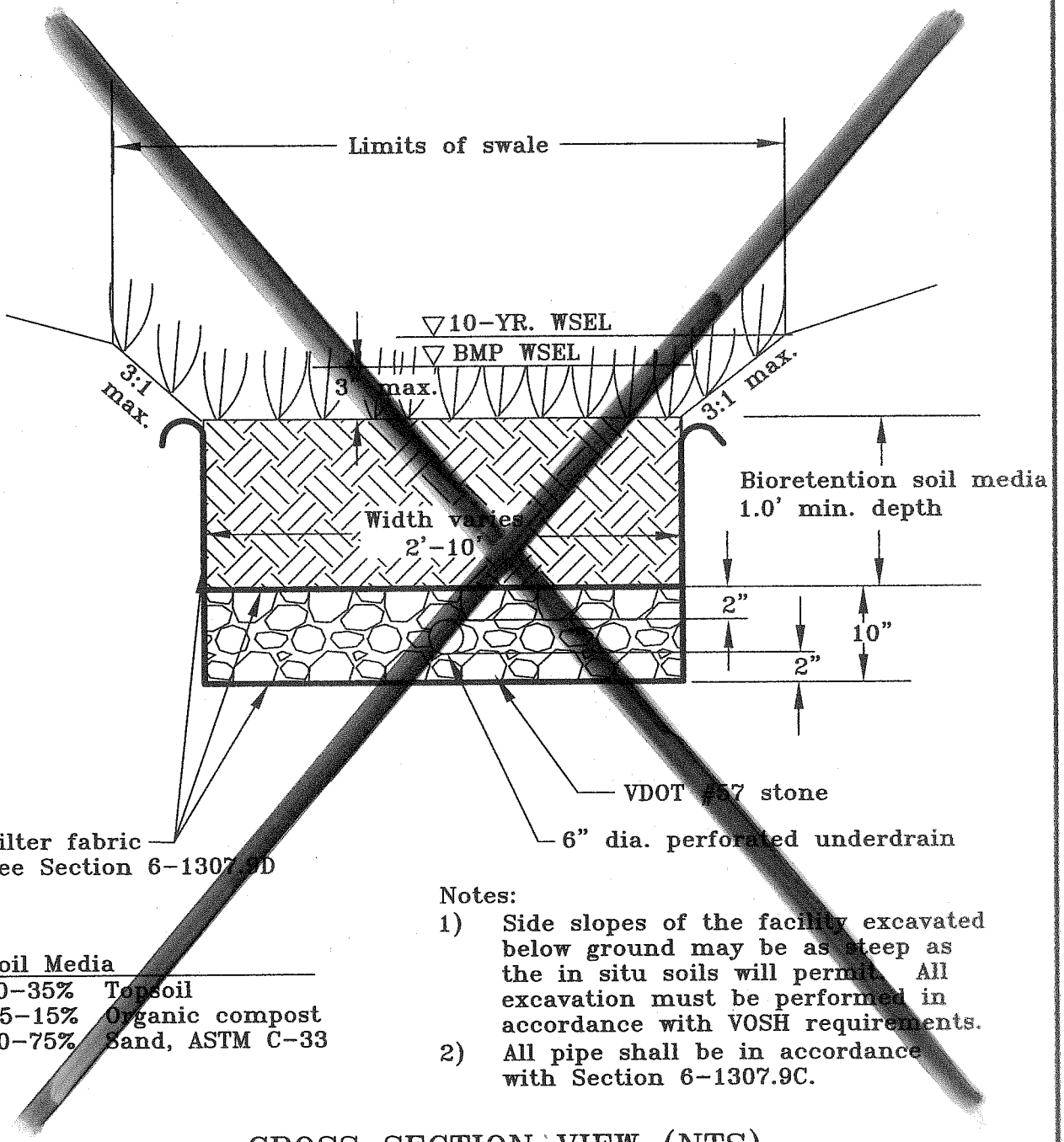
10-35%	Topsoil
5-15%	Organic compost
60-75%	Sand, ASTM C-33

Notes:

1) Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with VOSH requirements.
2) All pipe shall be in accordance with Section 6-1307.9C.

CROSS SECTION VIEW (NTS)

Ref. Sec. 6-1308 et seq.	VEGETATED SWALE WITH CHECK DAMS	PLATE NO.	STD. NO.
Rev. 3-07		87-6	



Soil Media

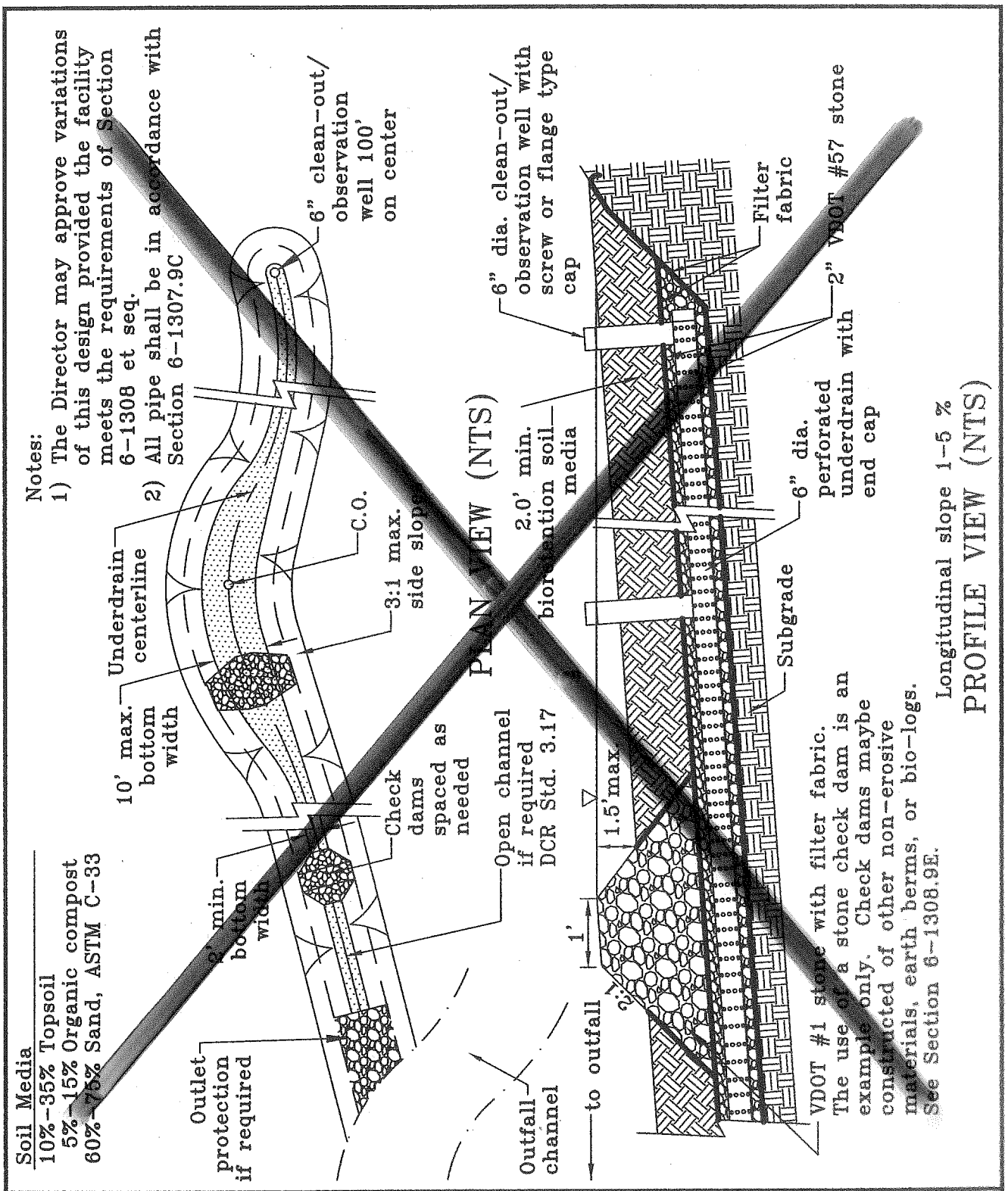
10-35%	Topsoil
5-15%	Organic compost
60-75%	Sand, ASTM C-33

Notes:

1) Side slopes of the facility excavated below ground may be as steep as the in situ soils will permit. All excavation must be performed in accordance with VOSH requirements.
2) All pipe shall be in accordance with Section 6-1307.9C.

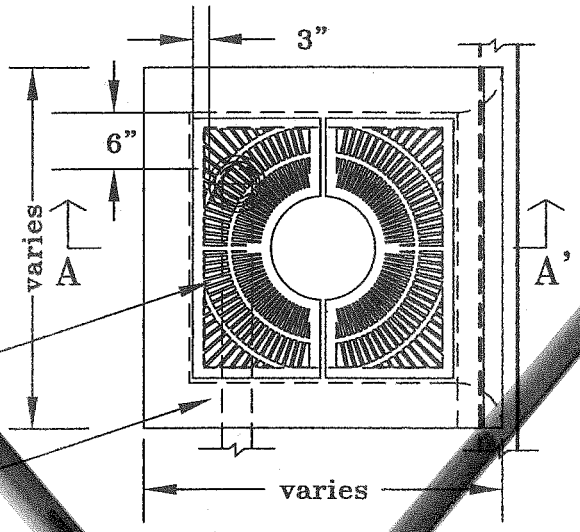
CROSS SECTION VIEW (NTS)

Ref. Sec. 6-1308 et. seq.	VEGETATED SWALE GRASS WITHOUT CHECK DAMS	PLATE NO.	STD. NO.
Rev. 3-07		88-6	



Ref. Sec. 6-1308 et seq.	VEGETATED SWALE PLAN AND PROFILE	PLATE NO.	STD. NO.
Rev. 3-07		89-6	

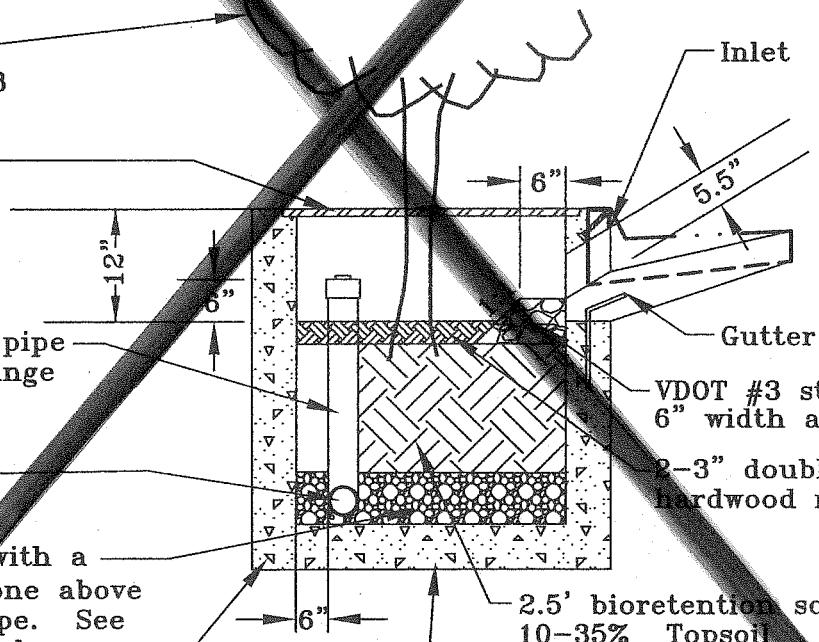
Note:
1) The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1309 et seq.
2) All pipe shall be in accordance with Section 6-1307.9C.



4" dia. perf. underdrain pipe

Discharge to approved outfall 4" dia. solid pipe

PLAN VIEW



Vegetation See Sec. 6-1309.8

Grate and frame H-20 loading

Cleanout 4" dia. pipe with screw or flange type cap

4" dia. perf. underdrain

VDOT #57 stone with a min. of 2" of stone above and below the pipe. See Secs. 6-1309.6 and 6-1309.7C.

Concrete box: pre-cast or cast-in-place See Section 6-1309.4F

Open bottom (optional) See Section 6-1309.4G

VDOT #3 stone 6" width and depth

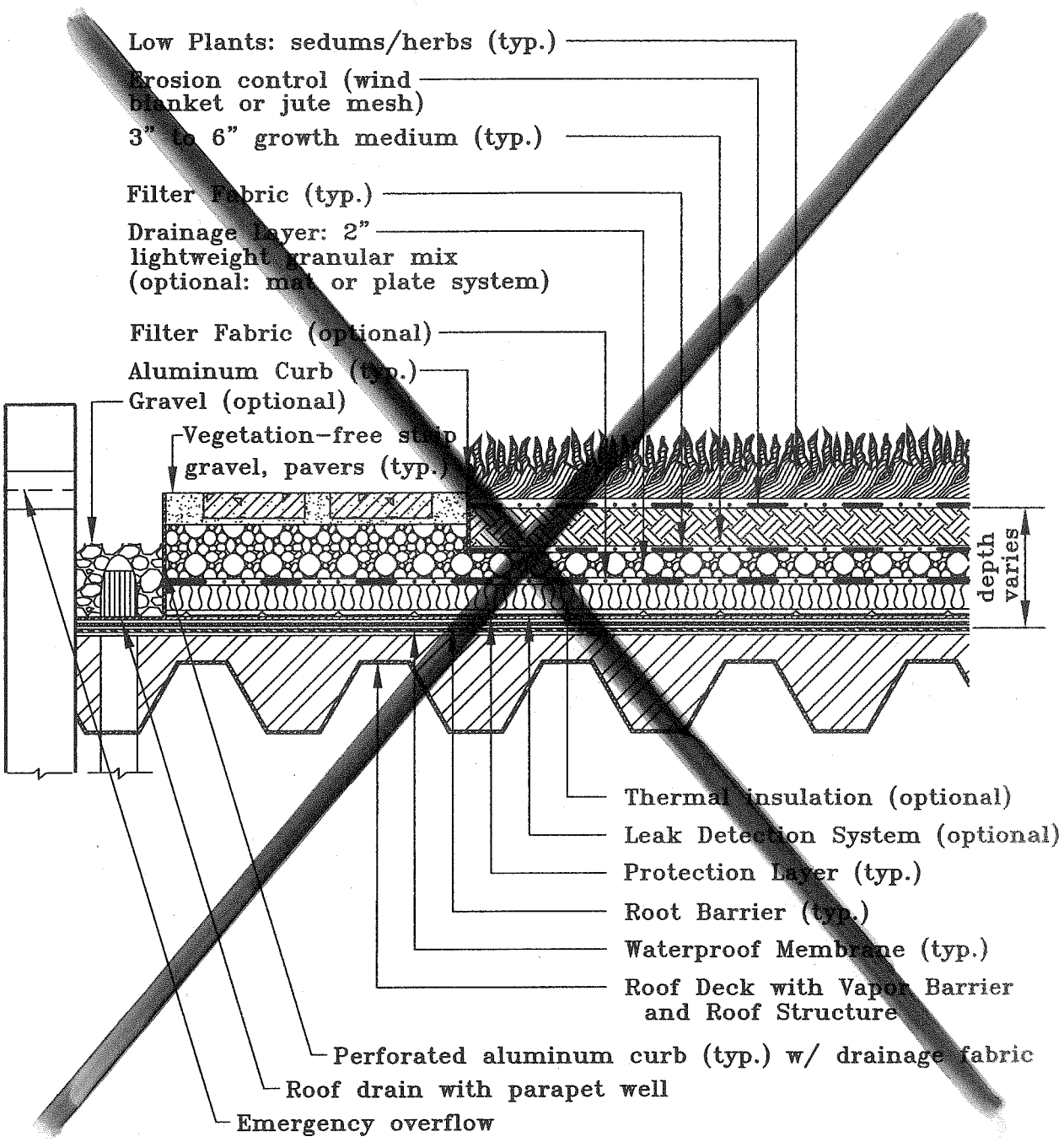
2-3" double shredded hardwood mulch

2.5' bioretention soil media
10-35% Topsoil
5-15% Organic Compost
60-75% Sand, ASTM C-33

CROSS SECTION A-A'

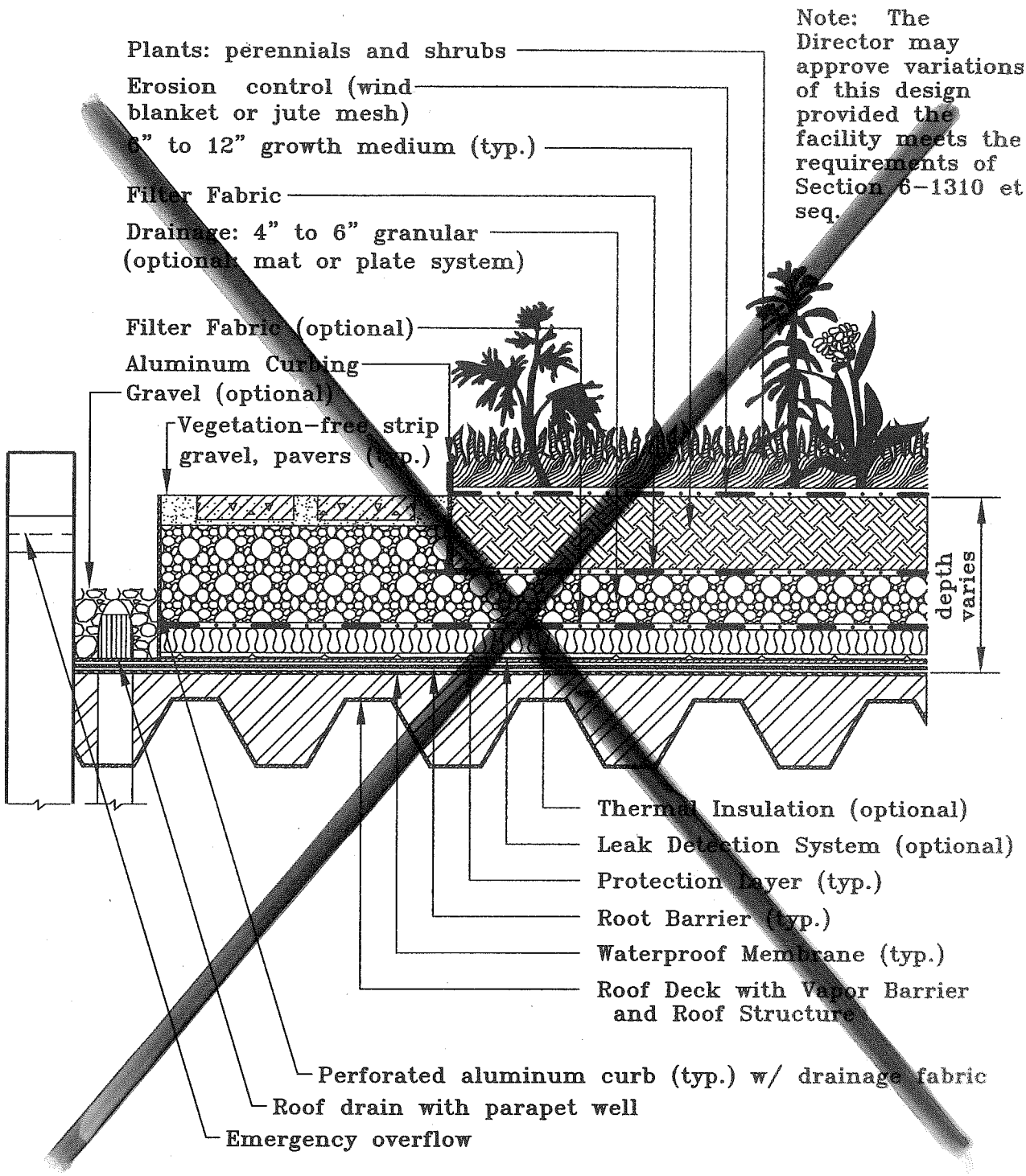
Ref. Sec. 6-1309 et seq.	TREE BOX FILTER	PLATE NO.	STD. NO.
Rev. 3-07		90-6	

Note: The Director may approve variations of this design provided the facility meets the requirements of Sec. 6-1310 et seq.



CROSS SECTION VIEW (NTS)

Ref. Sec. 6-1310 et seq. Rev. 3-07	VEGETATED ROOF EXTENSIVE	PLATE NO.	STD. NO.
		91-6	



Note: The Director may approve variations of this design provided the facility meets the requirements of Section 6-1310 et seq.

CROSS SECTION (NTS)

Ref. Sec. 6-1310 et seq.	VEGETATED ROOF INTENSIVE	PLATE NO.	STD. NO.
Rev. 3-07		92-6	

Proposed Amendments to Chapter 12 (Vegetation Preservation and Planting) of The Fairfax County Public Facilities Manual

Amend §12-0500 (Tree Conservation Plan Requirements), 12-0516 (Requirements and Specifications for Replacement Trees and/or Vegetation), by revising paragraph 12-0516.4 to read as follows:

12-0516.4 When RPAs have been disturbed without prior approval by the Director, or are proposed to be disturbed as part of a construction plan, buffer areas with native vegetation shall be restored or created as required under Chapter 118 of the Code, and planting shall be consistent with Performance Criteria found in the "Riparian Buffers Guidance and Mitigation Guidance Manual" published by the Division of Chesapeake Bay Local Assistance, Virginia Department of Conservation and Recreation. At least 25 percent of the area shall be planted with trees as specified in § 12-0516.2. In addition, one seedling as specified in § 12-0705.5 shall be planted for each 100 square feet of disturbed area and one shrub with a minimum height of 18 inches shall be planted for each 100 ~~40~~ square feet of disturbed area. Soil preparation, soil amendments, and/or seed mix shall be required as determined by the Director. The surface area associated with these plantings may be used to meet 10-year tree canopy requirements when being planted to offset allowable disturbances to RPAs. Wetland plantings (including herbaceous plantings) and/or wetland seed mix shall be used where site conditions warrant (see Tables 12.14 and 12.17).

Amend §12-0500 (Tree Conservation Plan Requirements), 12-0516 (Requirements and Specifications for Replacement Trees and/or Vegetation), by revising Table 12.14 (Replanting of Temporary Use and Resource Protection (RPA) Areas) to read as follows:

Table 12.14 Replanting of Temporary Use and Resource Protection (RPA) Areas

Area Type	Trees 2 inches in caliper or greater	Shrubs	Seedlings	Other
Temporary Use (§ 12-0516.3)	25% of the disturbed area	N/A	15 per 1,000 ft^2	Grass, and perennial seed mixes
RPA (§ 12-0516.4)	25% of the disturbed area	~~25~~ 10 per 1000 ft^2	10 per 1,000 ft^2	Wetland plants, Wetland seed

Board Agenda Item REVISED
September 10, 2013

ADMINISTRATIVE – 8

Streets into the Secondary System (Lee District)

ISSUE:
Board approval of streets to be accepted into the State Secondary System.

RECOMMENDATION:
The County Executive recommends that the street(s) listed below be added to the State Secondary System.

Subdivision	**District**	**Street**
Groveton Woods Condominium (Phase II)	Lee	Harrison ~~**Road**~~ **Lane** (Route 723) (Additional Right-of-Way (ROW) Only)
		Harrison ~~**Road**~~ **Lane** (Route 723) (Additional ROW Only)

TIMING:
Routine.

BACKGROUND:
Inspection has been made of these streets, and they are recommended for acceptance into the State Secondary System.

FISCAL IMPACT:
None.

ENCLOSED DOCUMENTS:
Attachment 1 – Street Acceptance Forms

Board Agenda Item REVISED
September 10, 2013

STAFF:
Robert A. Stalzer, Deputy County Executive
James W. Patteson, Director, Department of Public Works and Environmental Services (DPWES)
Michelle Brickner, Deputy Director, DPWES, Land Development Services

Print Form

Street Acceptance Form For Board Of Supervisors Resolution - June 2005

FAIRFAX COUNTY BOARD OF SUPERVISORS
FAIRFAX, VA

Pursuant to the request to inspect certain streets in the subdivisions as described, the Virginia Department of Transportation has made inspections, and recommends that same be included in the secondary system.

ENGINEERING MANAGER: Terry L. Yates, P.E.

BY: Nidia Alphonso

VIRGINIA DEPARTMENT OF TRANSPORTATION - OFFICE OF THE ENGINEERING MANAGER, FAIRFAX, VIRGINIA

REQUEST TO THE ENGINEERING MANAGER, FOR INCLUSION OF CERTAIN SUBDIVISION STREETS INTO THE STATE OF VIRGINIA SECONDARY ROAD SYSTEM.

PLAN NUMBER: 1653-PI-01

SUBDIVISION PLAT NAME: Groveton Woods Condominium (Phase II)

COUNTY MAGISTERIAL DISTRICT: Lee

FOR OFFICIAL USE ONLY

DATE OF VDOT INSPECTION APPROVAL: 06/26/2013

STREET NAME	LOCATION		LENGTH MILE
	FROM	TO	
Harrison Lane (Route 723) (Additional Right-of-Way Only)	215' S CL Polins Court (Route 6024)	63' S to End of Dedication	0.0
Harrison Lane (Route 723) (Additional Right-of-Way Only)	408' S CL Polins Court (Route 6024)	190' S to End of Dedication	0.0
		TOTALS:	0

NOTES:

5' Concrete Sidewalk on East Side to be maintained by Fairfax County

Attachment 1

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Board Agenda Item
September 10, 2013

ADMINISTRATIVE – 9

Supplemental Appropriation Resolution AS 14067 for the Department of Vehicle Services to Accept Grant Funding from the Virginia Department of Environmental Quality as a Result of the Virginia Electric Power Company Settlement to Install Diesel Retrofits on School Buses

ISSUE:
Board approval of Supplemental Appropriation Resolution AS 14067 for the Department of Vehicle Services to accept grant funding in the amount of $128,488 from the Virginia Department of Environmental Quality (VDEQ) to purchase and install diesel exhaust retrofits on school buses per the terms of a settlement between the Virginia Electric Power Company (VEPCO, now known as Dominion Virginia Power), the U.S. Environmental Protection Agency (EPA), the U.S. Department of Justice and several northeastern states. The grant period for this award is August 15, 2013 to September 30, 2017. There are no positions associated with this grant and no Local Cash Match is required.

RECOMMENDATION:
The County Executive recommends that the Board approve Supplemental Appropriation Resolution AS 14067 for the Department of Vehicle Services to accept a Virginia Department of Environmental Quality grant in the amount of $128,488 for FY 2014. The grant will fund the purchase and installation of approximately eight diesel exhaust retrofits on selected FCPS school buses, along with necessary data collection and ancillary support equipment.

TIMING:
Board approval is requested on September 10, 2013.

BACKGROUND:
In FY 2003, the Department of Vehicle Services (DVS) was exploring several avenues to reduce harmful emissions from County vehicles as part of the County's and region's efforts to bring the Washington Metro Area into compliance with the National Ambient Air Quality Standards pursuant to the federal Clean Air Act. While DVS was identifying promising technologies and funding to support the work, VDEQ approached DVS about the prospect of using funding from the VEPCO settlement for a suitable project involving school buses. Those talks led to a successful, 79.3 percent grant-funded retrofit project

on 436 school buses that reduced emissions of oxides of nitrogen from those buses by 25 percent.

Over the next few years, VDEQ funded several other projects around the Commonwealth from the same source while DVS retrofitted all other eligible buses in the FCPS fleet with a different technology using Environmental Project funding from the FY 2003 Carryover.

Earlier this year, VDEQ again contacted DVS about the possibility of an additional emissions reduction project on school buses that would put to use the relatively small amount of remaining funding from the settlement. A number of buses entered the FCPS fleet after the first two retrofit projects and before the EPA had fully implemented emissions standards for new diesel engines. Several of these buses are the candidates for receiving retrofits to bring their emissions down to the current particulate matter emissions standards for new diesel engines.

FISCAL IMPACT:
Funding in the amount of $128,488 will support the DVS purchase and installation of diesel retrofits on school busses as per the terms of the VEPCO settlement. No Local Cash Match is required to accept this funding. This action does not increase the expenditure level in the Federal-State Grant Fund, as funds are held in reserve for unanticipated grant awards. This grant does not allow the recovery of indirect costs.

CREATION OF POSITIONS:
No positions will be created by this grant.

ENCLOSED DOCUMENTS:
Attachment 1 - Supplemental Appropriation Resolution AS 14067
Attachment 2 - Statement of award

STAFF:
David J. Molchany, Deputy County Executive
Mark G. Moffatt, Director, Department of Vehicle Services
Christopher Allison, Assistant Director, Department of Vehicle Services

SUPPLEMENTAL APPROPRIATION RESOLUTION AS 14067

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held in the Board Auditorium in the Government Center at 12000 Government Center Parkway, Fairfax Virginia on September 10, 2013, at which a quorum was present and voting, the following resolution was adopted:

BE IT RESOLVED by the Board of Supervisors of Fairfax County, Virginia, that in addition to appropriations made previously for FY 2014, the following supplemental appropriation is authorized and the Fiscal Planning Resolution is amended accordingly:

Appropriate to:

Fund:	500-C50000, Federal-State Grant Fund	
Agency:	G1010, Department of Vehicle Services	$128,488
Grant:	1100001-2014, VEQ School Bus Emissions Reduction Grant	

Reduce Appropriation to:

Agency:	G8787, Unclassified Administrative Expenses	$128,488
Fund:	500-C50000, Federal-State Grant Fund	

Source of Funds: Virginia Department of Environmental Quality, $128,488

A Copy - Teste:

_____

Catherine A. Chianese
Clerk to the Board of Supervisors

Attachment 2

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

August 15, 2013

Mr. Mark Moffatt
Director, Division of Vehicle Services
Fairfax County
12000 Government Center Parkway, Suite 417
Fairfax, Virginia 22035

Dear Mr. Moffatt,

I am pleased to inform you that the Virginia Department of Environmental Quality (VDEQ) is awarding your agency a grant in the amount of $128,488. This money must be used for the retrofit of Fairfax County school buses with EPA verified air pollution control technology and must be expended over the next four calendar years (by September 30, 2017).

This grant is the final allotment being made by VDEQ from the funds provided to VDEQ for this purpose as part of the supplemental environmental project resulting from the Dominion Virginia Power (VEPCO) federal consent decree. My staff has appreciated the professionalism and effectiveness that Fairfax County demonstrated in past use of this type of funding. I am looking forward to another successful endeavor, and I appreciate your willingness to work with my staff on such important matters as improving air quality.

Please do not hesitate to call me or Doris McLeod at 804-698-4197 if you have any questions on this matter.

Sincerely,

Michael G. Dowd
Director, Air Division

Cc: Mr. Dave Duval, email transmission

Board Agenda Item
September 10, 2013

ADMINISTRATIVE - 10

Discontinuance of Portions of Crest Drive (Route 9684) from the Secondary System of State Highways (Mason District)

ISSUE:
Board adoption of the attached resolution requesting that portions of Crest Drive (Route 9684) be discontinued from the Secondary System of State Highways (Secondary System).

RECOMMENDATION:
The County Executive recommends that the Board adopt the attached resolution requesting that the identified portions of subject roadway be discontinued from the Secondary System, and that the Board authorize the County Executive to sign the maintenance agreement.

TIMING:
Routine.

BACKGROUND:
The applicants, BC Consultants, Inc. and the Fairfax County School Board, are requesting discontinuance of portions of Crest Drive (Route 9684). The areas requested for discontinuance have been used, occupied, and maintained by Fairfax County Public Schools (FCPS), on behalf of the Fairfax County School Board since the original Masonville School was closed and the facility converted to an administrative building.

There are a number of features currently in the right-of-way, such as parking, dumpsters, and signage that the Virginia Department of Transportation (VDOT) will not maintain but that are necessary for the function of the newly constructed Mason Crest Elementary School. The process of this discontinuance will allow for the release of the VDOT permit and continued maintenance of these improvements by FCPS.

A perpetual street easement was recorded, so that the newly constructed cul-de-sac, which serves as a turnaround, continues to be under VDOT maintenance. The two portions beyond the cul-de-sac will remain public right-of-way and be maintained by FCPS.

The applicants prepared a maintenance agreement, to be recorded with the Fairfax County Land Records, which addresses the areas to be maintained and continued access for the adjacent parcel owned by the Fairfax County Park Authority.

If the discontinuance request is approved, the mileage will be removed from VDOT's maintenance responsibility which assists in administering its maintenance mileage logs that are used to determine levels of State maintenance funding within Fairfax County.

FISCAL IMPACT:
None.

ENCLOSED DOCUMENTS:
Attachment I: Resolution
Attachment II: Plat
Attachment III: Location Map
Attachment IV: Draft Maintenance Agreement
Attachment V: Letter Requesting Discontinuance

STAFF:
Robert A. Stalzer, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Michael A. Davis, FCDOT

Attachment I

RESOLUTION

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held in the Board Auditorium of the Fairfax County Government Center at Fairfax, Virginia, on Tuesday, September 10, 2013, at which meeting a quorum was present and voting, the following resolution was adopted:

WHEREAS, BC Consultants, Inc. and the Fairfax County School Board petitioned the Fairfax County Board of Supervisors to discontinue portions of Crest Drive (Route 9684), and;

WHEREAS, Fairfax County Public Schools improved the discontinued portions with parking and other functions necessary for the newly constructed Mason Crest Elementary School, and;

WHEREAS, the Virginia Department of Transportation will not maintain the improved areas but will continue to maintain the newly constructed cul-de-sac that serves as access to Mason Crest Elementary, and;

WHEREAS, the portions of Crest Drive (Route 9684) that are hereby discontinued are no longer needed for public convenience, and;

WHEREAS, notice of intention to discontinue Crest Drive (Route 9684) was given in accordance with Va. Code Ann. § 33.1-150 (2011),

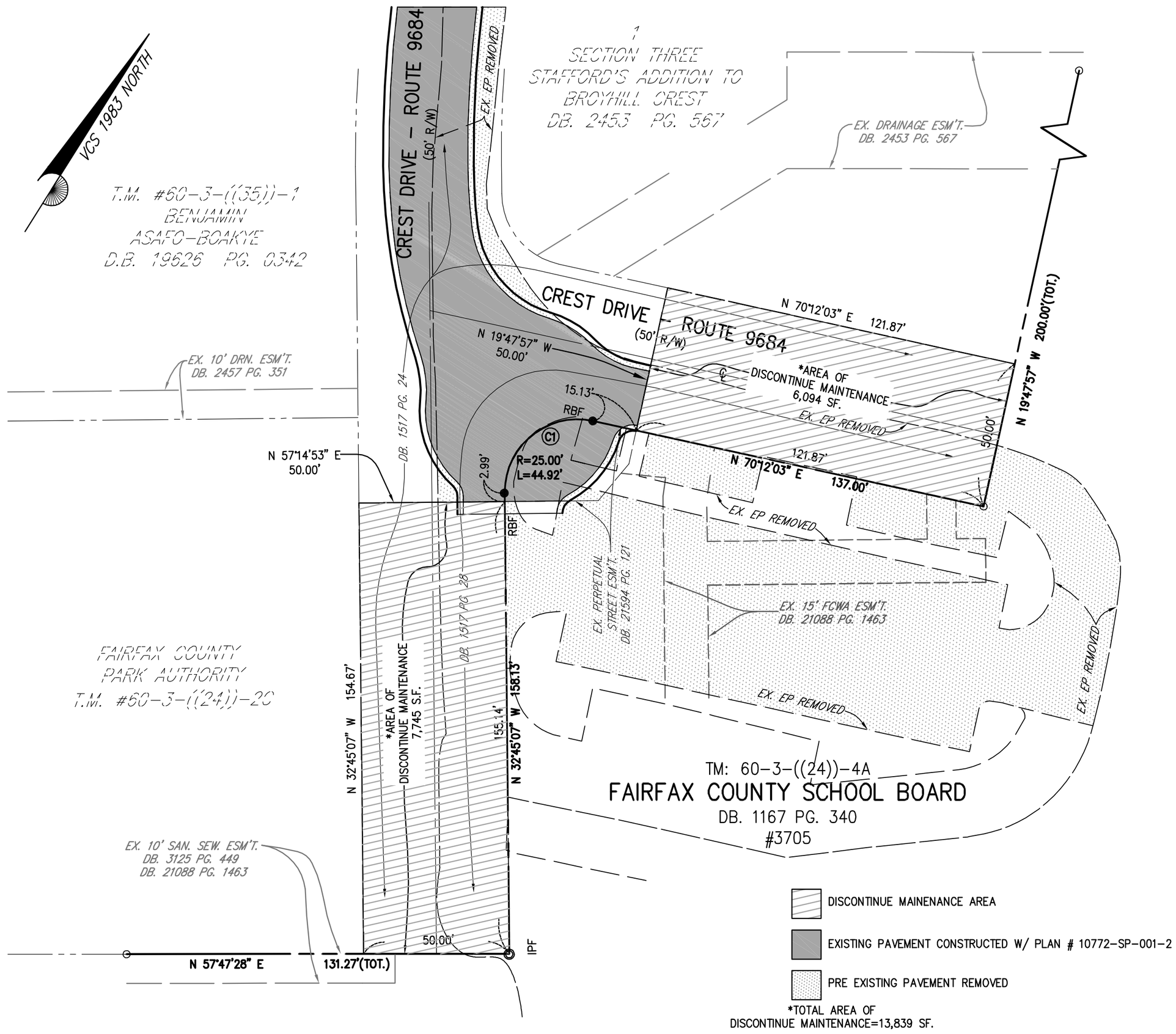
NOW THEREFORE, BE IT RESOLVED that this Board hereby requests, pursuant to Virginia Code Section 33.1-150, that the Commonwealth Transportation Board, discontinue as part of the secondary system of state highways, the remaining residual portions of Crest Drive (Route 9684).

A Copy Teste:

_____

Catherine A. Chianese
Clerk to the Board of Supervisors

ATTACHMENT 2



NOTES

1.) THE PROPERTY DELINEATED ON THIS PLAT IS LOCATED ON ASSESSMENT MAP NO. 60-3, AND IS ZONED R-3.

2.) OWNER: FAIRFAX COUNTY SCHOOL BOARD
ADDRESS: 8115 GATEHOUSE ROAD
FALLS CHURCH, VA 22042
DB. 1167 PG. 340

3.) THE SITE SHOWN HEREON IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983 AS COMPUTED FROM A GPS SURVEY WHICH TIES THIS BOUNDARY TO THE FAIRFAX COUNTY GEOGRAPHIC INFORMATION SYSTEM.

4.) THE BOUNDARY SURVEY SHOWN ON THIS PLAT IS BASED UPON A FIELD RUN SURVEY PREFORMED BY BC CONSULTANTS DATED JUNE 2009.

5.) NO TITLE REPORT FURNISHED; ALL PREVIOUSLY RECORDED RIGHTS-OF-WAY, EASEMENTS OR OTHER INTEREST OF THE COUNTY REMAIN IN FULL FORCE AND EFFECT UNLESS OTHERWISE SHOWN ON THIS PLAT.

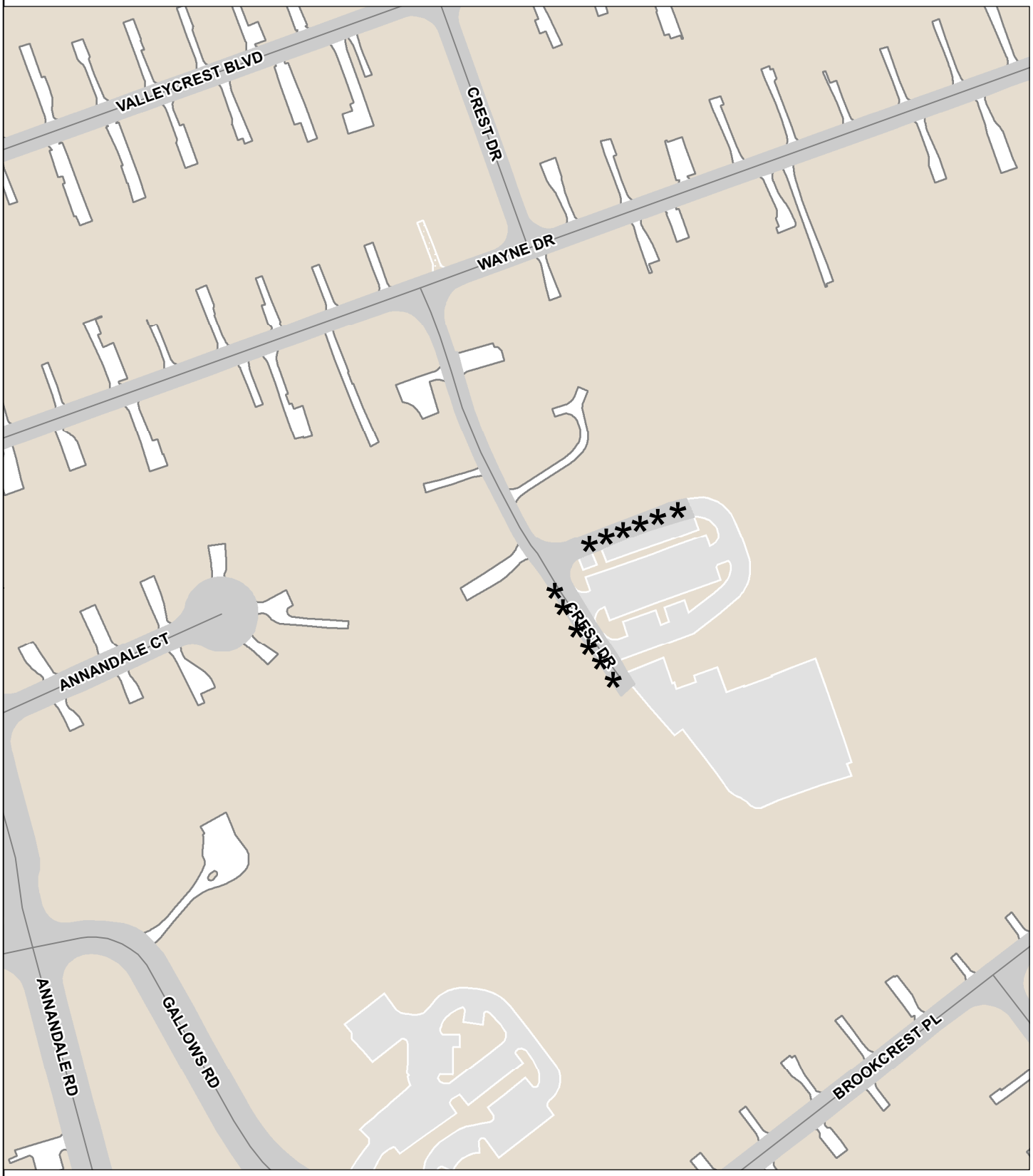
CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	BEARING	CHORD	DELTA
C1	25.00'	44.92'	31.40'	N 18°43'28" E	39.12'	102°57'10"

BC Consultants
Planners • Engineers • Surveyors • Landscape Architects
12600 Fair Lakes Circle, Suite 100, Fairfax, VA 22033
(703)449-8100 (703)449-8108 (Fax)
www.bcconsultants.com

Discontinuance of Portions of Crest Drive (Route 9684)

Mason District



Tax Map 60-3

N
W E
S

* Symbol Denotes Area to be Discontinued

Document prepared by
and after recording return to:
Hunton & Williams LLP
1751 Pinnacle Drive, Suite 1700
McLean, Virginia 22102
Attn: Nicholas H. Grainger, Esquire (VSB # 72983)

Tax Map Parcel: 60-3-((24))-4A

MAINTENANCE AGREEMENT

THIS MAINTENANCE AGREEMENT (the "Agreement") is made this _____ day of _____, 2013, by and between the ***FAIRFAX COUNTY SCHOOL BOARD***, a body corporate (hereinafter the "School Board") and the ***BOARD OF SUPERVISORS OF FAIRFAX COUNTY VIRGINIA***, a body corporate and politic (hereinafter called the "County").

WITNESSETH

WHEREAS, the School Board is the owner of certain real property described as Tax Map Parcel 60-3-((24))-4A (the "Property"), acquired by deed recorded in Deed Book 1167, page 340 among the land records in the Clerk's Office of the Circuit Court of Fairfax County, Virginia (the "Land Records"); and

WHEREAS, the County is the fee owner of a portion of Crest Drive (Route 9684) fronting the Property (the "Discontinued Road Section"); and

WHEREAS, in accordance with a request made to the Commonwealth Transportation Board by the County pursuant to that certain Discontinuance Resolution dated September 10, 2013, the Discontinued Road Section was removed from the State Secondary Road System; and

WHEREAS, the School Board and the County desire to enter into this Agreement to provide for the future maintenance of the Discontinued Road Section by the School Board.

NOW THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The School Board shall maintain the Discontinued Road Section in accordance with the maintenance requirements for private roads as described in the Fairfax County Public Facilities Manual, as it may be amended ("Maintenance Requirements").

2. Access to the adjacent parcel owned by the Fairfax County Park Authority shall continue to be provided through the discontinued portion.

3. In the event the School Board fails to maintain the Discontinued Road Section in accordance with the Maintenance Requirements, and following reasonable notice to the School Board and the School Board's subsequent failure to cure,

the County may take reasonable steps to maintain the Discontinued Road Section. The School Board shall reimburse the County upon demand, within thirty (30) days of receipt of a detailed invoice for all reasonable costs incurred by the County. It is expressly understood and agreed that the County is under no obligation to maintain the Discontinued Road Section, and in no event shall this Agreement be construed to impose any such obligation upon the County.

4. In connection with the performance of the aforesaid maintenance, the School Board shall be responsible in accordance with applicable law for its acts and the acts of its agents.

5. This Agreement shall be recorded among the Land Records, and shall constitute a covenant running with the Property.

IN WITNESS of which, the parties have executed this Agreement.

DRAFT

[SIGNATURES APPEAR ON THE FOLLOWING PAGES]

WITNESS the following signatures and seals:

FAIRFAX COUNTY SCHOOL BOARD,
a body corporate

By:_____(SEAL)
Name:_____
Title:_____

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me in the above jurisdiction this ____ day of _____, 2013, by _____, _____ of the FAIRFAX COUNTY SCHOOL BOARD, a body corporate, on behalf of the School Board.

_____
Notary Public

Registration No.:_____

My Commission Expires: _____

DRAFT

Executed and accepted on behalf of The Board of Supervisors of Fairfax County, Virginia, by authority granted by the said Board.

APPROVED AS TO FORM:

FAIRFAX COUNTY BOARD OF SUPERVISORS

By: _____

_____
Assistant County Attorney

Edward L. Long, Jr.
County Executive

COMMONWEALTH OF VIRGINIA:
COUNTY OF FAIRFAX: to-wit

The foregoing instrument was acknowledged before me this ____ day of _____, 2013, by Edward L. Long, Jr., County Executive.

_____
Notary Public

Registration No.:_____

My Commission Expires: _____

DRAFT

BC Consultants
Planners · Engineers · Surveyors · Landscape Architects
Fairfax · Winchester

January 14, 2013

Ms. Michelle Guthrie
Fairfax Co. Dept. of Transportation
12055 Government Center Parkway
Suite 1034
Fairfax, VA 22035-5511

Re: Mason Crest Elementary School
Request for Discontinuance of Maintenance
for a portion of Route 9684, Crest Drive
Fairfax County Map #: 60-3- ((24)) -4A
BC Project #: 09015.02

Dear Ms. Guthrie:

On behalf of our client, the Fairfax County School Board (the "School Board"), and at the request of the Virginia Department of Transportation (VDOT), we request the discontinuance of maintenance of a portion of Crest Drive, State Route 9684, as shown on the enclosed plat. The areas being requested for discontinuance have been used, occupied and maintained by Fairfax County Public Schools ("FCPS"), on behalf of the School Board, since the original Masonville School was closed and the facility converted to an administrative building. There are a number of features currently in the right-of-way, such as parking, dumpsters, and signage, that VDOT will not maintain but that are necessary for the function of the newly constructed Mason Crest Elementary School. The processing of this discontinuance request will allow for the release of the VDOT permit and the continued maintenance of these improvements by FCPS.

The school site adjacent to the portions of Crest Drive for which the discontinuance is requested was conveyed to the School Board in 1954. In 1956, the Broyhill Crest developer dedicated Crest Drive to public use for street purposes. Crest Drive was added to the secondary system in 1958 as part of legislation requiring VDOT to maintain access routes to public schools. This resulted in the inclusion of 0.13 miles of Crest Drive into the state system for the purposes of maintaining access to a public school. The 0.13 miles included a portion of the original elementary school parking lot to provide the ability for a turnaround for maintenance vehicles. Please see the attached VDOT exhibit for illustration of this area.

The discontinuance of maintenance for this portion of Crest Drive does not present a hardship for VDOT to continue to maintain access to the school. A perpetual street

The BC Consultants, Inc.
12600 Fair Lakes Circle, Suite 100, Fairfax, VA 22033
(703) 449-8100 (703) 449-8108 (Fax)
www.bcconsultants.com

easement was recorded so that the cul-de-sac, which serves as a turnaround, continues to be under VDOT maintenance. It is expected that the areas beyond the cul-de-sac will continue to be public right-of-way, though maintained by FCPS.

Based upon the information above, we believe this request for discontinuance of maintenance is justified. Thank you for your consideration in this matter and please contact me at (703) 449-8100 if you have any questions or need additional information.

Sincerely,
THE BC CONSULTANTS, INC.

Matthew Lawrence, P.E.
Project Manager

Enclosures

MSL

(V:\project_2009\09015\Engr\Documents\Letters\09015 Discontinuance Request.doc)

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Board Agenda Item
September 10, 2013

ADMINISTRATIVE - 11

Authorization to Advertise a Public Hearing to Establish Parking Restrictions on Daniels Avenue, Poplar Street and Little River Turnpike Service Road (Mason District)

ISSUE:
Board authorization to advertise a public hearing to consider a proposed amendment to Appendix R of *The Code of the County of Fairfax, Virginia* (Fairfax County Code), to establish parking restrictions on Daniels Avenue, Little River Turnpike service road and Poplar Street in the Mason District.

RECOMMENDATION:
The County Executive recommends that the Board authorize advertisement of a public hearing for October 8, 2013, at 4:00 p.m. to consider adoption of a Fairfax County Code amendment (Attachment I) to Appendix R, to prohibit commercial vehicles, as defined in Section 82-5-7 of the Fairfax County Code, recreational vehicles and all trailers from parking on Daniels Avenue from the southern boundary of 4104 Daniels Avenue to Maple Place, Little River Turnpike service road from the eastern boundary of 7205 Little River Turnpike to John Marr Drive, and Poplar Street from Annandale Road to Daniels Avenue, seven days per week.

TIMING:
The Board of Supervisors should take action on September 10, 2013, to provide sufficient time for advertisement of the public hearing on October 8, 2013, at 4:00 p.m.

BACKGROUND:
Fairfax County Code Section 82-5-37(5) authorizes the Board of Supervisors to designate restricted parking in non-residential areas where long term parking of vehicles diminish the capacity of on-street parking for other uses.

Members of the Annandale Central Business District Planning Committee (ACBDPC) and other Mason District residents contacted the Mason District office regarding concerns of long-term vehicle parking in the Annandale Community Revitalization District (CRD). The community members requested that action be taken to eradicate these parking issues. The Fairfax County Office of Community Revitalization assisted the ACBDPC in conducting community outreach to commercial properties to advertise a public meeting where there was unanimous support to prohibit commercial vehicles as

defined in Section 82-5-7 of the Fairfax County Code, recreational vehicles, and all trailers from parking on Daniels Avenue from the southern boundary of 4104 Daniels Avenue to Maple Place, Little River Turnpike service road from the eastern boundary of 7205 Little River Turnpike to John Marr Drive, and Poplar Street from Annandale Road to Daniels Avenue, seven days per week.

Based on staff observations of the aforementioned streets, long term parking of out-of-area vehicles is diminishing the capacity of on-street parking for use by the business community.

FISCAL IMPACT:
The cost of sign installation is estimated at $3,000 to be paid out of Fairfax County Department of Transportation (FCDOT) funds.

ENCLOSED DOCUMENTS:
Attachment I: Amendment to the Fairfax County Code, Appendix R (General Parking Restrictions)
Attachment II: Area Map of Proposed Parking Restriction

STAFF:
Robert A. Stalzer, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Eric Teitelman, Chief, Capital Projects and Operations Division, FCDOT
Maria Turner, Sr. Transportation Planner, FCDOT

Attachment I

PROPOSED CODE AMENDMENT

THE CODE OF THE COUNTY OF FAIRFAX, VIRGINIA
APPENDIX R

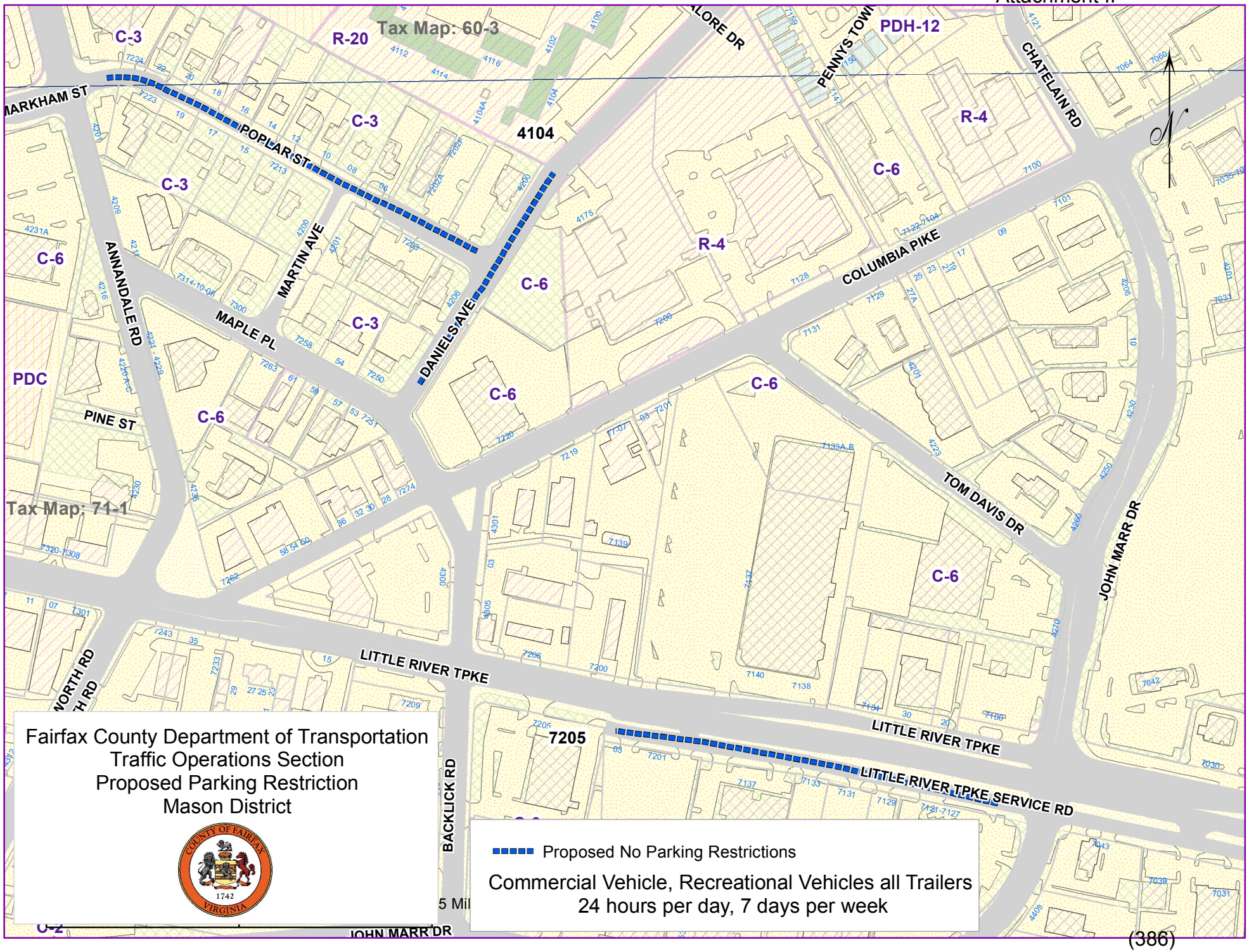
Amend *The Code of the County of Fairfax*, *Virginia,* by adding the following to Appendix R, in accordance with Section 82-5-37:

Daniels Avenue (Route 958) from 4104 Daniels Avenue to Maple Place.
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on Daniels Avenue from the southern boundary of 4104 Daniels Avenue to Maple Place, seven days per week.

Little River Turnpike (Route 236) service road (FR 781) from 7205 Little River Turnpike to John Marr Drive.
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on Little River Turnpike service road from the eastern boundary of 7205 Little River Turnpike to John Marr Drive, seven days per week.

Poplar Street (Route 957) from Annandale Road to Daniels Avenue.
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on Poplar Street from Annandale Road to Daniels Avenue, seven days per week.

Attachment II



Fairfax County Department of Transportation
Traffic Operations Section
Proposed Parking Restriction
Mason District

Proposed No Parking Restrictions

Commercial Vehicle, Recreational Vehicles all Trailers
24 hours per day, 7 days per week

Board Agenda Item
September 10, 2013

ADMINISTRATIVE - 12

Authorization to Advertise a Public Hearing to Establish Parking Restrictions on Williams Drive (Providence District)

ISSUE:
Board authorization to advertise a public hearing to consider a proposed amendment to Appendix R of *The Code of the County of Fairfax, Virginia* (Fairfax County Code), to establish parking restrictions on Williams Drive in the Providence District.

RECOMMENDATION:
The County Executive recommends that the Board authorize advertisement of a public hearing for October 8, 2013, at 4:00 p.m. to consider adoption of a Fairfax County Code amendment (Attachment I) to Appendix R, to prohibit commercial vehicles, as defined in Section 82-5-7 of the Fairfax County Code, recreational vehicles and all trailers from parking on Williams Drive from Arlington Boulevard to Javier Road, from 9:00 p.m. to 6:00 a.m., seven days per week.

TIMING:
The Board of Supervisors should take action on September 10, 2013, to provide sufficient time for advertisement of the public hearing on October 8, 2013, at 4:00 p.m.

BACKGROUND:
Fairfax County Code Section 82-5-37(5) authorizes the Board of Supervisors to designate restricted parking in non-residential areas where long term parking of vehicles diminish the capacity of on-street parking for other uses.

The Providence District office has forwarded a petition and request from nearly all of the business owners along Williams Drive to prohibit commercial vehicles as defined in Section 82-5-7 of the Fairfax County Code, recreational vehicles, and all trailers from parking on Williams Drive from Arlington Boulevard to Javier Road, from 9:00 p.m. to 6:00 a.m., seven days per week. Business owners have petitioned for the restriction indicating that out-of-area businesses are parking their commercial vehicles and trailers for long periods of time resulting in scarce parking for employees and business customers. This has been verified by staff on a number of occasions.

Based on staff observations of the aforementioned street, long term parking of out-of-area vehicles is diminishing the capacity of on-street parking for use by the business community.

FISCAL IMPACT:
The cost of sign installation is estimated at $2,000 to be paid out of Fairfax County Department of Transportation (FCDOT) funds.

ENCLOSED DOCUMENTS:
Attachment I: Amendment to the Fairfax County Code, Appendix R (General Parking Restrictions)
Attachment II: Area Map of Proposed Parking Restriction

STAFF:
Robert A. Stalzer, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Eric Teitelman, Chief, Capital Projects and Operations Division, FCDOT
Maria Turner, Sr. Transportation Planner, FCDOT

Attachment I

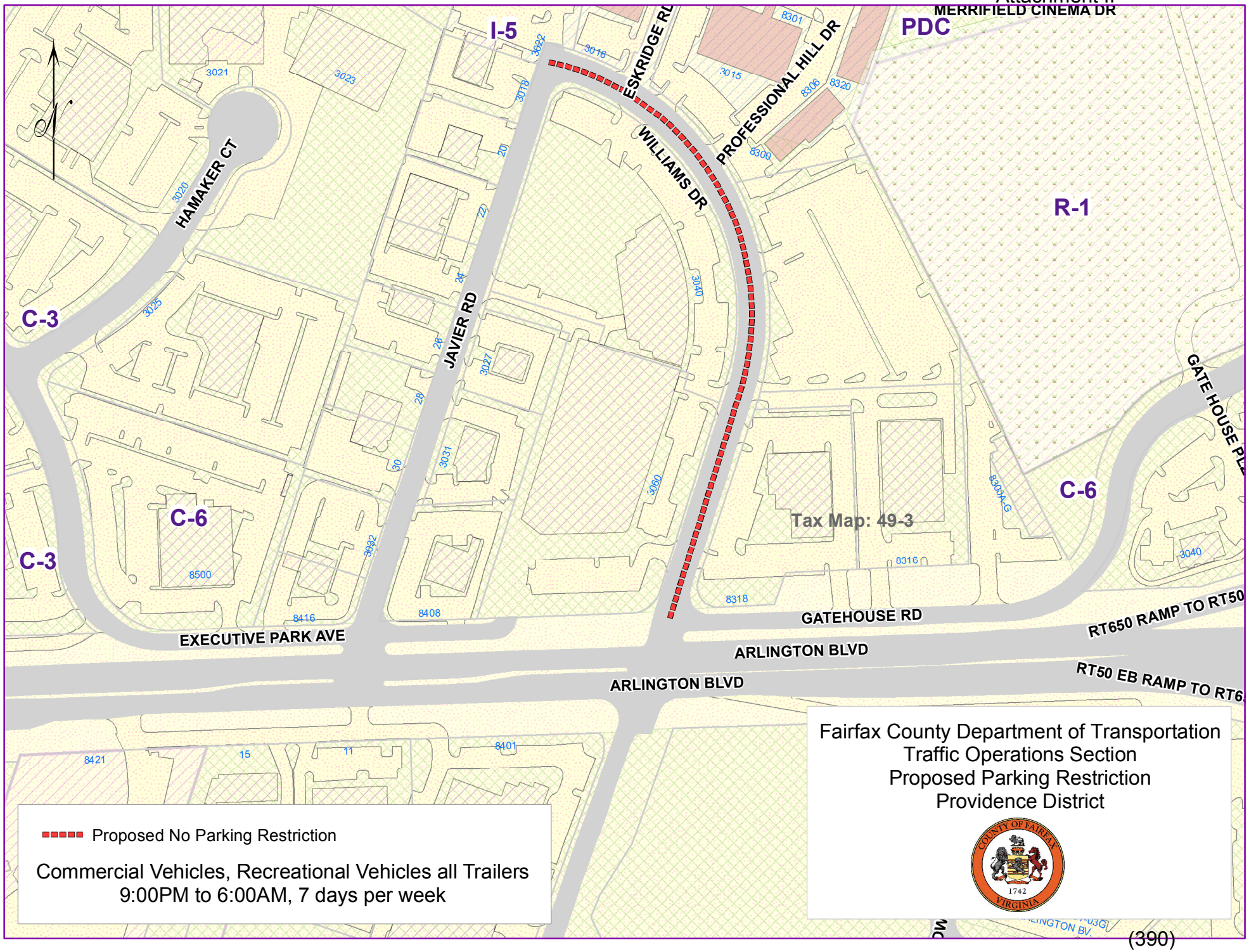
PROPOSED CODE AMENDMENT

THE CODE OF THE COUNTY OF FAIRFAX, VIRGINIA
APPENDIX R

Amend *The Code of the County of Fairfax*, *Virginia,* by adding the following to Appendix R, in accordance with Section 82-5-37:

Williams Drive (Route 5162).
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on Williams Drive from Arlington Boulevard to Javier Road from 9:00 p.m. to 6:00 a.m., seven days per week.

Attachment II



Proposed No Parking Restriction

Commercial Vehicles, Recreational Vehicles all Trailers
9:00PM to 6:00AM, 7 days per week

Fairfax County Department of Transportation
Traffic Operations Section
Proposed Parking Restriction
Providence District

Board Agenda Item
September 10, 2013

ADMINISTRATIVE - 13

Authorization to Advertise a Public Hearing to Establish Parking Restrictions on Penrose Place (Sully District)

ISSUE:
Board authorization to advertise a public hearing to consider a proposed amendment to Appendix R of *The Code of the County of Fairfax, Virginia* (Fairfax County Code), to establish parking restrictions on Penrose Place in the Sully District.

RECOMMENDATION:
The County Executive recommends that the Board authorize advertisement of a public hearing for October 8, 2013, at 4:00 p.m. to consider adoption of a Fairfax County Code amendment to Appendix R, to prohibit commercial vehicles, as defined in Section 82-5-7 of the Fairfax County Code, recreational vehicles and all trailers from parking on Penrose Place from Lee Road to 14339 Penrose Place on the south side and from Lee Road to Chantilly Crossing Lane on the north side, from 7:00 p.m. to 7:00 a.m., seven days per week.

TIMING:
The Board of Supervisors should take action on September 10, 2013, to provide sufficient time for advertisement of the public hearing on October 8, 2013, at 4:00 p.m.

BACKGROUND:
Fairfax County Code Section 82-5-37(5) authorizes the Board of Supervisors to designate restricted parking in non-residential areas where long term parking of vehicles diminish the capacity of on-street parking for other uses.

The property owners of various parcels along Penrose Place have contacted the Sully District Office and requested restrictions to prohibit commercial vehicles as defined in Section 82-5-7 of the Fairfax County Code, recreational vehicles, and all trailers from parking on Penrose Place from Lee Road to 14339 Penrose Place on the south side and from Lee Road to Chantilly Crossing Lane on the north side, from 7:00 p.m. to 7:00 a.m., seven days per week.

Out-of-area businesses are parking their commercial vehicles and trailers for long periods of time resulting in limited parking for employees and business customers.

Based on staff observations of Penrose Place, long term parking of out-of- area vehicles is diminishing the capacity of on-street parking for use by the local business community.

FISCAL IMPACT:
The cost of sign installation is estimated at $1,500 to be paid out of Fairfax County Department of Transportation (FCDOT) funds.

ENCLOSED DOCUMENTS:
Attachment I: Amendment to the Fairfax County Code, Appendix R (General Parking Restrictions)
Attachment II: Area Map of Proposed Parking Restriction

STAFF:
Robert A. Stalzer, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Eric Teitelman, Chief, Capital Projects and Operations Division, FCDOT
Maria Turner, Sr. Transportation Planner, FCDOT

Attachment I

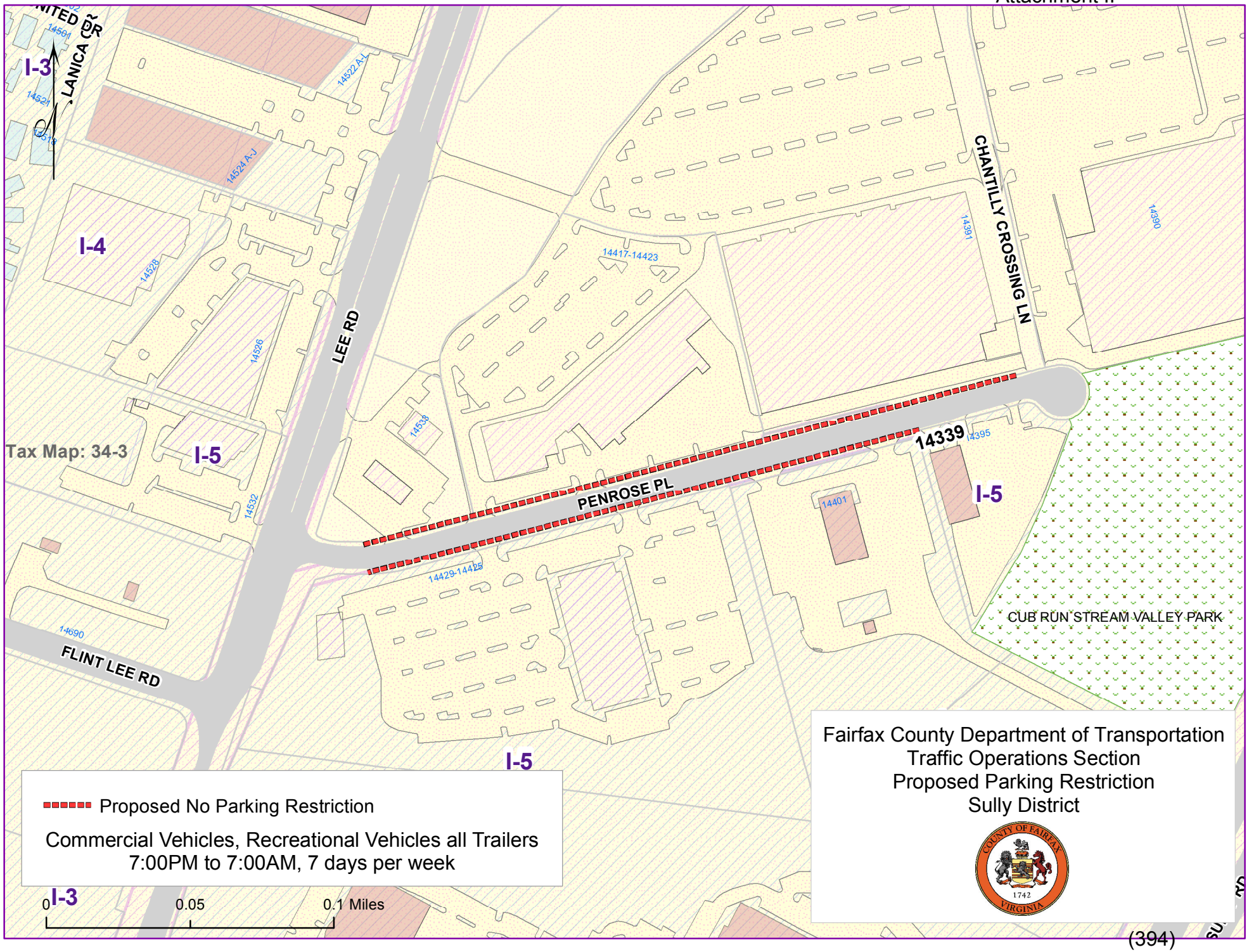
PROPOSED CODE AMENDMENT

THE CODE OF THE COUNTY OF FAIRFAX, VIRGINIA
APPENDIX R

Amend *The Code of the County of Fairfax*, *Virginia,* by adding the following to Appendix R, in accordance with Section 82-5-37:

Penrose Place (Route 911).
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on Penrose Place from Lee Road to 14339 Penrose Place on the south side and from Lee Road to Chantilly Crossing Lane on the north side, from 7:00 p.m. to 7:00 a.m., seven days per week.

Attachment II



Board Agenda Item
September 10, 2013

ADMINISTRATIVE – 14

Extension of Review Period for 2232 Review Application (Mason District)

ISSUE:
Extension of the review period for a specific 2232 Review application to ensure compliance with the review requirements of *Section* 15.2-2232 of the *Code of Virginia.*

RECOMMENDATION:
The County Executive recommends that the Board extend the review period for the following application: Application FS-M13-13.

TIMING:
Board action is required on September 10, 2013, to extend the review period of the application noted above before it expires on September 12, 2013.

BACKGROUND:
Subsection B of *Section* 15.2-2232 of the *Code of Virginia* states: "Failure of the commission to act within sixty days of a submission, unless the time is extended by the governing body, shall be deemed approval." Subsection F of *Section* 15.2-2232 of the *Code of Virginia* states: "Failure of the commission to act on any such application for a telecommunications facility under subsection A submitted on or after July 1, 1998, within ninety days of such submission shall be deemed approval of the application by the commission unless the governing body has authorized an extension of time for consideration or the applicant has agreed to an extension of time. The governing body may extend the time required for action by the local commission by no more than sixty additional days."

The Board is asked to extend the review period for this 2232/FS application; which was accepted for review by DPZ on June 14, 2013. This application is for a telecommunications public facility and thus, is subject to the State Code provision that the Board may extend the time required for the Planning Commission to act on this application by no more than sixty additional days. The review period for the following application should be extended as follows:

FS-M13-13	New Cingular Wireless, PCS, LLC 6362 Lincolnia Road, Alexandria

Board Agenda Item
September 10, 2013

Mason District
Extend to November 12, 2013

The need for the full time of this extension may not be necessary, and is not intended to set a date for final action.

FISCAL IMPACT:
None

ENCLOSED DOCUMENTS:
None

STAFF:
Robert A. Stalzer, Deputy County Executive
Fred R. Selden, Director, Department of Planning and Zoning, DPZ
Chris B. Caperton, Chief, Facilities Planning Branch, Planning Division, DPZ
Connie A. Maier, Planner, Facilities Planning Branch, Planning Division, DPZ

Board Agenda Item
September 10, 2013

ACTION - 1

Approval of the Update to the Contractual Agreement for the Northern Virginia Regional Identification System (NOVARIS)

ISSUE:
Board of Supervisors' approval of the Northern Virginia Regional Identification System (NOVARIS) Contractual Agreement update of 2013 between the Police Departments of Fairfax County, Alexandria, Arlington, City of Fairfax, City of Falls Church, Prince William County and the Loudoun County Sheriff's Office.

RECOMMENDATION:
The County Executive recommends that the Board authorize the County Executive to sign the Contractual Agreement of 2013 for NOVARIS.

TIMING:
Board action is requested on September 10, 2013.

BACKGROUND:
Fairfax County initially received an $8.4 million award in 2005 to begin the upgrade of three existing regional Automated Fingerprint Identification Systems (AFIS) across Northern Virginia, Washington D.C., and Montgomery and Prince George's County, Maryland. The upgrade for Northern Virginia provided for additional capabilities, including LiveScan for the arrest and booking process, and access to a regionally-shared MugShot system with facial recognition capability. The project upgrade for the NOVARIS is near completion and requires an update to the existing contractual agreement originally signed in October of 1983.

Language in the agreement has been added to reference the broader term "biometric identification systems", thus allowing for the inclusion of the Mugshot system; additionally, shared costs have been modified to account for Loudoun County's participation in the program.

FISCAL IMPACT:
None.

Board Agenda Item
September 10, 2013

ENCLOSED DOCUMENTS:
Attachment 1 – Contractual Agreement for the Northern Virginia Regional Identification System

STAFF:
David M. Rohrer, Deputy County Executive
Lt. Colonel Edwin C. Roessler Jr., Chief of Police
Karen L. Gibbons, Senior Assistant County Attorney

CONTRACTUAL AGREEMENT

THIS AGREEMENT, dated this_____ day of_____ 2013, by and among the City of Alexandria, the County of Arlington, the City of Fairfax, the County of Fairfax, the City of Falls Church, County of Loudoun, and the County of Prince William, hereinafter known as participants, all of which being separate and distinct municipal corporations or political subdivisions of the Commonwealth of Virginia:

WITNESSETH:

WHEREAS, the governing bodies of the participants have appropriated funds, in proportional amounts based on a defined formula, necessary to sustain the acquisition and operation of the Northern Virginia Regional Identification System (hereinafter referred to as NOVARIS); and

WHEREAS, agreement is needed between the participants concerning their respective rights and responsibilities in the establishment and operation of the system; and

WHEREAS, NOVARIS has become an integral part of the investigative and record-keeping functions of the law enforcement agencies of all participating jurisdictions; and

WHEREAS, the participants will be required to provide proportional funding for the acquisition, operation, and maintenance of NOVARIS:

NOW, THEREFORE, the above named participants hereby covenant and agree as follows:

ARTICLE I - Project Title and Purpose

The participants previously noted in this contractual agreement desire to continue or maintain a regional project known as the Northern Virginia Regional Identification System (NOVARIS). The purpose of this project is to purchase and operate automated biometric identification systems. These systems use state-of-the-art computer technology to encode, match and identify biometric information. The experience of other law enforcement agencies using similar technology indicates that this project will provide a definitive increase in investigative and identification capability to the participants.

ARTICLE II – Share of Costs

The participating jurisdictions will share costs associated with NOVARIS acquisition and operation based on the citizen population and the police population of each jurisdiction. These cost shares are represented in the following schedule:

City of Alexandria	9.00%
County of Arlington	11.44%
City of Fairfax	2.00%
County of Fairfax	52.00%
City of Falls Church	1.00%
County of Prince William	12.75%
County of Loudoun	11.81%

The sharing of costs may be reconfigured from time to time, with the consent of the Chief of Police of Fairfax County and the majority approval of the members of the Advisory Board. In no event shall the sharing of costs be reconfigured more than once during a given fiscal year. A cost reconfiguration made during a fiscal year shall be applicable to costs assessed for the subsequent fiscal year/years. Any disputes arising over the consideration of cost reconfiguration shall be resolved in accordance with Article X, Resolution of Disputes, of this agreement.

ARTICLE III - NOVARIS Advisory Board

The Chiefs of Police of the participating jurisdictions and the Sheriff of Loudoun County, or their designated representative, shall serve as members of an Advisory Board. Fairfax County will exercise administrative control over the NOVARIS operation, at the direction of the Fairfax County Chief of Police in conjunction with the Advisory Board. If problems occur with the administration of the system, the Advisory Board will be convened to seek resolution of the disputed issue. If problems cannot be resolved at the Advisory Board level, the procedures outlined in Article X, Resolution of Disputes, of this agreement shall be followed.

ARTICLE IV – Project Director

The administration of the NOVARIS Center shall be provided by a Project Director. The Project Director shall be responsible to the Chief of Police of Fairfax County, and authority for this position shall be derived from the Chief of Police of Fairfax County and the Advisory Board.

ARTICLE V – Administration

The NOVARIS Project Director shall be responsible for all administrative requirements of the operation of NOVARIS. The Director shall prepare and provide all necessary and reasonable reports, prepare budget proposals and administer the Center's procedures as defined in the NOVARIS Standard Operating Procedures.

ARTICLE VI – Ownership

All equipment and supplies purchased through the NOVARIS budget shall become commonly owned items among the participating jurisdictions. Ownership will be established at a rate equal to the percentage of individual participants' contribution to the NOVARIS budget.

In the event that a participating jurisdiction wishes to terminate involvement in the system, written notification of such intent shall be provided to the NOVARIS Advisory Board. Funds previously paid to support the NOVARIS system prior to termination shall not be returned to a terminating participant unless the system is sold in total.

If the system is sold in total, proceeds of the sale shall be divided among the participants, past and present, on a proportional basis of support provided to the system during the period of participation.

A jurisdiction wishing to join NOVARlS may be able to do so if such participation is agreed to by a majority of the members of the Advisory Board. Financial contribution of a new participant shall be subject to agreement between the Advisory Board and the jurisdiction.

ARTICLE VII - Location

The NOVARIS Center shall be physically located at 4890 Alliance Drive, Fairfax, Virginia, 22030. This site, known as the McConnell Public Safety Transportation Operations Center, shall house NOVARIS. This location has been agreed to by the participants, and is being provided by Fairfax County as an in-kind contribution in addition to the direct cost share to be paid by Fairfax County, as noted in Article II.

The location of the NOVARIS site may be changed with the concurrence of the Chief of Police of Fairfax County, or upon demand of the County Executive of Fairfax County, or upon demand of the Fairfax County Board of Supervisors.

The costs associated with the use of this site, to be borne by Fairfax County, include the following: (1) rent; (2) janitorial services; (3) utilities; (4) air conditioning and heat; and (5) building insurance.

Any costs associated with modification of the existing site will be shared proportionally by the participating jurisdictions.

Insurance coverage of the physical site shall be provided in accordance with Fairfax County procedures.

Insurance coverage for the computer system equipment shall be provided by a rider on the Fairfax County computer equipment policy; costs associated with the specific rider shall be proportionally prorated among the participants.

ARTICLE VIII - Operating Procedures

The NOVARIS Advisory Board and Project Director shall establish a written Standard Operating Procedure to provide administrative policies to the NOVARIS operation. It shall be the responsibility of the Project Director to ensure that Center operations are in accordance with these procedures.

Additionally, each participating jurisdiction is encouraged to develop and maintain a Standard Operating Procedure for its day-to-day work activity.

ARTICLE IX – Purchases

Those items which are required for the operation of the NOVARIS system shall be procured through the Fairfax County Purchasing and Supply Management Agency. These items shall be paid for by funds contributed to the NOVARIS budget fund.

Procurement of individual participating agency office supplies shall be the responsibility of that agency.

ARTICLE X – Resolution of Disputes

Any disagreements arising between or among system participants related to the operation, upgrading, or cost sharing shall be resolved by the Project Director, Advisory Board, and finally, by the Chief Executive Officers of involved jurisdictions, in this defined order. In the event disputed issues cannot be resolved among the Chief Executive Officers of the participating jurisdictions, a majority vote of the Chief Executive Officers shall be used to resolve the issue. Votes shall be equal to the proportion of cost contributions, as defined in Article II, e.g., City of Alexandria shall have 9.00 votes.

ARTICLE XI - Term of Agreement

This agreement shall be effective _____, 20___ , supersedes the agreement entered into on October 26, 1983, and shall continue until dissolved by agreement of all participants. The terms of this agreement are contingent upon continued appropriations to support NOVARIS by the governing boards of each participating jurisdiction.

ARTICLE XII – Entire Agreement

This agreement constitutes the entire contractual arrangement among the aforementioned participants. Any changes or additions shall be reduced to writing, and accepted and signed by all parties.

Approved as to form:

City Manager Date
City of Alexandria, Virginia

County Manager Date
Arlington County, Virginia

City Manager Date
City of Fairfax, Virginia

County Executive Date
Fairfax County, Virginia

City Manager Date
City of Falls Church, Virginia

County Administrator Date
Loudoun County, Virginia

County Executive Date
Prince William County, Virginia

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ACTION - 2

Establishment of a Revised Membership for the Mosaic District Community Development Authority Board (Providence District)

ISSUE:
Board adoption of a revised membership for the Mosaic District Community Development Authority Board.

RECOMMENDATION:
The County Executive recommends that the Board approve the revised membership of the Mosaic District Community Development Authority.

TIMING:
Action on September 10, 2013, permits a full membership of the CDA Board to hold meetings this fall.

BACKGROUND:
On April 27, 2009, the Board created the Mosaic District Community Development Authority (CDA), pursuant to the provisions of title 15.2, Chapter 51 of the Code of Virginia 1950, as amended. The provisions of the petition that established the CDA, state that the CDA Board shall be comprised of five (5) members appointed by the Board of Supervisors pursuant to Virginia Code Section 15.2-5113, serving four year staggered terms.

The Board previously constituted the CDA Board as follows:

- The Providence District Supervisor
- An additional Supervisor appointed by the Board
- Director, Office of Community Revitalization
- A citizen representative
- A representative of the developer

Due to a recent decision by the Supreme Court of Virginia related to conflicts of interest, it is suggested that, pending further clarification of the decision, the Board reconstitute the CDA Board as follows:

- A District Supervisor
- Director, Office of Community Revitalization (OCR)
- County Debt Coordinator

- A citizen representative
- A representative of the developer

Membership will remain as staggered four year terms, with the terms for the District Supervisor, Director of OCR and the citizen representative expiring on January 26, 2014, and the terms for the County Debt Coordinator and the representative of the developer expiring on January 26, 2016.

FISCAL IMPACT:
None

ENCLOSED DOCUMENTS:
None

STAFF:
Barbara A. Byron, Director, Office of Community Revitalization

Board Agenda Item
September 10, 2013

ACTION – 3

Approval of a Draft Board of Supervisors' Meeting Schedule for Calendar Year 2014

ISSUE:
Board approval of a draft meeting schedule for January through December, 2014.

RECOMMENDATION:
The County Executive recommends that the Board of Supervisors approve the draft meeting schedule for January through December, 2014.

TIMING:
The Board should take action on September 10, 2013, in order that accommodations to implement this calendar can proceed in advance of January.

BACKGROUND:
The *Code of Virginia*, Section 15.2-1416, requires the governing body to establish the days, times and places of its regular meetings at the annual meeting, which is the first meeting of the year. Therefore, the schedule for the entire 2014 calendar is presented for Board approval. The section further states that "meetings shall be held on such days as may be prescribed by resolution of the governing body but in no event shall less than six meetings be held in each fiscal year."

Scheduled meetings may be adjourned and reconvened as the Board may deem necessary, and the Board may schedule additional meetings or adjust the schedule of meetings approved at the annual meeting, after notice required by Virginia law, as the need arises.

At the first meeting of the Board of Supervisors in January, staff will bring the 2014 meeting calendar to the Board for formal adoption.

ENCLOSED DOCUMENTS:
Attachment 1 - January-December, 2014 Schedule for Board of Supervisors' Meetings

STAFF:
Catherine A. Chianese, Assistant County Executive and Clerk to the Board of Supervisors

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2014 Board of Supervisors Meeting Schedule

DRAFT

January 14, 2014
January 28, 2014
February 11, 2014
February 25, 2014 **Public Comment**
March 4, 2014
March 25, 2014
April 8, 2014 **9:30 to 6:00 pm Board Meeting** **6:00 pm Budget Public Hearing**
April 9 - April 10 , 2014 **3:00 pm – Budget Public Hearings**
April 22, 2014 **Budget Markup**
April 29, 2014 **Includes Budget Adoption/** **Public Comment**
May 13, 2014

June 3, 2014
June 17, 2014 **Public Comment**
July 1, 2014
July 29, 2014 **Public Comment**
September 9, 2014
September 23, 2014
October 7, 2014
October 28, 2014 **Public Comment**
November 18, 2014
December 2, 2014 **Public Comment**

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Board Agenda Item
September 10, 2013

ACTION – 4

Presentation of the Delinquent Tax List for Tax Year 2012 (FY 2013)

ISSUE:
Presentation to the Board of the annual list of delinquent real estate, personal property, and business, professional, occupational license (BPOL) taxes; presentation of the annual list of small uncollectable accounts. Review of delinquent collection program.

RECOMMENDATION:
The County Executive recommends that (1) staff continue to pursue the collection of delinquent taxes found in Attachment A, and continue collection of non-tax delinquencies; and, (2) the Board remove certain small uncollectable overdue accounts listed in Attachments D and E pursuant to Virginia Code § 58.1-3921.

TIMING:
Routine.

BACKGROUND:
In accordance with State Code, the Department of Tax Administration (DTA) has prepared a list of delinquent taxpayers for tax year 2012 (FY 2013) for Board consideration (Attachment A). DTA and its agents will continue to pursue the collection of all taxes and other charges due that are within the statute of limitations in accordance with Virginia Code §§ 58.1-3933 and 58.1-3940.

Presented below is a summary of delinquent taxes still outstanding for Tax Year 2012, as of June 30, 2013:

Tax year 2012 (FY 2013)

	Accounts	Local Tax Amount
Real Estate	2,847	$ 7,539,979
Personal Property – Vehicles	38,505	$ 5,294,317
Business Personal Property	1,932	$ 1,757,752
Public Service Corp. Properties	6	$ 15,869
BPOL	2,389	$ 3,085,284
Total	45,679	$ 17,693,201

The list being presented to the Board is a "snapshot" of outstanding delinquent taxes as of June 30, 2013. This includes delinquent taxpayers who may already be on a payment plan, and delinquencies of taxpayers in bankruptcy.

For perspective, the total amount of all unpaid current year taxes, or $17.69 million, represents less than 1% of the levy for Tax Year 2012 (FY 2013). This is consistent with prior years. Of the $5,294,317 in delinquent vehicle taxes, $1,410,145 is from business owned and used vehicles, and $3,884,172 is from personal property taxes on personally owned and used vehicles.

With outstanding support from the Sheriff's Office, the Police Department and the Office of the County Attorney, DTA and its collection agents utilized a broad array of collection tools throughout FY 2013 to pursue delinquent accounts. Among other things, these tools include the use of computer-generated letters; telephone calls; statutory summons authority; payment plans; bank and wage liens; set-offs against income tax refunds; booting and towing of vehicles; and, the seizure of equipment.

In accordance with Virginia law, DTA also has an agreement with the Virginia Department of Motor Vehicles (DMV) whereby vehicle registrations are withheld from citizens who have delinquent personal property taxes. A total of 56,568 accounts with DMV holds were successfully collected in FY 2013.

While DTA again aired the names of certain delinquent taxpayers on cable TV's Channel 16, the utility of this program has diminished in the wake and rapidity of delinquent account placements with private collection agencies. Based on this, staff will discontinue the Channel 16 airing unless a future need were to arise. Staff time can be more effectively used in researching and reconciling accounts already placed for collection.

As noted, DTA engages in major outsourcing for delinquent collections. Pursuant to Virginia Code § 58.1-3958 and by prior Board action, the private collection agents are compensated by a 20% fee added to the total delinquency, enabling the County to reduce program expenditures. DTA still provides substantial account research, reconciliation, adjudication and oversight in support of the collection efforts. Outsourcing the bulk of collections continues to be a very productive and successful partnership.

The collection agent for personal property, BPOL and parking tickets is a Fairfax County company, Nationwide Credit Corporation (NCC). NCC collected $11.4 million in delinquent personal property taxes and vehicle registration fees and $1.3 million in delinquent BPOL revenue in FY 2013.

These results were achieved through a robust collection program that included more than 1 million telephone calls using automated outbound dialing technology. In addition, NCC sent more than 119,000 dunning letters, issued approximately 18,000 bank and wage liens, processed just over 2,200 boot and tow orders in concert with the Sheriff's Office, and pursued judgments in General District Court. DTA staff provides the review and direct authorization of all NCC seizure activities.

In addition to delinquent taxes, parking ticket collections are also outsourced. Citation Management, a division of Duncan Solutions, handles front end ticket processing and current collections for DTA. NCC pursues the collection of delinquent parking tickets.

FY 2013 ticket collections totaled approximately $2.8 million. Part of this revenue came from more than 6,300 DMV holds successfully collected in FY 2013. NCC collected $553,922 in delinquent tickets based on more than 88,000 telephone calls using automated outbound dialing technology. In addition, NCC sent more than 7,200 dunning letters and issued more than 1,390 bank and wage liens for parking tickets. A significant amount of the uncollected revenue is from single-issue tickets and from violators outside of Fairfax County (see Attachment B).

The private law firm of Taxing Authority and Consulting Services (TACS), based in Richmond, Virginia, handles delinquent real estate accounts. TACS collected approximately $8.5 million in delinquent real estate taxes for Fairfax County in FY 2013. Grass Mowing Fees are also collected along with real estate taxes. A copy of the last quarterly grass mowing report is provided in Attachment C.

As part of its delinquent real estate effort, TACS filed suit on 19 delinquent parcels, collecting approximately $418,000. Of these properties, 8 vacant parcels were sold at auction, 9 are being paid via a payment plan, and 2 are still pending. Finally, TACS also collected $87,023 in FY 2013 for contempt of court fines and civil penalties for zoning violations.

Unfortunately, TACS has been unable to achieve any collections against the $1.6 million in long-standing developer default accounts referred at the end of FY 2011. TACS reports that all 26 of the businesses that were referred for collection previously went out of business and no assets appear to exist that can be leveraged for payment. During FY 2013, one of the accounts was recalled by the County Attorney's Office after a new developer took over the project and completed the items that led to the default. TACS will retain the 25 remaining accounts, totaling $1.57 million, in case new information becomes available at a later date that might facilitate collection. In the absence of any asset information however, TACS reports that these Accounts appear to be uncollectable. Future information will only be reported in the event some collection is achieved.

Although most of the County Attorney collections have likewise been outsourced to TACS, the County Attorney's Office still directly handles bankruptcy collection cases. A total of 212 new bankruptcy collection cases were opened in FY 2013, and $1.04 million was collected from all bankruptcy matters.

Thanks to all of these combined efforts, the County collected more than $21.8 million in net delinquent taxes in FY 2013 for all prior tax years. In partnership with its private collection agents, staff will continue collection efforts in FY 2014 on all delinquent taxes and other charges authorized by law.

Strong collection efforts are also reflected in the current year tax collection rates:

	FY 2013
Real Estate	99.68 %
Personal Property (local share)	98.00 %
BPOL	98.50 %

On July 31, 2012, the Board adopted new ordinance sections that established a uniform bad check fee of $50, and instituted late payment penalties and interest for delinquent non-tax receivables. Implementation of the bad check fee became effective immediately. The late payment penalty and interest for non-tax delinquencies became effective on an agency-by-agency basis depending on the capacity and cost-effectiveness of necessary changes to agency billing systems. In the meantime, penalties and interest are automatically added to the delinquent account once referred to NCC.

DTA has worked with agencies to standardize billing notices to warn of the additional expense and potential collection actions associated with delinquencies. Regular placements of delinquencies to NCC are now done following the statutory period of 180 days for the principle agencies to include SACC, CSB, Fire, Police, and Health Department. In FY 2013, NCC collected $322,890 in non-tax revenue, of which $41,369 represents late payment penalties, interest and administrative collection fees. This is in addition to the collection fees paid by the debtor to NCC. Based on the time necessary to review billing operations, system capacity and to analyze the statute of limitations for the existing delinquencies, statutory collection actions such as bank and wage liens did not begin in earnest until the third quarter of FY 2013. The FY 2013 collection effort included over 50,000 telephone calls using automated outbound dialing technology, more than 4,000 dunning letters, and over 700 bank and wage liens. NCC has also established payment plans for 573 delinquent account holders. Greater collection activity is anticipated during FY 2014.

In FY 2013, the Department of Public Works & Environmental Services (DPW&ES) was also able to accommodate in-house billing changes for waste disposal fees and collected over $16,500 in late payment penalties and interest.

Based on the small unit value of library delinquencies, and the unique nature of this debt, the Fairfax County Public Library (FCPL) continues to use a separate collection agent for its delinquent fees, Unique National Collections (Unique). Also, given the very small unit value, the FCPL did not implement the late payment penalties and interest. However, the FCPL did increase its bad check fee to the uniform amount of $50. It has also lowered the dollar threshold for placing delinquencies with Unique, and it now refers unpaid fines for collection (in the past library materials also had to be outstanding for a delinquency to be referred). The FCPL changes went into effect July 1, 2013.

Also this past July, the Fairfax County Redevelopment and Housing Authority (FCRHA) signed a Memorandum of Understanding with DTA to adopt the uniform bad check fee along with the late payment penalties and interest, subject to leases and other federal restrictions, as applicable. Billing system changes can be accommodated at no additional cost. Based on the MOU, FCRHA delinquencies will also be referred to NCC for collection.

Finally, Virginia Code §§ 58.1-3921 and 58.1-3924 state that upon submission to the Board of a list of small tax amounts for which no bills were sent (Attachment D) and a list of small uncollected balances of previously billed taxes (Attachment E), credit shall be given for these uncollected taxes:

	Accounts	Dollars
Real Estate	8,545	$ 2,231
Personal Property	19,384	$ 43,721
TOTAL	27,929	$ 45,952

The Virginia Code provides that such small tax accounts be “less than twenty dollars each.” The lists presented in Attachments D and E average $1.64 per account.

FISCAL IMPACT:
None. Collection agents collect their fee directly from the delinquent taxpayers, not to exceed 20% of the amount collected plus administrative costs as specified by law.

ENCLOSED DOCUMENTS:
Attachment A - Delinquent Taxpayers for Tax Year 2012 (FY 2013)
Attachment B - Statistical Profile of Unpaid Tickets

Board Agenda Item
September 10, 2013

Attachment C - Status of Grass Mowing Collections
Attachment D - Tax Year 2012 accounts valued less than $5 that were not billed
Attachment E - Tax Year 2012 "balance due" accounts of less than five dollars
(Attachments A, D and E listed above are computer printouts which will be made available in the Board Conference Room on September 10, 2013, from 9:00 A.M. - 4:30 P.M.)

STAFF:
Susan W. Datta, Chief Financial Officer
Kevin C. Greenlief, Director, Department of Tax Administration
E. Scott Sizemore, Director, Revenue Collection Division, DTA
Juan B. Rengel, Assistant Director, Revenue Collection Division, DTA
Nancy F. Loftus, Assistant County Attorney

ATTACHMENT B

Unpaid Ticket Category, FY 2013	Tickets	Amount
In Fairfax	11,996	1,042,200
In VA/Outside FFX	2,524	227,954
Outside VA	6,080	555,879
Subtotal:	**20,600**	**1,826,034**
Average Amount Due Per Ticket:		**$89**

Unpaid Ticket Aging Report - FY 2013	Tickets	Amount
< 60 days	3,504	$255,711
61-90 days	1,116	$89,060
91-120 days	747	$59,859
120-150 days	785	$65,268
150-180 days	883	$70,048
Over 180 days	13,565	$1,286,088
	20,600	**$1,826,034**

[Excludes tickets still pending DMV match]

(As of 6/30/2013)

County of Fairfax, Virginia

MEMORANDUM

Date: July 8, 2013

To: Jeff Blackford, Director
Department of Code Compliance

From: Juan Rengel, Assistant Director
Revenue Collection Division
Department of Tax Administration

Subject: Grass Mowing Collections – Quarterly Status Report

The following is the status of our Grass Mowing Collections in support of DPW&ES since program inception in April, 2008:

- DTA has received a total of 701 invoices from DPW&ES, totaling $185,822
- DTA has collected on 640 invoices totaling $171,542
- DTA is still pursuing collection on 61 invoices totaling $14,280
- Collection rate for mowing charges referred to DTA is currently 92%

Delinquent mowing fees are included in our monthly real estate delinquent billing process. DTA will also attempt to collect on these fees using a combination of telephone calls, collection letters, bank liens, wage liens and boot/tows before referring unpaid fees to our collection attorney for further collection action.

It is my understanding that DPW&ES is to provide the Board with a status on collections as appropriate. Our next report will be sent to you in October 2013. Please contact Lucas Baranyk of my staff, at 703-324-2409, if you have any questions in this regard.

LB/jbr

DEPARTMENT OF TAX ADMINISTRATION (DTA)
REVENUE COLLECTION DIVISION
12000 Government Center Parkway, Suite 223
Fairfax, VA 22035
Phone: 703-324-2550
TTY 703-222-7594; Fax: 703-324-3935
www.fairfaxcounty.gov/dta

cc: Susan W. Datta, Chief Financial Officer
Robert A. Stalzer, Deputy County Executive
David Rohrer, Deputy County Executive
Kevin C. Greenlief, Director, DTA
E. Scott Sizemore, Director, Revenue Collection Division, DTA
Kimberly Sebunia, Collections Manager, DTA
Lucas Baranyk, Delinquent Collection Manager, DTA
James W. Patteson, Director, DPW&ES
Steve Aitcheson, Director, Maintenance & Stormwater Management Div., DPW&ES
Randy Bartlett, Director, Stormwater Management Program, DPW&ES
Karen McClellan, Operations Manager, Code Compliance, DCC
Steve Mason, Supervisor, Code Compliance, DCC
Cathy Wenk, Management Analyst III, DPW&ES
Janet L. Grubb-Webber, Engineer III, DPW&ES
Marcia Wilds, Revenue & Economic Analysis Coordinator, DMB
Nancy Loftus, Assistant County Attorney, CAO

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Board Agenda Item
September 10, 2013

ACTION - 5

Approval of a License Agreement Between Fairfax County and George Mason University Related to the Operation of Bus Service at the Burke Centre Virginia Railway Express Station (Braddock District)

ISSUE:
The Department of Transportation is seeking the Board of Supervisor's approval of a License Agreement with George Mason University (GMU) to expand GMU's shuttle bus operations by providing bus service between the GMU campus and the Burke Centre Virginia Railway Express (VRE) Station.

RECOMMENDATION:
The County Executive recommends that the Board approve the attached License Agreement with GMU and authorize the County Executive to execute the finalized agreement on behalf of Fairfax County.

TIMING:
Board action is requested on September 10, 2013, to allow GMU shuttle buses ingress and egress to the Burke Centre VRE Station beginning on September 16, 2013, to serve GMU students and employees.

BACKGROUND:
GMU approached the County with its desire to expand its shuttle operations by providing shuttle bus service between GMU campus located at 4400 University Drive, Fairfax, Virginia 22030 and the Burke Centre VRE Station. Fairfax County owns the property on which the Burke Centre VRE Station is located. It includes a large parking garage, as well as a bus loop with three bus bays. There is one unused bus bay at the Burke Centre VRE Station that GMU seeks to use for its shuttle service operations. The County has determined that it would further the interest of its citizens and businesses to allow GMU access to the unused bus bay at the Burke Centre VRE Station as further provided in this License Agreement.

County staff negotiated a License Agreement with GMU. This agreement permits GMU shuttle buses access to and from the Burke Centre VRE Station bus loop and provide expanded transit service to GMU students and staff. Negotiations between the two parties resulted in a three year agreement which identifies bus stop locations,

routing and schedules for GMU's shuttle buses. The License Agreement contains provisions for liability insurance as required by the County's Risk Management Division.

FISCAL IMPACT:
There is no fiscal impact associated with the agreement.

ENCLOSED DOCUMENTS:
Attachment I: Proposed License Agreement with George Mason University Related to the Operation of Bus Service at the Burke Center VRE Station.

STAFF:
Robert A. Stalzer, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Dwayne Pelfrey, Chief, Transit Services Division, FCDOT
Christy Wegener, Manager Planning and Operations Section, FCDOT
Malcolm Watson, Fairfax Connector Section, FCDOT

Attachment I

A License Agreement

Between

Fairfax County

and

George Mason University

Dated August 20, 2013

AGREEMENT

This License Agreement made as of the ___th day of _____, 2013, (the "Effective Date"), is made by and between the County of Fairfax (the County), having an address at 4050 Legato Road, Fairfax, Virginia 22033 and George Mason University (GMU), an educational institution and agency of the Commonwealth of Virginia, having an address at 4400 University Drive, Fairfax, Virginia 22030.

WHEREAS, GMU manages various GMU shuttle services, which are currently operated by a contractor.

WHEREAS, GMU has approached the County with its desire to expand its shuttle operations by providing shuttle bus service between GMU campus located at 4400 University Drive, Fairfax, Virginia 22030 (See map #1); and the Burke Centre VRE Station

WHEREAS, Fairfax County owns the property on which the Burke Centre VRE Station Park and Ride facility is located; and

WHEREAS, the County has three bus bays at the Burke Centre VRE Station Park and Ride facility which could be used to accommodate GMU's desired shuttle service (See map #2); and

WHEREAS, there is one unused bus bay at the Burke Center VRE Station that GMU seeks to use for its shuttle service operations; and,

WHEREAS, the County has determined that it would further the interest of its citizens and businesses to allow GMU access to the unused bus bay at the Burke VRE Station Park-and-Ride facility as further provided in this License Agreement.

NOW THEREFORE, herein after the exchange of the good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged by the County and GMU, the parties hereto agree as follows:

ARTICLE ONE
Burke Centre VRE Station

Section 1.01. Subject to all the conditions contained in this License Agreement, the County hereby licenses to GMU the use of "Bus Bay C" (attachment A) at the Burke Centre VRE Station Park and Ride Facility in order to provide shuttle service to and from GMU and the Burke Centre VRE Station.

ARTICLE TWO
Term of the Agreement and Contingencies

Section 2.01. The initial term of this License Agreement shall be for a period of 3 years commencing on the Effective Date and terminating at midnight on the expiration of the third full year of operations ("Initial Term"). The parties may extend this License Agreement by mutual agreement prior to its expiration.

ARTICLE THREE
Use of Burke Centre VRE Station Park and Ride Facilities

Section 3.01. GMU and its current and future contractors are entitled to use one bus bay as designated by the County. Initially the span of service will be from 5:00 a.m. to 10:00 a.m. and 2:00 p.m. to 8:00 p.m., Monday through Friday, throughout the calendar year. Shuttle vehicles are only allowed to pick-up and drop-off passengers at Bus Bay C (See attachment A). There shall be no more than one shuttle vehicle parked at bus bay C at a time and it shall be on the curb no more than 5 minutes.

Section 3.02. GMU shall provide to the County its initial shuttle service route, headways, or service route within five (5) days of the Effective Date. The initial shuttle service route, headways, or service route, and any subsequent changes, shall be subject to prior written approval of the County. GMU will as soon as reasonably possible inform the County of any subsequent, proposed changes to the shuttle service, route or headways within 30 days. All changes shall be subject to prior written approval of the County.

Section 3.03. In the event of an emergency, the County reserves the right to temporarily modify or discontinue the on-Burke Centre VRE route and/or location of the bus stop. The County will notify GMU of the event as soon as reasonably possible. In addition, all GMU shuttle patrons will utilize the designated emergency GMU shuttle bus stop, to be installed by GMU, located on the near side of Premier Court at the entrance of the station (see map 2). The emergency route alignment will entail traveling north on Premier Court, then left under the Roberts Parkway bridge; utilize the bus loop west of the Roberts Parkway bridge; then exit by traveling south on Premier Court.

Section 3.04. The County may modify or discontinue GMU's on-Burke Centre VRE route and pick-up or drop-off location, without cause, on thirty (30) days written notice.

Section 3.05. Patrons of the GMU shuttle are entitled to park in designated areas of the Burke Centre VRE Station parking lot.

ARTICLE FOUR
Facility Usage

Section 4.01. Without limiting the foregoing, GMU agrees, and shall require its current and future contractors to agree in each of their contracts with GMU, that neither GMU nor its current or future contractors shall use or occupy, or permit the Burke Centre VRE Park-and-Ride facility, or any part thereof to be used or occupied

(i) for any unlawful or illegal business, use or purpose,

(ii) for any business, use or purpose involving or producing any "hazardous substance" (as defined in the Comprehensive Environmental Response, Compensation and Liability Act 42 U.S.C. 9601(14), *et. seq*, as amended), "hazardous waste" (as defined in the Resource Conservation and Recovery Act 42 U.S.C., Section 6901, *et seq*., as amended), or "toxic substance" (as defined in the Toxic Substance Control Act, 15 U.S.C. Section 2601*, et seq*. as amended) in excess of legally permitted amounts, including without limitation, asbestos and items or equipment containing polychlorinated biphenyls,

(iii) in any such manner to constitute a nuisance of any kind,

(iv) for any purpose or in any way in violation of any non-residential use permit or certificate of occupancy, or of any applicable insurance policies reasonably required to be maintained by GMU and its current and future contractors under this License Agreement, or

(v) for any purpose or in any way in violation of any applicable governmental laws, ordinances, orders, directives, rules or regulations.

ARTICLE FIVE
Signage

Section 5.01. GMU agrees to reimburse the County for the cost of installation of the shuttle bus stop sign/flag pole. GMU will be responsible for installing ride-a-guide display information frame mounted on the pole based on graphics and trip departure/return information, as well as, contact information at Bus Bay C and the aforementioned emergency shuttle bus stop location.

Section 5.02. GMU agrees, and shall require its current and future contractors to agree in each of their contracts with GMU that GMU and its current and future contractors shall

observe and comply with all conditions and requirements necessary to preserve and/or extend any and all governmental permits that are necessary for the use and operation of the Burke Centre VRE Park-and-Ride facility.

ARTICLE SIX
Alterations of the Burke VRE Station

Section 6.01. With the exception of the requirements of Article Five, GMU agrees, and shall require its current and future contractors to agree in each of their contracts with GMU that GMU and its current and future contractors shall not undertake or permit any material alterations or additions to the Burke Centre VRE Park and Ride facility without first obtaining the written consent of the County, which may be granted or withheld in the County's sole discretion. GMU agrees, and shall require its current and future contractors to agree in each of their contracts with GMU that GMU and its current or future contractors shall bear the cost of all alterations made pursuant to this Section. If GMU and its current and future contractors undertake any alteration, they shall be responsible for all costs and repair or replacement. Nothing in this section shall operate to relieve GMU nor current and future contractors of its obligations described elsewhere in this License Agreement to perform all work in accordance with the applicable laws and regulations and to keep free of any liens arising out of the work undertaken by or on behalf of GMU. In addition, for any material alteration or addition requested to be made by GMU's current or future contractors, the County may require a letter of credit, standard contractor's performance bond or other surety in form and amount and from a financial institution all as reasonably acceptable to the County.

ARTICLE SEVEN
Insurance

Section 7.01. GMU agrees, and shall require its current and future contractors to agree in each of their contracts with GMU that it and/or its current and future contractors shall report within twenty-four hours to the County, in care of; Fleet and Facilities Manager at the Fairfax County Department of Transportation, any accident or incidents that occur on Burke Centre VRE Station property which involves or is related to any of GMU's shuttle service operations, including those operations performed by GMU's contractors, or activities with twenty-four hours of any such occurrence.

Section 7.02. Parking by GMU Shuttle patrons or others, shall be at their own risk and the County will not assume any liability and/or property damage.

Section 7.03. At all times during the term of this License Agreement, at its own cost and expense, GMU agrees to require its current and future contractors in each of their contracts with GMU to purchase and keep in force insurance policies as described in this agreement.

Section 7.04. All of the policies of insurance required by this License Agreement shall

(i) be in form and substance as approved by the County in its reasonable discretion,
(ii) be underwritten only by companies licensed in the Commonwealth of Virginia which have a general policyholder's rating of A- or better (or the equivalent thereof) and a financial rating of VII or better (or the equivalent thereof),
(iii) contain standard waiver of subrogation clauses; and
(iv) provide that they may not be cancelled by the insurer for non-payment of premiums until at least ten (10) days after receipt by the County of the proposed cancellation and that they may not be cancelled for any other reasons until at least thirty (30) days after a receipt by the County of the proposed cancellation, and in any event shall not be invalidated, as to the interests of the County therein, by any act, omission or neglect of GMU and its current and future contractors (other than nonpayment of premiums), which might otherwise result in a forfeiture or suspension of such insurance, including without limitation, the occupation or use of the Burke Centre VRE Station Park and Ride facility for purposes more hazardous than those permitted by the terms of the policy. Copies of all insurance certificates required by this License Agreement (if requested by the County) shall be delivered by GMU to the County within five days after the effective date of this License Agreement. GMU agrees and shall require that its current and future contractors in each of their contracts with GMU agree to renew all insurance policies and provide proof of such renewals, accompanied by evidence of the payment of the premiums thereon to the insurance companies or their agents, which shall all be delivered to the County at least twenty (20) days prior to their respective expiration dates.

Section 7.05. If GMU or its current or future contractors fail to obtain and maintain insurance as required by this License Agreement, the County may terminate this License Agreement. or it may, but shall not be obligated to, obtain and maintain any such insurance coverage and pay premiums therefore. The payment by the County of premiums for any such insurance policy shall not be considered a waiver of the default of GMU with respect to or the right of the County to pursue any other remedy permitted hereunder or by law.

Section 7.06. GMU's and its current and future contractors' Insurance.

(a) GMU shall require that its current and future contractors in each of their contracts with GMU at their sole cost and expense, in connection with GMU's use of the Burke Centre VRE Station Park and Ride facility for GMU shuttle bus service, procure and maintain at such times the following liability insurance in the amounts specified and in the form hereinafter provided for:

(i) Worker's Compensation insurance in amounts as required by applicable law and Employer's Liability insurance in an amount equal to that required by applicable law;

(ii) Automobile Liability insurance in the amount of Two Million Dollars ($2,000,000) per occurrence and Five Million Dollars ($5,000,000) in aggregate covering owned, non-owned, Agreement or hired vehicles for each occurrence for bodily injury or death of persons and/or loss of or damage to property. GMU shall require in each of their contracts with its current and future contractors that such current and future contractors shall each name or require that any policy obtained under this Section have the County named as an additional insured on this policy.

ARTICLE EIGHT
Applicable Laws and Regulations

Section 8.01. Throughout the term of this License Agreement, GMU agrees that it shall and it shall require that its current and future contractors in each of their contracts with GMU at their own cost and expense, observe and comply with all laws, rules, orders, ordinances and regulations of the County, state and federal governments and of each and every department, entity, bureau and duly authorized official thereof and of any successor or future governmental authority, department, entity, bureau and duly authorized official thereof having jurisdiction.

ARTICLE NINE
Exculpation and Liability

Section 9.01. Neither party shall be responsible to the other party for losses and/or claims that result solely from the errors, omissions, or negligent acts of the other party, its officers, employees, volunteers or agents. Nothing herein shall be deemed an expressed or implied waiver of the sovereign immunity of GMU, the Commonwealth or FAIRFAX COUNTY.

Section 9.02. GMU shall require that its current and future contractors, in each of their contracts with GMU, shall include language providing that each such contractor shall indemnify and hold the County harmless from and against all liability, judgments, claims, demands, suits, actions, losses, penalties, fines, damages, costs and expenses, including attorneys' fees including the value of legal services if provided by the County Attorney's Office, of any kind or nature whatsoever, due to or arising out of or from:

(a) Any breach, violation or nonperformance of any covenant, condition, provision or agreement in this License Agreement set forth and contained on the part of such current and future contractors to be fulfilled, kept, served and performed, and

(b) Claims of every kind or nature, arising out of the use and occupancy of the Burke Centre VRE Station (and/or the alteration, etc. thereof) by such current and

future contractors, including without limitation, any damage to property occasioned or arising out of the use and occupancy as contemplated under this Agreement, or any injury to any person, including death resulting at any time therefrom, occurring in or about the Burke VRE Station, excluding the County's gross negligence or willful misconduct.

Section 9.03 This agreement shall not be construed as a waiver of the sovereign immunity of the County, George Mason University, or the Commonwealth of Virginia.

ARTICLE TEN
Inspection and Access

Section 10.01. GMU shall permit, and shall require its current and future contractors to permit the County and its agents to enter the Burke VRE Station for the purposes of (i) inspection; and (ii) making repairs that GMU and or its current and future contractors have neglected or refused to make in accordance with the conditions of this License Agreement upon reasonable advance notice thereof.

Section 10.02. In recognition that the County has offered a portion of the Burke Centre VRE Station Park and Ride facility for GMU and its current and future contractors for transportation related purposes GMU shall also permit, and require that its current and future contractors permit the County, its agents and such independent contractors as the County deems appropriate, to inspect the Burke Centre VRE Station for the purpose of making such inspections, tests, and studies and evaluations as the County deems advisable. The County agrees to use reasonable efforts to avoid unreasonably interfering with GMU and its current and future contractors' occupancy of the Burke Centre VRE Station during the County's inspections, tests, studies and evaluations. The County shall promptly repair any damage to the Burke VRE Station caused solely by the County's investigations, tests, studies and evaluations pursuant to this Section
10.02, subject to the County's appropriation of necessary funds.

Section 10.03. GMU shall give notice to the County of any repairs that need to be made to Bus Bay C within 20 days of execution of this License Agreement.

ARTICLE ELEVEN
Damage and Destruction

Section 11.01. If, during the term of this License Agreement, the assigned bus bay and associated appurtances shall be destroyed or damaged in whole or in part by fire or any other cause, except condemnation, and whether or not such destruction or damage is covered by insurance, GMU shall give immediate notice and shall require that its current and future contractors give to the County immediate notice thereof, and GMU agrees, and shall require its current and future contractors to agree that it and its current and future contractors in each of their contracts with GMU shall promptly and diligently repair, replace and rebuild the same

or cause the same to be repaired, replaced or rebuilt, at least to the conditions thereof immediately prior to such occurrence. GMU agrees, and shall require its current and future contractors to agree in each of their contracts with GMU that if the damage or destruction is caused by an event for which GMU and its current and future contractors are not insured, restoration shall still be made, at GMU and its current and future contractors' sole cost and expense, in accordance with ARTICLE FOUR AND ARTICLE SEVEN of this License Agreement, provided that the County shall not unreasonably withhold its consent to restoration of the surface parking, if GMU causes such restoration to be performed in accordance with the standards set forth in herein. The County shall in no event be called upon to perform or otherwise be held liable for such restoration.

(a) All of such restoration and the performance thereof shall be subject to and shall be performed in accordance with the provisions of ARTICLE FOUR AND ARTICLE SEVEN.

(b) Upon the completion of the restoration, a set of the "as restored" plans shall be delivered by GMU and its current and future contractors to the County.

Section 11.02. If (i) GMU or its current and future contractors shall fail to take reasonable steps to commence restoration within thirty (30) days from the date of such damage and destruction in accordance with the provisions of this License Agreement, or, (ii) having commenced such restoration, GMU and its current and future contractors shall fail to complete it in accordance with such provisions with reasonable diligence, and such failure shall continue for a period of thirty (30) days after notice by the County to GMU and its current and future contractors, the County may, at its option after notice to GMU make and complete such restoration. In such event, and whether or not this License Agreement may have been terminated by reason of any default by GMU and or its current and future contractors, the County shall have the right, as the restoration progresses, to obtain and apply any applicable insurance proceeds to the cost of such restoration.

ARTICLE TWELVE
Assignment and Subletting

Section 12.01. This License Agreement shall not be assigned in whole or in part, without the written consent of both parties.

ARTICLE THIRTEEN
Events of Default

Section 13.01. If any one or more of the following events shall occur:

a) GMU agrees, and shall require its current and future contractors to agree in each of their contracts with GMU that if GMU or its current or future contractors shall default in complying with any term, covenant or condition of this License Agreement and such default in compliance shall continue for a period of thirty

(30) days after notice by the County; or

b) b) This License Agreement is transferred, assigned, or without the County's prior written consent;

then an "Event of Default" shall be deemed to have occurred in which case the County may thereafter serve a written five (5) day notice of cancellation and termination of this License Agreement, upon the expiration of such five (5) days, this License Agreement and the term hereunder shall end and expire. GMU agrees, and shall require its current and future contractors to agree in each of their contracts with GMU, that GMU and its current and future contractors shall then quit and surrender to the County the Burke VRE Station, the improvements and any other improvements and the County may enter into or repossess the same.

ARTICLE FOURTEEN
No Waiver

Section 14.01. The parties hereby expressly agree and acknowledge that nothing in this License Agreement shall constitute or be construed as an endorsement by the Fairfax County Board of Supervisors, the County of Fairfax, and/ or any of its departments, agencies, boards, commissions, authorities, employees, or appointees with regard to the quality, efficacy, or desirability of the shuttle bus service operated by any contractor used by GMU.

Section 14.02. Subject to the provisions in Section 14.01, the County of Fairfax agrees to cooperatively advertise, market and promote the shuttle bus service operated by GMU to and from Burke Centre VRE Station to GMU campus. Except as specifically provided for herein, the parties shall not use, in its external advertising, marketing programs, or promotional efforts, any data, name, insignia, trademarks, pictures or other representation of the other party or its employees except on the specific written authorization in advance by the parties. The parties must receive all requests for authorization in writing no later than ten (10) days in advance of the use date.

ARTICLE FIFTEEN
Annual Appropriations

Section 15.01. All requirements for funds to be borne by Fairfax County or GMU shall be subject to annual appropriations by the Fairfax County Board of Supervisors or the Virginia General Assembly for GMU.

ARTICLE SIXTEEN
Third Parties

Section 16.01. This License Agreement shall not be construed as creating any personal liability on the part of any officer, employee, agent of the parties, nor shall it be construed as

giving any rights or benefits to anyone other than the parties hereto.

ARTICLE SEVENTEEN
Notices

Section 17.01. Whenever it is provided herein that notice, demand, request or other communication shall or may be given to, or served upon, either of the parties by the other, and/or whenever either of the parties shall desire to give or serve upon the other any notice, demand, request or other communication with respect hereto or with respect to the Burke VRE Station, each such notice, demand, request or other communication shall be in writing and, any law or statute to the contrary notwithstanding, shall not be effective for any purpose unless the same shall be given or served as follows:

a) If to GMU and its current and future contractors:

George Mason University
Parking & Transportation
4400 University Drive, MS 1J6
Fairfax, Virginia 22030
Attention: Joshua Cantor, Director, Parking and Transportation and copy:

George Mason University
Office of University Counsel
4400 University Drive, MS2A3
Fairfax, VA 22030

Reston Limousine and Travel Service, Inc. dba
Address

b) If to Fairfax County:

Fairfax County Department of Transportation (Fairfax Connector)
4050 Legato Road
Suite 400
Fairfax, Virginia 22033
Attention: Tom Beisiadny, Director of Transportation

Every such notice, demand, request or other communication hereunder shall be deemed to have been given or served for all purposes hereunder on the date on which it is received by the party to whom it was sent, by hand delivery, overnight courier, facsimile, certified mail or U.S. mail, postage prepaid. Delivery of notice shall be next business day on overnight deliveries; the delivery date (or attempted delivery date) for hand delivery; three (3) business days if by mail; and the day of facsimile if by facsimile.

ARTICLE EIGHTEEN
Governing Law

Section 18.01. This License Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia.

ARTICLE NINETEEN
Integration and Interpretation

Section 19.01. The terms and conditions herein set forth all the promises, agreements, conditions and understandings between the County and GMU pertaining to licensing of premises of the Burke VRE Station Park and Ride facility, and there is no promise, agreement, condition or understanding either oral or written, between the parties other than as are herein set forth. This License Agreement has been negotiated at arm's length with both parties having the opportunity to consult with legal counsel with respect to all provisions hereof. In the event of any ambiguity in any of the terms or provisions, this License Agreement shall not be interpreted against or in favor of either the County or GMU; nor there any presumption against or in favor of either the County or GMU. No prior writings, including without limitation, drafts of this License Agreement and modifications thereto, shall be given any force or effect.

IN WITNESS WHEREOF, the County and GMU and its current and future contractors have caused this License Agreement to be executed as of the date first hereinabove written.

FAIRFAX COUNTY:

BOARD OF SUPERVISORS OF FAIRFAX COUNTY, VIRGINIA

By:_____

COMMONWEALTH OF VIRGINIA)
) to-wit:
COUNTY OF _____)

On this ____ day of _____, 2013, before me appeared Edward L Long Jr., the County Executive of the Board of Supervisors of Fairfax County, after being first duly sworn, acknowledged that he/executed the above License Agreement, and the same was his free act and deed on behalf of the Board of Supervisors of Fairfax County, Virginia, the Fairfax County hereunder.

Subscribed and sworn before me, a Notary Public, in the county and state aforesaid on this _____ day of _____, 2013.

_____
Notary Public

My Commission expires: _____

GMU

By: _____

Its: _____

COMMONWEALTH OF VIRGINIA)
) to-wit:
COUNTY OF _____)

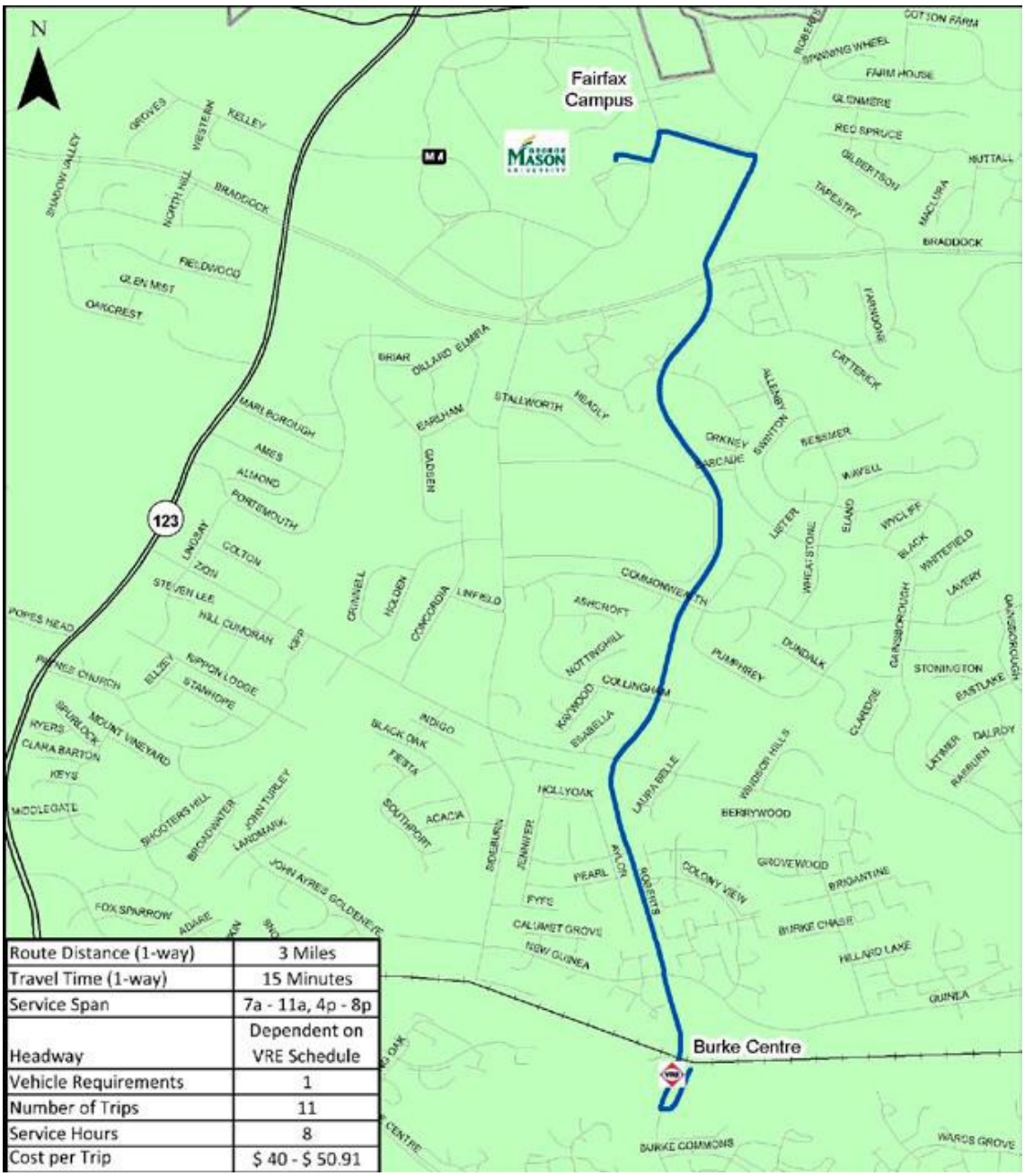
On this ____day of _____, 2013, before me appeared _____ _____, the _____ of GMU and its current and future contractors, after being first duly sworn, acknowledged that he/she executed the above License Agreement, and the same was his/her free act and deed on behalf of the County, GMU and its current and future contractors hereunder.

Subscribed and sworn before me, a Notary Public, in the county and state aforesaid on this _____day of _____, 2013.

_____
Notary Public

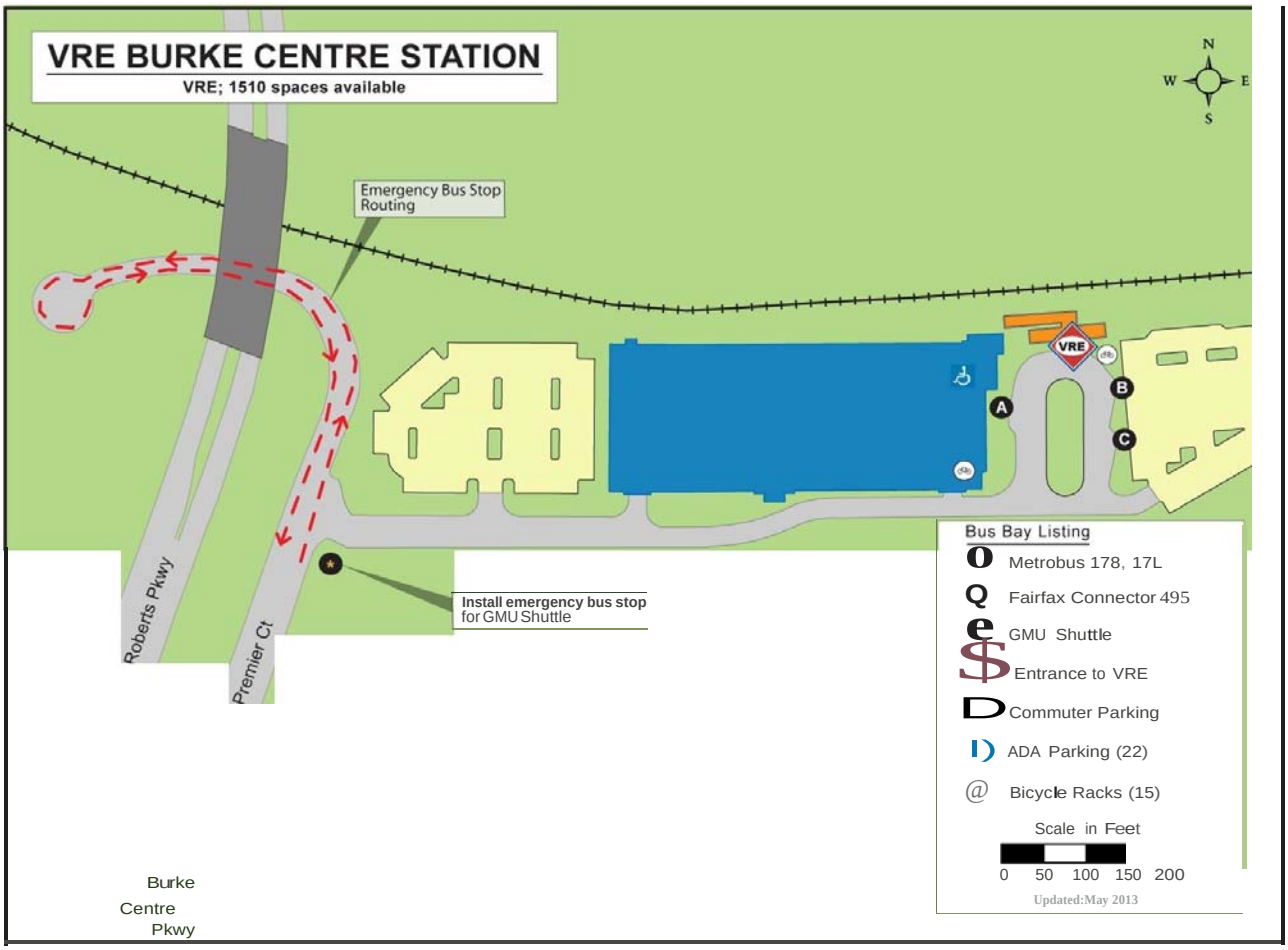
My Commission expires: _____

Map 1: George Mason University Shuttle Service Route



Route Distance (1-way)	3 Miles
Travel Time (1-way)	15 Minutes
Service Span	7a - 11a, 4p - 8p
Headway	Dependent on VRE Schedule
Vehicle Requirements	1
Number of Trips	11
Service Hours	8
Cost per Trip	$ 40 - $ 50.91

Map 2: Burke VRE Park and Ride Facility



Board Agenda Item
September 10, 2013

ACTION - 6

Endorsement of I-66 Vienna Metrorail Accessibility and Capacity Improvements (I-66 Bus Ramp) (Providence District)

ISSUE:
Board endorsement of Virginia Department of Transportation (VDOT) I-66 Vienna Metrorail Accessibility and Capacity Improvements, i.e., I-66 Bus Ramp.

RECOMMENDATION:
The County Executive recommends that the Board endorse the design plans for I-66 Vienna Metrorail Accessibility and Capacity Improvements (I-66 Bus Ramp) project, as generally presented at the Design Public Hearing on March 27, 2013, with the following conditions:

- The design proceeds with the "Vaden Drive Alignment" that was presented to the public at the March 27, 2013, Design Public Hearing. This option emerged as the preferred alignment and reduces the noise, visual, and traffic impacts to the adjoining communities compared to the other options considered in the earlier stages of the project.
- Landscaping, screening, and aesthetic treatments to the retaining walls to limit the visual and noise impacts of the project are considered in the design.

Upon endorsement, a letter will be sent to VDOT, notifying them that the Board has endorsed the plans.

TIMING:
Board action is requested on September 10, 2013, to finalize the design approval and proceed with the design-build procurement process.

BACKGROUND:
In 2008, the Virginia Department of Transportation (VDOT) and Fairfax County Department of Transportation, in coordination with the Washington Metropolitan Area Transit Authority (WMATA) and the Virginia Department of Rail and Public Transit (VDRPT), initiated a study to determine if it was feasible to provide a direct ramp connection for buses from the existing I-66 High Occupancy Vehicle (HOV) lanes to the Vienna/Fairfax-GMU Metrorail Station (Vienna Metro Station). Upon completion of the

feasibility study, VDOT initiated the design of the proposed ramp, and developed and tested additional design concepts.

The purpose of the proposed bus-only ramp connection is to improve the accessibility and reduce travel time for buses to the Vienna Metro Station to and from the HOV lanes of I-66. The I-66 Transit / Transportation Demand Management (TDM) Study identified the need for improved bus access to Metrorail stations, including the Vienna Metro Station, to improve transit times travel times and reliability and attract additional transit riders in the corridor. This project will also improve safety in the corridor by reducing bus weaving during peak periods with high congestion.

This project serves the immediate needs for enhancing and encouraging transit bus use along the I-66 corridor. Although this project does not provide the benefits that would be realized by the extension of Metrorail to the west on I-66, it can reduce travel times, improve safety and increase reliability for existing bus services. This will help to reduce congestion in the corridor. In the event that Metrorail is extended in the future, it is anticipated that the ramp (and other ramps at Monument Drive and Stringfellow Road) would be removed to clear the median for the rail extension.

Public Hearing Comments

A public hearing was held on March 27, 2013. Approximately 35 people attended the public hearing, and a total of 12 written comments were submitted. Of the comments received, five supported the project and four were opposed. A copy of the public hearing brochure is attached.

The following represents a summary of the major concerns expressed at the public hearing for the project:

- Request for sound walls and landscaping to mitigate noise and provide screening.
- Concern over cost of the project, and that it will only serve buses.
- Concern that the ramp will have to be removed if the Metrorail is extended in the future, and that the final results for the I-66 Environmental Impact Statement are not complete.

Project Schedule

The current schedule is as follows:

- Design-Build Contract Request for Qualifications Advertisement – September 2013
- Design-Build Contract Request for Proposals Advertisement – January 2014

- Commonwealth Transportation Board Approval to Award Contract – July 2014
- Design-Build Contract Notice to Proceed – August 2014
- Begin Construction – January 2015
- Complete Construction – December 2016

FISCAL IMPACT:
No county funds are required for this project at this time. The project is currently funded by Congestion Mitigation and Air Quality (CMAQ) and Regional Surface Transportation Program (RSTP) funds identified in the VDOT Six-Year Improvement Program in the amount of $42.129 million. The total project cost is estimated at $53.949 million. FCDOT is coordinating with VDOT to identify additional funding to cover the estimated shortfall of $11.820 million. VDOT is in the process of evaluating cost saving measures to lower the funding shortfall. However, the final cost will not be known until the design-build contract bids are received.

ENCLOSED DOCUMENTS:
Attachment 1: Letter for Signature by Thomas P. Biesiadny, Board Endorsement of I-66 Vienna Metrorail Accessibility and Capacity Improvements (I-66 Bus Ramp)
Attachment 2: March 27, 2013, Public Hearing Brochure

STAFF:
Robert A. Stalzer, Deputy County Executive
Thomas P. Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Eric M. Teitelman, Chief, Capital Projects and Operation Division (CPOD), FCDOT
Karyn L. Moreland, Chief, Capital Projects Section, CPOD, FCDOT
Michael J. Guarino, Transportation Planner, Capital Projects Section, CPOD, FCDOT
Caijun Luo, Transportation Planner, Capital Projects Section, CPOD, FCDOT

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County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

September 11, 2013

Ms. Helen L. Cuervo, Administrator
Northern Virginia District
Virginia Department of Transportation
4975 Alliance Drive
Fairfax, Virginia 22033

SUBJECT: Board Endorsement of I-66 Vienna Metrorail Accessibility and Capacity Improvements (I-66 Bus Ramp)
VDOT Project #0066-029-132, UPC #81009

Dear Ms. Cuervo:

On September 10, 2013, the Fairfax County Board of Supervisors endorsed the design plans to provide a direct ramp connection for buses from the existing I-66 HOV lanes to the Vienna/Fairfax-GMU Metrorail Station as presented at the March 27, 2013, public hearing, with the following conditions:

- The design proceeds with the "Vaden Drive Alignment" that was presented to the public at the March 27, 2013, Design Public Hearing. This option emerged as the preferred alignment and reduces the noise, visual, and traffic impacts to the adjoining communities compared to the other options considered in the earlier stages of the project.

- Landscaping, screening, and aesthetic treatments to the retaining walls to limit the visual and noise impacts of the project are considered in the design.

If you have any questions on this project, please call Caijun Luo at 703-877-5755.

Sincerely,

Tom Biesiadny
Director

Fairfax County Department of Transportation
4050 Legato Road, Suite 400
Fairfax, VA 22033-2895
Phone: (703) 877-5600 TTY: 711
Fax: (703) 877-5723
www.fairfaxcounty.gov/fcdot

cc: Members, Board of Supervisors
Edward L. Long Jr., County Executive
Robert A. Stalzer, Deputy County Executive
Catherine Chianese, Assistant County Executive
Leonard (Bud) Siegel, Jr., Arlington/Fairfax Preliminary Engineering Manager, Virginia Department of Transportation
Eric M. Teitelman, Chief, Capital Projects and Operation Division, FCDOT
Caijun Luo, Transportation Planner, Capital Projects Section, FCDOT

Virginia Department of Transportation

www.VirginiaDOT.org

Design Public Hearing

I-66 - Vienna Metrorail Accessibility and Capacity Improvements

Fairfax County

Public Meeting

The Virginia Department of Transportation (VDOT) welcomes you to a Design Public Hearing to discuss plans to provide direct access between the I-66 High Occupancy Vehicle (HOV) lanes, west of Vaden Drive, and the Vienna/Fairfax-George Mason University Metro Station. The proposed direct access bus ramp will provide a faster and safer Metro Bus ride to the Metro Station by eliminating the weave between the HOV and on/off ramp Collector-Distributor roads to the west of Nutley Road.

This meeting is being held to provide an opportunity for citizens and organizations to give VDOT comments and/or suggestions on the proposed project. VDOT strives to ensure that all members of the community have the opportunity to participate in public decisions on transportation projects and programs affecting them.

VDOT representatives are present to discuss the project and answer your questions. A comment sheet is included in the handouts for this meeting, and your input is encouraged. All oral and written comments received on this project will be included in a transcript for review by VDOT personnel, citizens and other interested parties.

Project Overview

Purpose - Provide direct bus access to and from I-66 and the Vienna/GMU Metro Station south bus loading area

From - I-66 - 0.301 Miles West of Blake Lane

To - Vaden Drive

Total length - 0.814 Miles

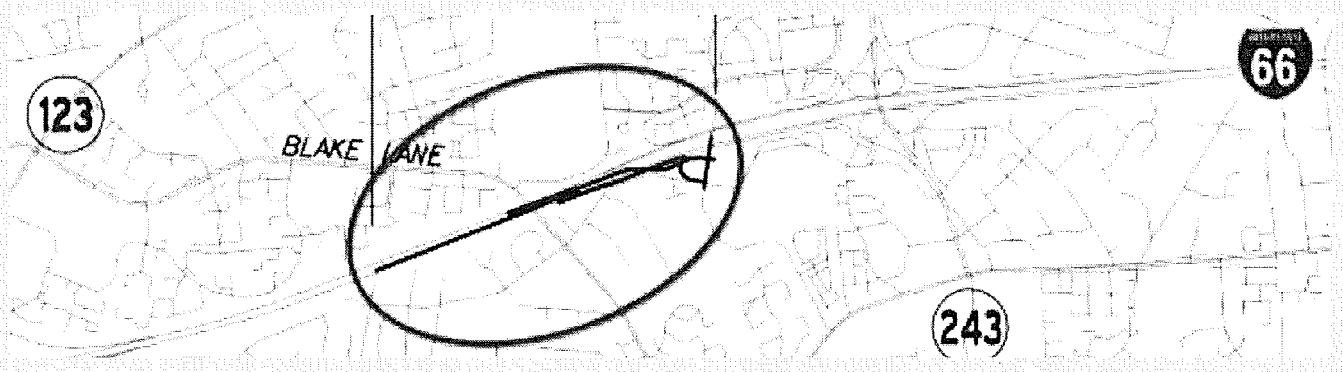
Improvements - New flyover ramp between the I-66 HOV lanes and Vienna/GMU Metro street grid

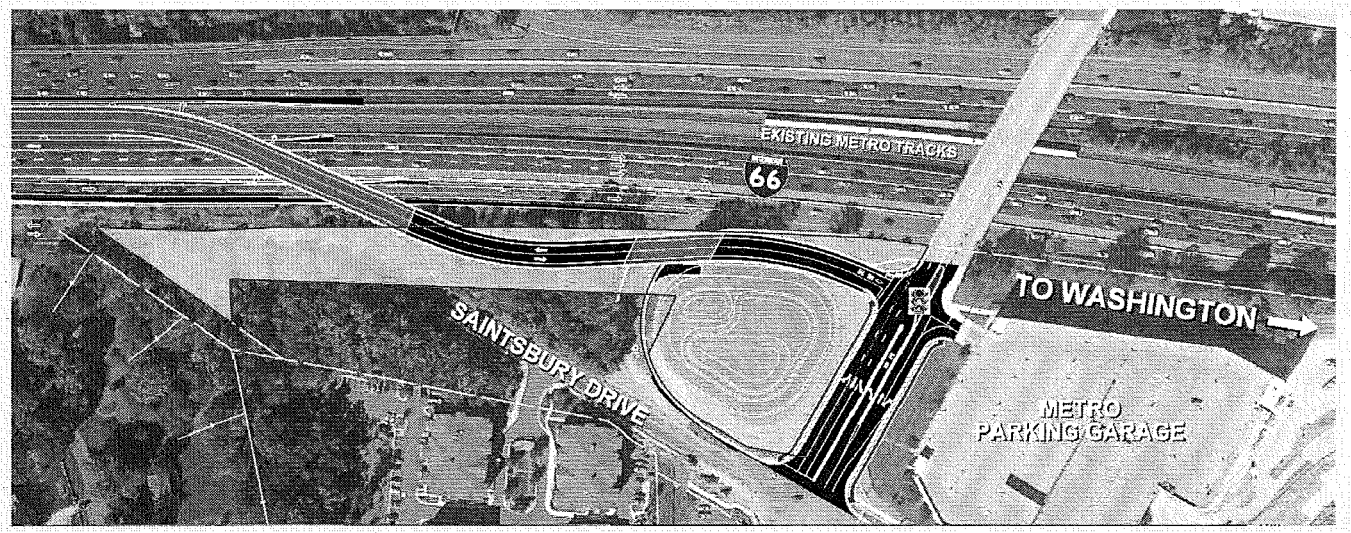
State Project (FO) 0066-029-132, P101, C501 (UPC 81009) Federal Project STP-5401(773)

PROJECT DESCRIPTION

The purpose of the proposed bus-only ramp connection is to improve the accessibility and reduce travel times for buses traveling to the Vienna Metro Station to/from the HOV lanes of I-66. The I-66 Transit / Transportation Demand Management (TDM) Study identified the need for improved bus access to Metro stations, including the Vienna Metro, to improve transit travel times and reliability, and attract additional riders to the corridor. There are currently 14 bus routes serving approximately 3,000 passengers daily (based on historical ridership data), which originate at the Vienna Metro Station and provide service to/from park-and-ride lots and communities to the west on the I-66 corridor. Transit travel time runs conducted for this study indicated that the last 2 miles of a bus trip from the west on I-66 to the Vienna Metro station are highly variable. The proposed ramp is expected to reduce the typical bus travel times and also to improve travel time reliability for this connection.

Project Graphic





Estimated Project Cost

Total Cost:

$55 million

Preliminary Engineering:

$2.8 million

Right of Way Acquisition and Utility Relocation:

$1.0 million

Construction:

$51.2 million

This project will be funded with federal and state funds. Costs are subject to change as development of the project is in early design stages. This project has current funding totaling $41.1M.

Civil Rights

VDOT ensures nondiscrimination in all programs and activities in accordance with Title VI and VII of the Civil Rights Act of 1964. If you need more information in regards to your civil rights on this project or special assistance for persons with disabilities or limited English proficiency, contact the project manager listed in this brochure.

Right of Way

No residences, farms, businesses or non-profit organizations will be displaced. The proposed construction will require transfer of property from WMATA to VDOT to construct the improvements.

As design of this project is finalized, additional right of way may be required beyond the proposed right of way shown on the public hearing plans. The property owners will be informed of the exact location of the easements during the right of way acquisition process and prior to construction.

Information about right of way purchase is discussed in VDOT's brochure, "Right of Way and Utilities: a Guide for Property Owners and Tenants." Copies of this brochure are available here from a VDOT right of way agent.

Anticipated Schedule

Design Public Hearing - March 27, 2013

Comment Period Ends - April 11, 2013

Final Design Approval - Fall 2013

Begin Land Acquisition - Fall 2013

Advertise Project - Late 2013

Begin Construction - Late 2014

Environmental Review

In compliance with the National Environmental Policy Act (NEPA) and 23 CFR Part 771, a Categorical Exclusion was prepared and is available for review.

Get Involved

VDOT representatives will review and evaluate any information received as a result of this meeting. The comment sheet in this brochure is provided to assist in making your comments. You may leave the sheet or any other written comments in the comment box at the meeting, provide oral comments to the court reporter tonight, or mail/email your comments.

Comments must be postmarked, emailed or delivered to VDOT by **April 11, 2013** to be included in the public hearing record.

Comments may be mailed to Mr. Leonard (Bud) Siegel, Jr., P.E. at the address below or emailed to meeting_comments@vdot.virginia.gov. Please include "Vienna Metro Access Ramps" in the email subject line.

Project information shared here, including a summary of comments received during the comment period, will be available at www.virginiadot.org/projects and at VDOT's Northern Virginia District Office.

Contact Information

Primary Contact: **Leonard (Bud) Siegel, Jr., P.E.** Bud.Siegel@VDOT.Virginia.gov	VDOT Northern Virginia District Office Arlington/Fairfax Preliminary Engineering Manager	4975 Alliance Drive Fairfax, VA 22030	703-259-2118
Joan Morris Joan.Morris@VDOT.Virginia.gov	VDOT Northern Virginia District Office Public Affairs Manager	4975 Alliance Drive Fairfax, VA 22030	703-259-1799
D. Brian Costello Brian.Costello@VDOT.Virginia.gov	VDOT Regional Right of Way & Utilities Manager	4975 Alliance Drive Fairfax, VA 22030	703-259-2986

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VDOT Virginia Department of Transportation

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Board Agenda Item
September 10, 2014

INFORMATION – 1

County Holiday Schedule – Calendar Year 2014

A proposed calendar year 2014 Holiday Schedule for Fairfax County Government has been prepared. County employees are authorized 11 ½ holidays in each calendar year.

The proposed holiday schedule for 2014 lists the Federal Government holidays as well as those of the Fairfax County Public Schools. State employees and the Courts observe the Commonwealth of Virginia designated holidays.

Unless otherwise directed by the Board of Supervisors, the enclosed will be adopted as the holiday schedule for calendar year 2014.

ENCLOSED DOCUMENTS:
Attachment 1 – Proposed Holiday Schedule – 2014

STAFF
Edward L. Long, County Executive
Susan Woodruff, Human Resources Director

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Proposed Holiday Schedule – Calendar Year 2014

HOLIDAY	OBSERVED DAY - DATE	FAIRFAX COUNTY GOVERNMENT	FAIRFAX COUNTY PUBLIC SCHOOLS*	COMMONWEALTH OF VIRGINIA	FEDERAL GOVERNMENT
New Year's Day	Wednesday Jan 1 2014	X	X	X	X
Lee-Jackson Day	Friday Jan 17	regular work day	regular work day	X	regular work day
Martin Luther King, Jr. Day	Monday Jan 20	X	X	X	X
George Washington's Day	Monday Feb 17	X	X	X	X
Memorial Day	Monday May 26	X	X	X	X
Independence Day	Friday July 4	X	X	X	X
Labor Day	Monday Sept 1	X	X	X	X
Columbus Day	Monday Oct 13	X	X	X	X
Veterans Day	Tuesday Nov 11	X	regular work day	X	X
Additional Time Off	Wednesday Nov 26	regular work day	regular work day	X (1/2 Day)	regular work day
Thanksgiving Day	Thursday Nov 27	X	X	X	X
Day after Thanksgiving	Friday Nov 28	X	X	X	regular work day
Floating Holiday/Additional Time Off	Tuesday Dec 23	regular work day	X	regular work day	regular work day
Christmas Eve Day	Wednesday Dec 24	X (half day)	X	X (1/2 Day)	regular work day
Christmas Day	Thursday Dec 25	X	X	X	X
Additional Time Off (state)	Friday Dec 26	regular work day	regular work day	X	regular work day
Total Holidays		11½	12	14	10

* **The actual dates of some holidays may change to accommodate the student calendar.**

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Board Agenda Item
September 10, 2013

INFORMATION - 2

Contract Award - Continuous Duty Nursing Services

The Fairfax County Health Department has a requirement to provide services to specific Fairfax County Public School (FCPS) children who, due to the nature of their medical needs or disability, require continuous duty nursing services throughout the school day. The Department of Purchasing and Supply Management, the Department of Administration for Human Services and the Health Department (HD) negotiated a non-competitive contract award with Anchor Healthcare Services for the provision of these services.

The Individuals with Disabilities Act (IDEA) states that nursing services must be provided to a student when the services are necessary to enable the student to receive a free public education. While contracts for these services are in place, infrequently, there are times when a child's doctor will inform the HD/FCPS that it is in the child's best interest to maintain the nursing agency the child currently uses at school as well as in the home (continuous duty). There are currently three such students who require continuous duty nursing services from Cummings Enterprises, LLC, dba Anchor Healthcare Services, and cannot be serviced by vendors under the competitively awarded contracts.

The Fairfax County Department of Tax Administration has verified that Anchor Healthcare Services does possess the appropriate Fairfax County Business, Professional, & Occupational License (BPOL). The business classification category of Anchor Healthcare Services is a small, woman-owned business.

Unless otherwise directed by the Board of Supervisors, the Department of Purchasing and Supply Management will award a fee for service non-competitive contract to Anchor Healthcare Services for a period of two (2) years ending July 31, 2015, with three (3) one-year renewal options.

FISCAL IMPACT:
Funding for this contract shall come from the Health Department appropriations. The maximum anticipated costs for the life of the contract would be $424,000, assuming the County exercises all its renewal options.

ENCLOSED DOCUMENTS:
None

STAFF:
Cathy A. Muse, CPPO, Director, Department of Purchasing & Supply Management
Gloria Addo-Ayensu M.D., Director, Health Department
M. Gail Ledford, Director, Department of Administration for Human Services

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Board Agenda Item
September 10, 2013

INFORMATION – 3

Minor Schedule Changes to Fairfax Connector Routes to be Implemented in September 2013 (Lee, Mount Vernon, Springfield, Sully Districts)

This item is to notify the Board that the Department of Transportation (FCDOT) intends to make minor schedule and/or routing changes to several Fairfax Connector routes as outlined below:

Route 151 (Lee District, Mount Vernon District): Adjust the weekend schedule to improve on-time performance.

Route 152 (Lee District, Mount Vernon District): Adjust the weekend schedule to improve on-time performance.

Route 161 (Lee District, Mount Vernon District): Adjust the weekday blocking to improve on-time performance.

Route 162 (Lee District, Mount Vernon District): Adjust the weekday blocking to improve on-time performance.

Route 301 (Mount Vernon): Add three trips to the afternoon schedule, increasing the span of service.

Route 371 (Lee District): Remove trips from the evening schedule reducing the span of service, to be covered by Route 372 and 373 trips.

Route 372 (Lee District): Add trips to the evening schedule expanding the span of service. Service will end later in the evening.

Route 373 (Lee District): Add trips to the evening schedule expanding the span of service. Service will end later in the evening.

Route 621 (Springfield District): Extend the routing of the final “short trip” from the current end point at the Government Center to West Ox Road to provide service along Post Forest Drive. (Bus already operates on this segment in non-revenue service.)

Route 623 (Springfield District): Extend the routing of the final "short trip" from the current end point at the Government Center to West Ox Road to provide service along Post Forest Drive. (Bus already operates on this segment in non-revenue service.)

Route 630 (Springfield District, Sully District): Adjust the afternoon schedule to improve on-time performance.

Route 631 (Springfield District, Sully District): Adjust the afternoon schedule to improve on-time performance.

Route 632 (Springfield District, Sully District): Adjust the afternoon schedule to improve on-time performance.

BACKGROUND:
The Fairfax County Department of Transportation (FCDOT) continually monitors the performance of the Fairfax Connector bus service and makes adjustments to ensure the highest quality of bus service is being delivered. The proposed adjustments to service will improve the on-time performance and provide additional service to areas without compromising existing service. There is a proposed reduction of service (elimination of trips in the afternoon) to Route 371; however this does not degrade the service to the Route 371 riders. The additional service proposed for Routes 372 and 373 provides coverage for the trips lost on Route 371.

Adjustments to improve on-time performance are proposed to Routes 151 and 152 on the weekends, and Routes 161, 162, 630, 631 and 632 during the week. The proposed changes allocate more running time to the respective schedules and/or adjust the blocking of trips, providing a noticeable improvement in the bus adherence to the schedule.

Adjustments to provide additional service are proposed to Routes 301, 371, 372, 621 and 623. The adjustments are being made to respond to numerous requests from the public.

Route 301 riders and potential riders that work an early schedule would like earlier buses in the afternoon to accommodate their schedule. Additional trips in the afternoon are proposed for Route 301.

Route 372 riders along Alban Road who previously used Route 304 have asked for Route 372 to provide service later in the evening matching the times Route 304 provided service. Later service is proposed for Route 372.

For Route 373, riders who transfer from the Virginia Railway Express (VRE) Station have asked for better service in the morning, so they can make transfers from the VRE to the bus. The morning schedule for Route 373 is proposed to be shifted to provide better transfer opportunities. Later service is proposed for Route 373.

For Routes 621 and 623, riders have asked that the last trips serving the Government Center be extended to West Ox Road along Post Forest Drive. The last trips of Routes 621 and 623 in the evenings will be extended to provide the requested coverage. These buses already travel along Post Forest Drive in non-revenue service after leaving the Government Center.

Unless otherwise directed by the Board, the Department of Transportation will implement these service changes in September 2013.

FISCAL IMPACT:
The changes noted above result in an additional $135,000 dollars in bus service costs for FY2014. These funds have been included in the Fairfax Connector's approved FY2014 budget and no additional funding is required.

ENCLOSED DOCUMENTS:
None

STAFF:
Robert A. Stalzer, Deputy County Executive
Tom Biesiadny, Director, FCDOT
Dwayne Pelfrey, Chief, Transit Services Division, FCDOT
Christin Wegener, Transit Services Division, FCDOT
Paul Mounier, Transit Services Division, FCDOT

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Board Agenda Item
September 10, 2013

10:55 a.m.

Matters Presented by Board Members

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11:40 a.m.

CLOSED SESSION:

(a) Discussion or consideration of personnel matters pursuant to Virginia Code § 2.2-3711(A) (1).

(b) Discussion or consideration of the acquisition of real property for a public purpose, or of the disposition of publicly held real property, where discussion in an open meeting would adversely affect the bargaining position or negotiating strategy of the public body, pursuant to Virginia Code § 2.2-3711(A) (3).

(c) Consultation with legal counsel and briefings by staff members or consultants pertaining to actual or probable litigation, and consultation with legal counsel regarding specific legal matters requiring the provision of legal advice by such counsel pursuant to Virginia Code § 2.2-3711(A) (7).

1. Enactment of an Uncodified Ordinance Relating to CoxCom, LLC's Satisfaction of Conditions Established in Appendix H of the Fairfax County Code

2. *Eric S. Clark v. The County of Fairfax, Virginia, Richard W. Nagel, R.L. Davis, John Spata, John H. Kim, T. B. Smith, S. N. Brim, Jonathan Stern, Kenneth Pfeiffer, Randall C. Hargus, John Does 1-30*, Civil Action No.1:13-cv-616 (E.D. Va.)

3. *Gary Steven Pisner v. State Building Code Technical Review Board and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia*, Case No. CL-2012-0001462 (Fx. Co. Cir. Ct.) (Springfield District)

4. *Steve T. Tran, Sheila M. Tran, Tricia L. Cooper, and Trustees of the Falls Church Church of Christ v. Fairfax County Board of Supervisors and CG Peace Valley, LLC*, Case No. CL-2013-0010098 (Fx. Co. Cir. Ct.) (Mason District)

5. *Joseph F. and Juliana Campagna, Fairfax Christian School, Inc., Hunter Mill East, LLC, Hunter Mill West, LLC, Robert L. and Rosemary S. Thoburn, and Thoburn Limited Partnership v. Fairfax County Board of Supervisors*, Case No. CL-2010-0005862 (Fx. Co. Cir. Ct.) (Hunter Mill District)

6. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Lucy W. Berkebile*, Case No. 2011-0012842 (Fx. Co. Cir. Ct.) (Dranesville District)

7. *Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Rajendra Bernard Edwards*, Case No. CL-2012-0008576 (Fx. Co. Cir. Ct.) (Hunter Mill District/Town of Vienna)

8. *Eileen M. McLane, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Scott W. Pruitt*, Case No. CL-2009-0013751 (Fx. Co. Cir. Ct.) (Springfield District)

9. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Zahir Ahmed*, Case No. CL-2012-0019602 (Fx. Co. Cir. Ct.) (Mount Vernon District)

10. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Charilene N. Lucas, a/k/a Christine N. Lucas*, Case No. CL-2011-0012915 (Fx. Co. Cir. Ct.) (Lee District)

11. *Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Tina M. Howard*, Case No. CL-2011-0017608 (Fx. Co. Cir. Ct.) (Providence District)

12. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Michael A. Agge and Annabel M. Agge*, Case No. CL-2012-0008511 (Fx. Co. Cir. Ct.) (Lee District)

13. *Leslie B. Johnson, Fairfax County Zoning Administrator v. George Daamash*, Case No. CL-2011-0000818 (Fx. Co. Cir. Ct.) (Mount Vernon District)

14. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Sidney B. Hill and Wanda C. Hill*, Case No. CL-2012-0011053 (Fx. Co. Cir. Ct.) (Hunter Mill District)

15. *Eileen M. McLane, Fairfax County Zoning Administrator v. Santos Gutierrez*, Case No. CL-2011-0003448 (Fx. Co. Cir. Ct.) (Lee District)

16. *Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Gail K. Etherton and Debora S. Etherton*, Case No. CL-2011-0013547 (Fx. Co. Cir. Ct.) (Springfield District)

17. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Patrick McAlee and Barbara McAlee*, Case No. CL-2012-0010063 (Fx. Co. Cir. Ct.) (Mount Vernon District)

18. *Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Sheldon P. Ellison and Wauleah A. Ellison*, Case No. CL-2010-0017783 (Fx. Co. Cir. Ct.) (Mason District)

19. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Patricia Connors*, Case No. CL-2012-0008723 (Fx. Co. Cir. Ct.) (Mount Vernon District)

20. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Tung Nguyen and Benjawan Pancharoen Nguyen*, Case No. CL-2013-0008398 (Fx. Co. Cir. Ct.) (Mason District)

21. *Leslie B. Johnson, Fairfax County Zoning Administrator v. King Tyree Lodge 292, et al.*, Case No. CL-2013-0005715 (Fx. Co. Cir. Ct.) (Providence District)

22. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Peter Komtzamanys*, Case No. CL-2013-0010321 (Fx. Co. Cir. Ct.) (Sully District)

23. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Francis A. Headley, Grace F. Headley, and Jerome E. Headley*, Case No. CL-2013-0003839 (Fx. Co. Cir. Ct.) (Mason District)

24. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Tania Soto-Yapura*, Case No. CL-2013-0008359 (Fx. Co. Cir. Ct.) (Mason District)

25. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Deutsche Bank National Trust Company*, Case No. CL-2013-0003836 (Fx. Co. Cir. Ct.) (Mount Vernon District)

26. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Robert L. Gelles and Anita A. Gelles*, Case No. CL-2013-004820(Fx. Co. Cir. Ct.) (Springfield District)

27. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Saul Llamas and Claudia K. Ramos*, Case No. CL-2013-0005664 (Fx. Co. Cir. Ct.) (Mason District)

28. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Beverly J. Geraghty*, Case No. CL-2013-0004121 (Fx. Co. Cir. Ct.) (Braddock District)

29. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Loan Phuong*, Case No. CL-2013-0003688 (Fx. Co. Cir. Ct.) (Braddock District)

30. *Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Columbia Crossroads, LP*, Case No. CL-2013-0007938 (Fx. Co. Cir. Ct.) (Mason District)

31. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Federal National Mortgage Association*, Case No. CL-2013-0007122 (Fx. Co. Cir. Ct.) (Lee District)

32. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Lilian H. Lopez*, Case No. CL-2013-0005807 (Fx. Co. Cir. Ct.) (Mason District)

33. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Silvio A. Diaz and Amalia D. Jesus Diaz*, Case No. CL-2013-0011448 (Fx. Co. Cir. Ct.) (Mason District)

34. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Ly Chau, Bolmarket Corporation, and Lozada Corporation*, Case No. CL-2013-0011534 (Fx. Co. Cir. Ct.) (Providence District)

35. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Jose V. Chavez*, Case No. CL-2013-0011849 (Fx. Co. Cir. Ct.) (Providence District)

36. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Mohammad S. Khan and Sunawar Khan*, Case No. CL-2013-0011848 (Fx. Co. Cir. Ct.) (Providence District)

37. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Robert E. Barnes and Dale A. Barnes*, Case No. CL-2013-0011895 (Fx. Co. Cir. Ct.) (Mount Vernon District)

38. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. The Key Building Partnership and NAFS Food Services, Inc.*, Case No. CL-2013-0011950 (Fx. Co. Cir. Ct.) (Lee District)

39. *Leslie B. Johnson, Fairfax County Zoning Administrator and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Martha Campoy*, Case No. CL-2013-0011846 (Fx. Co. Cir. Ct.) (Lee District)

40. *Leslie B. Johnson, Fairfax County Zoning Administrator v. FW VA-Willston Centre II, LLC*, Case No. CL-2013-0012161 (Fx. Co. Cir. Ct.) (Mason District)

41. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Yonis A. Rodriguez and Belen P. Rodriguez*, Case No. CL-2013-0012211 (Fx. Co. Cir. Ct.) (Sully District)

42. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Thomas M. Barrett*, Case No. CL-2013-0012213 (Fx. Co. Cir. Ct.) (Dranesville District)

43. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Chom Sun Cholihan*, Case No. CL-2013-0012453 (Fx. Co. Cir. Ct.) (Sully District)

44. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Devin L. Battley*, Case No. CL-2013-0012500 (Fx. Co. Cir. Ct.) (Mason District)

45. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Adnan A. Ashkar*, Case No. CL-2013-0012524 (Fx. Co. Cir. Ct.) (Mason District)

46. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Kiet Nguyen and Jenny Nguyen*, Civil Case No. GV13-013293 (Fx. Co. Gen. Dist. Ct.) (Mason District)

47. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Byung Young Kim and Myung Sook Kim*, Case No. GV13-013294 (Fx. Co. Gen. Dist. Ct.) (Dranesville District)

48. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Miguel A. Orellana*, Case No. GV13-013434 (Fx. Co. Gen. Dist. Ct.) (Lee District)

49. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Vivian Villaroel*, Case No. GV13-012764 (Fx. Co. Gen. Dist. Ct.) (Mason District)

50. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Rosa Castillo*, Case No. GV13-008364 (Fx. Co. Gen. Dist. Ct.) (Mason District)

51. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Jerry Komorowski*, Case No. GV13-007341 (Fx. Co. Gen. Dist. Ct.) (Mount Vernon District)

52. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Sokhom Kith and Sara R. Kith*, Case No. GV13-015244 (Fx. Co. Gen. Dist. Ct.) (Providence District)

53. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Karen A. Kallio*, Case No. GV13-012768 (Fx. Co. Gen. Dist. Ct.) (Mason District)

54. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Luis A. Rios and Maria E. Rios*, Case No. GV13-015145 (Fx. Co. Gen. Dist. Ct.) (Providence District)

55. *Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Hannah Wu*, Case No. GV13-015628 (Fx. Co. Gen. Dist. Ct.) (Hunter Mill District)

56. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Harlan Y.M. Lee and Mary Jane Lee*, Case No. GV12-026231 (Fx. Co. Gen. Dist. Ct.) (Providence District)

57. *Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Candace K. Noonan*, Case No. GV12-014862 (Fx. Co. Cir. Ct.) (Hunter Mill District)

58. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Salvador Garcia*, Case No. GV13-016925 (Fx. Co. Gen. Dist. Ct.) (Lee District)

59. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Mac Arthur Weston*, Case No. GV13-0017285 (Fx. Co. Gen. Dist. Ct.) (Springfield District)

60. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Ibrahim I. Abdullah*, Case No. GV13-017286 (Fx. Co. Gen. Dist. Ct.) (Mason District)

61. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Ahmad Ellini*, Case No. GV13-018003 (Fx. Co. Gen. Dist. Ct.) (Providence District)

62. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Daniel De Torres Perez and Beverly A. Youmans*, Case No. GV13-018117 (Fx. Co. Gen. Dist. Ct.) (Mason District)

63. *Michael R. Congleton, Property Maintenance Code Official for Fairfax County, Virginia v. Christopher Brinsko*, Case No. GV13-018553 (Fx. Co. Gen. Dist. Ct.) (Springfield District)

64. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Marisol Ferrel*, Case No. GV13-018556 (Fx. Co. Gen. Dist. Ct.) (Providence District)

65. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Tammy L. Umbel*, Case No. GV13-018555 (Fx. Co. Gen. Dist. Ct.) (Braddock District)

66. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Margarita E. Lorenz*, Case No. GV13-018554 (Fx. Co. Gen. Dist. Ct.) (Mount Vernon District)

67. *Leslie B. Johnson, Fairfax County Zoning Administrator v. John L. Butterfield and Nancy S. Butterfield*, Case No. GV13-018973 (Fx. Co. Gen. Dist. Ct.) (Dranesville District)

68. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Jingyang Tao and Carrie Song*, Case Nos. GV13-018987 and GV13-018988 (Fx. Co. Gen. Dist. Ct.) (Dranesville District)

69. *Jeffrey L. Blackford, Property Maintenance Code Official for Fairfax County, Virginia v. Jingyang Tao and Carrie Song*, Case Nos. GV13-018986 and GV13-018989 (Fx. Co. Gen. Dist. Ct.) (Dranesville District)

70. *Jeffrey L. Blackford, Property Maintenance Code Official for Fairfax County, Virginia v. Helen M. Parker-Smith*, Case Nos. GV13-019039 and GV13-019040 (Fx. Co. Gen. Dist. Ct.) (Providence District)

71. *Jeffrey L. Blackford, Property Maintenance Code Official for Fairfax County, Virginia v. Charles V. Stanley, Jr.*, Case Nos. GV13-019037 and GV13-019038 (Fx. Co. Gen. Dist. Ct.) (Lee District)

72. *Jeffrey L. Blackford, Property Maintenance Code Official for Fairfax County, Virginia v. Arthur F. Parnell*, Case No. GV13-018974 (Fx. Co. Gen. Dist. Ct.) (Mason District)

73. *Jeffrey L. Blackford, Property Maintenance Code Official for Fairfax County, Virginia v. Samya Ahmed Salih and Mustafa Abdel Magee Younis*, Case No. GV13-018971 (Fx. Co. Gen. Dist. Ct.) (Mason District)

74. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Marcus Robinson and William Robinson*, Case No. GV13-018969 (Fx. Co. Gen. Dist. Ct.) (Mount Vernon District)

75. *Jeffrey L. Blackford, Property Maintenance Code Official for Fairfax County, Virginia v. Marcus Robinson and William Robinson*, Case No. GV13-018970 (Fx. Co. Gen. Dist. Ct.) (Mount Vernon District)

76. *Leslie B. Johnson, Fairfax County Zoning Administrator v. 8228 Richmond Highway, LLC*, Case No. GV13-018972 (Fx. Co. Gen. Dist. Ct.) (Lee District)

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Board Agenda Item
September 10, 2013

3:30 p.m.

Board Decision on Establishing Parking Restrictions within the Hilltop Business Park (Lee District)

ISSUE:
Board decision on the proposed amendment to Appendix R of *The Code of the County of Fairfax, Virginia* (Fairfax County Code), to establish parking restrictions on all public streets within the Hilltop Business Park in the Lee District.

RECOMMENDATION:
The County Executive recommends that the Board adopt the amendment (Attachment I) to Appendix R, of the Fairfax County Code, to prohibit commercial vehicles as defined in Section 82-5-7 of the Fairfax County Code, recreational vehicles, and all trailers from parking on Angleton Court, Conell Court, Hill Park Court, Hill Park Drive, and Kincannon Place, from 9:00 p.m. to 6:00 a.m., seven days per week.

TIMING:
On May 14, 2013, the Board authorized advertisement of a Public Hearing to consider the proposed amendment to Appendix R, of the *Fairfax County Code*. The Board held a public hearing on June 4, 2013, and deferred its decision to September 10, 2013.

BACKGROUND:
Fairfax County Code Section 82-5-37(5) authorizes the Board of Supervisors to designate restricted parking in non-residential areas where long term parking of vehicles diminish the capacity of on-street parking for other uses.

The Lee District office has forwarded a petition and request from nearly all of the business owners in the Hilltop Business Park to prohibit commercial vehicles as defined in Section 82-5-7 of the Fairfax County Code, recreational vehicles, and all trailers from parking on Angleton Court, Conell Court, Hill Park Court, Hill Park Drive, and Kincannon Place, from 9:00 p.m. to 6:00 a.m., seven days per week. Business park owners related that inoperable and unattended vehicles are parked for long periods of time resulting in scarce parking for employees and business customers.

Based on staff observations of the aforementioned streets, long term parking of out of area vehicles is diminishing the capacity of on-street parking for use by the business community.

FISCAL IMPACT:
The cost of sign installation is estimated at $1,500 to be paid out of Fairfax County Department of Transportation (FCDOT) funds.

ENCLOSED DOCUMENTS:
Attachment I: Proposed amendment to Fairfax County Code, Appendix R (General Parking Restrictions)
Attachment II: Area Map of Proposed Parking Restriction (Hilltop Business Park)

STAFF:
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Eric Teitelman, Chief, Capital Projects and Operations Division, FCDOT
Selby Thannikary, Chief, Traffic Operations Section, FCDOT
Maria Turner, Sr. Transportation Planner, FCDOT

Attachment I

PROPOSED CODE AMENDMENT

THE CODE OF THE COUNTY OF FAIRFAX, VIRGINIA
APPENDIX R

Amend *The Code of the County of Fairfax*, *Virginia,* by adding the following to Appendix R, in accordance with Section 82-5-37:

Angleton Court (Route 7557).
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on the entire length of Angleton Court from 9:00 p.m. to 6:00 a.m., seven days per week.

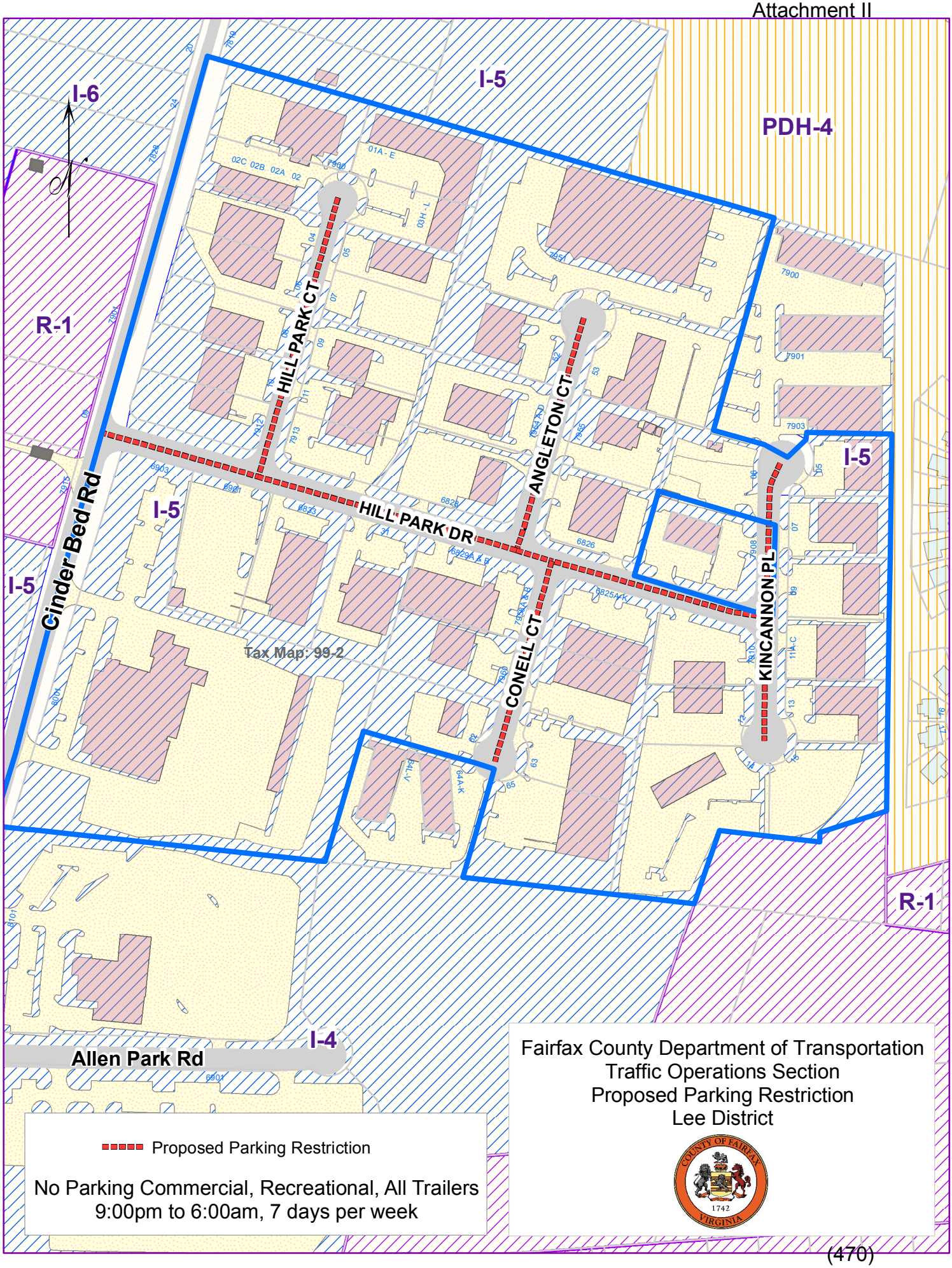
Conell Court (Route 7558).
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on the entire length of Conell Court from 9:00 p.m. to 6:00 a.m., seven days per week.

Hill Park Court (Route 6773).
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on the entire length of Hill Park Court from 9:00 p.m. to 6:00 a.m., seven days per week.

Hill Park Drive (Route 6772).
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on the entire length of Hill Park Drive from 9:00 p.m. to 6:00 a.m., seven days per week.

Kincannon Place (Route 7569).
Commercial vehicles, recreational vehicles, and trailers as defined in Fairfax County Code Sections 82-5-7(b) and 82-5B-1 shall be restricted from parking on the entire length of Kincannon Place, from 9:00 p.m. to 6:00 a.m., seven days per week.

Attachment II



Board Agenda Item
September 10, 2013

3:30 p.m.

Board Decision on the Proposed Interim Development Agreement Between the Board of Supervisors and Lake Anne Development Partners LLC for the Redevelopment of the Crescent Apartment Site (Hunter Mill District)

ISSUE:
Board decision on the Interim Development Agreement with Lake Anne Development Partners LLC for the Redevelopment of the Crescent Apartment Site. The Interim Development Agreement would, among other things, permit LADP to conduct due diligence on the site as well as to file a rezoning action on the property.

RECOMMENDATION:
The County Executive recommends that the Board approve the Interim Development Agreement and authorize the County Executive, or his designee, to sign the Interim Development Agreement.

TIMING:
Pursuant to Section 15.2-1800 of the Code of Virginia, a public hearing is required for the disposition of public property. In addition, pursuant to the PPEA requirements, the Board is required to hold a public hearing on any proposed interim or comprehensive agreement at least thirty days prior to entering into such agreement. On July 9, 2013, the Board authorized advertisement of the public hearing, which was held on Tuesday July 30, 2013, at which time the decision was deferred to accommodate the comment period.

BACKGROUND:
The Crescent property is located within the Lake Anne Commercial Revitalization Area (CRA) on Cameron Crescent Drive in Reston. As part of its efforts to encourage and guide the revitalization of the Lake Anne Village Center (LAVC) and to preserve affordable housing, in February 2006, the County purchased the Crescent property for $49,500,000.00. The property contains 181 garden style multi-family affordable units.

In 2009, the Board adopted an amendment to the Comprehensive Plan that provides guidance on the mix of uses and intensities recommended to foster the redevelopment of the LAVC.

On February 9, 2012, the County publically advertised Request for Proposal RFP2000000125; Crescent Redevelopment (RFP) under the Public-Private

Education and Infrastructure Act of 2002 (PPEA) for the redevelopment of the 16.5 acre Crescent property. The RFP encouraged potential offerors to partner with owners of adjacent land units within the LAVC to achieve a comprehensive redevelopment plan that aligned with the vision of the Comprehensive Plan, including the preservation of affordable housing, the creation of additional workforce housing and a development that would serve as a catalyst for the revitalization of the LAVC.

Eight (8) proposals were received in response to the RFP. A Selection Advisory Committee (SAC) was formed comprised of representatives from the County's Office of Community Revitalization, Department of Housing and Community Development, Department of Planning and Zoning, Department of Management and Budget, and Department of Public Works and Environmental Services. A Technical Advisory Committee (TAC) was also formed to provide technical input. The TAC included representatives of the community, as well as additional County staff with technical expertise. The SAC evaluated the eight proposals in accordance with the criteria and procedures established in the RFP. The SAC considered the merits of the Technical and Financial Proposals of each offeror, conducted oral interviews with top ranked candidates, and received written responses to clarification questions and negotiation points from the top ranked offerors. The SAC evaluated and ranked the proposals in accordance with the criteria and procedures set forth in the RFP and concluded that LADP best demonstrates the ability and capacity to meet the County's needs as identified in the RFP, and seeks to enter into an Interim Development Agreement with them.

The Interim Development Agreement establishes general terms and conditions that may lead to a Master Development Agreement between the County and LADP. Among other items, the Interim Development Agreement:

- permits LADP to file the necessary applications for zoning and land use approvals (land use entitlements) prior to execution of a final, full Master Development Agreement regarding the redevelopment of the Property and other parcels in the LAVC ("Project");

- designates LADP as the Board's agent for the limited purpose of pursuing the land use entitlements with respect to the Property;

- permits LADP to enter the property to conduct studies such as soil samples;

- requires LADP to consult and coordinate with the County regarding the design of the Project, so that it is consistent with the development submitted in response to the RFP;

- requires LADP to file its land use entitlement applications within 90 days of the date of the Interim Development Agreement;

- requires the parties to coordinate on and diligently pursue the land use entitlements, although the County's approval and execution of the proffered conditions shall be in the County's sole and absolute discretion;

- requires that the land use entitlement applications include the Crescent property as well as the adjacent service station and "Land Unit A", as defined in the Fairfax County Comprehensive Plan for LAVC;

- requires that the realignment of Village Drive and the provision of 181 replacement affordable units be part of the first phase of development;

- requires a relocation plan for the residents of the Crescent apartments that is subject to the approval of the County and the FCRHA and that provides the option for current residents at the time of redevelopment to be able to live at the Property at affordable rents provided that they meet eligibility requirements;

- requires that LADP be responsible for all costs associated with the land use entitlement process;

- establishes that the parties will pursue negotiations, diligently and in good faith, of a Master Development Agreement that addresses the financial and transactional aspects of the redevelopment of the Project, with the approval of the Master Development Agreement to occur coincident with the approval of the land use entitlements;

- establishes that the County shall have no obligation to contribute financially to the redevelopment of the Project;

- requires LADP to pay a deposit upon execution of the Master Development Agreement that is to be non-refundable unless the County defaults under the terms of the Master Development Agreement; and,

- requires full payment for last phase of any land to be conveyed by sale, and ground rent commencement for last phase of any land to be conveyed by ground lease, no later than December 31, 2018.

The Interim Development Agreement has been posted on the county web site by the Department of Purchasing and Supply Management and is available at _ttp://www.fairfa_county.go_/dps_/solic2._t__ppea.

FISCAL IMPACT:
The Interim Development Agreement establishes the general parameters for the sale of a portion of the property and a ground lease on the remainder of the property. Final terms and conditions will be contained in a Master Development Agreement to be negotiated between the Board and LADP.

ENCLOSED DOCUMENTS:
Attachment 1: Interim Development Agreement
Attachment 2: Resolution

STAFF:
Barbara Byron, Director, Office of Community Revitalization (OCR)
Paula C. Sampson, Director, Department of Housing and Community Development (HCD)

INTERIM AGREEMENT

This **INTERIM AGREEMENT** ("Agreement") is made this ___ day of September 2013, by and between the **BOARD OF SUPERVISORS OF FAIRFAX COUNTY, VIRGINIA**, a political subdivision of the Commonwealth of Virginia, in its proprietary capacity, and not in its governmental or regulatory capacity (the "County"), and **LAKE ANNE DEVELOPMENT PARTNERS LLC**, a Virginia limited liability company ("LADP").

RECITALS:

R-1. The County is the fee simple owner of a 16.5 acre tract of land in Reston, Virginia, collectively having tax assessment numbers as 17-2-((16))-1A and 17-2-((14))-(1)-2G, upon which certain residential apartment buildings are built and which are commonly referred to as the Crescent Apartments (the "Property").

R-2. The Property is currently leased to the Fairfax County Redevelopment and Housing Authority ("FCRHA") pursuant to an agreement by and between the County and the FCRHA.

R-3. The Property currently consists of five garden-style 3-story apartment buildings, containing a total of 181 units, which are currently affordable to households earning 60% or below of the area median income ("AMI"), as defined and published by the applicable federal authorities.

R-4. On March 30, 2009, the County, in its regulatory capacity, adopted an amendment to the County's Comprehensive Plan which revised the boundaries of the Lake Anne Village Center ("LAVC") and the LAVC Commercial Revitalization Area ("CRA"), and which provided, among other things, a maximum allowable density of 935 dwelling units on "Land Unit D", which is comprised of the Property and a 0.85 acre parcel (the "Gas Station Parcel") owned by G and K Inc., a Virginia corporation (the "Gas Station Owner"), designated as Tax Map Number 17-2 ((1))-7.

R-5. Pursuant to that certain Request for Proposal Number RFP-2000000-125, dated February 9, 2012, and issued under the auspices of the Public Private Education Facilities and Infrastructure Act of 2002, Virginia Code Ann. §§ 56-575.1 et seq. (2012) (such Request for Proposal, as subsequently amended by certain addendums, collectively, the "RFP"), the County desired to enter into a contract with a developer for the redevelopment of the Property which would, among other things, achieve a comprehensive redevelopment plan that aligned with the vision of the Comprehensive Plan, including the preservation of affordable housing, the creation of additional workforce housing and a development that would serve as a catalyst for the revitalization of the LAVC.

R-6. LADP submitted a response to the RFP (as amended, the "LADP Response") which was determined to be the most responsive to the RFP.

R-7. The County and LADP desire to enter into this Agreement in order to initiate certain actions, set forth below, in furtherance of the LADP Response and the negotiations conducted to date.

R-8. Given the complexity of the potential development of the Property and the shared desire of the County and LADP to commence design- and zoning-related work as soon as possible, the parties agree that it is necessary to file the necessary applications for zoning and land use approvals prior to execution of a final, full development agreement regarding the redevelopment of the Property and other parcels in the LAVC (such redevelopment, the "Project").

R-9. Notwithstanding that a final master development agreement regarding the Project has not been executed, and with full recognition that the parties may be unsuccessful in concluding a final master development agreement regarding the Project, the County has agreed to allow LADP the right to pursue the land use planning, design, and other work activities necessary to obtain approval of the Land Use Entitlement Approvals (as defined below) and shall appoint LADP its agent with respect to the Project and the Property, subject to and in accordance with the terms hereof.

NOW, **THEREFORE**, in consideration of the Recitals, which are hereby incorporated into this Agreement by reference, the mutual covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Term of Agreement. This Agreement shall commence on the date hereof and continue unless otherwise terminated in accordance with the terms hereof.

2. Designation of LADP as Agent.

a. The County hereby designates LADP as its agent for the limited purpose of pursuing the Land Use Entitlement Approvals with respect to the Property and the Project, subject to the terms and conditions set forth in this Agreement, and LADP hereby accepts such designation.

b. The County hereby acknowledges and agrees that LADP, as the County's agent, is hereby authorized to commence land use planning, design, and other work activities necessary to obtain the following with respect to the Property and the Project (collectively, the "Land Use Entitlement Approvals"), which shall include, without limitation:

i. Proffered Condition Amendment (PCA) / Development Plan Amendment (DPA) and a PRC Plan application (each as defined in the appropriate regulations promulgated by the Fairfax County Department of Planning and Zoning ("DPZ"));

ii. Conceptual approval of the Design Review Board for Reston Association;

iii. Recommendation of the Architectural Review Board; and

iv. Any other regulatory approvals necessary in connection with the above.

c. LADP hereby acknowledges and agrees that the agency created hereby is temporary and shall immediately terminate upon any termination of this Agreement in accordance with the terms hereof. Upon such termination of the agency created hereby, LADP shall immediately cease all work with respect to the Land Use Entitlement Approvals and, thereafter, LADP shall have no further duty or obligation to pursue the Land Use Entitlement Approvals on behalf of the County.

3. Agreement Regarding Land Use Entitlement Approval Process.

a. LADP shall (i) consult and coordinate with the County regarding the design of the Project, and (ii) provide prior written notice and request for approval regarding all submissions to be made in connection with the Land Use Entitlement Approvals. Unless otherwise waived or modified in writing by the County, LADP shall provide the County, in its proprietary capacity, a copy (in any format desired by the County, i.e.: electronic, paper, or physical copies of documents due to size or volume) of all submissions to be made in connection with the Land Use Entitlement Approvals for the County's review and approval eight (8) business days prior to LADP's anticipated filing with or submission of the same to the applicable governmental agencies. All such notices and requests required of LADP by this Section 3(a) shall not be subject to the Notice provisions of Section 6 below; instead, all Notices required in this Section 3(a) (including requests for approvals) shall be delivered to Barbara A. Byron, Director of the Office of Community Revitalization, with a copy to Rex Peters, Department of Housing and Community Development, and/or any other person(s) as may be delegated by Barbara A. Byron, and in such format as may be requested. Approval of such submissions shall be in the County's sole and absolute discretion; *provided*, *however*, that the County's approval of any and all such submissions shall not be unreasonably withheld on the basis of County comments that do not reasonably reflect refinement of the scope and substance of prior approved submissions, unless such comments are in response to issues or questions raised by the County, in its governmental / regulatory capacity, as part of the Land Use Entitlement Approval process. If the County fails to notify LADP in writing of either its approval or disapproval of any such submissions within eight (8) business days after its receipt of the same from LADP, then LADP may proceed with the submission of the same; however it shall be understood that such submission shall not be deemed to be approved by the County. Any County approval of submissions by LADP shall be in the County's capacity as land owner, and shall not be construed to imply approval as a regulator.

b. LADP shall file its initial land use application with the County in its regulatory capacity for the Land Use Entitlement Approvals within ninety (90) days of the date of this Agreement.

c. The County shall be obligated to diligently pursue any consent of the Board of Supervisors that may be required in connection with the Land Use Entitlement

Approvals, and to otherwise reasonably cooperate with LADP in the pursuit of the Land Use Entitlement Approvals.

d. It is further acknowledged and understood that the rezoning of the Property will require execution of proffered conditions by LADP and the County. The County and LADP shall consult and coordinate as to the substance of such proffered conditions. The County's approval and execution of the proffered conditions shall be in the County's sole and absolute discretion; provided, however, that such approval and execution shall not be unreasonably withheld, conditioned or delayed with respect to proffered conditions that (i) are reasonably related to elements of Land Use Entitlement Approval submissions previously approved by the County, in its proprietary capacity, and (ii) otherwise reflect the obligations of this Agreement and the MDA.

e. It is further acknowledged and understood that the County may decline to approve LADP's proposed Land Use Entitlement Approval submission(s) if they do not provide for the inclusion and consolidation of, at a minimum, the Gas Station Parcel and "Land Unit A", as defined in the Fairfax County Comprehensive Plan for LAVC and including Fairfax County Tax Map Parcel Numbers 17-2 ((07)) 6B2 and 17-2 ((31)) 1645, portions of Tax Map Parcels 17-2 ((07)) 6B3 and 17-2 ((08)) 6C, and a portion of the Lake Anne of Reston Condominium common areas.

f. LADP shall be responsible for all costs associated with the Land Use Entitlement Approvals (such costs, the "LADP Costs"), and the County shall not be obligated to reimburse to LADP any costs associated with the Land Use Entitlement Approvals. Upon any termination of this Agreement, LADP agrees that, pursuant to the terms and conditions of this Agreement, LADP shall (i) assign all of its rights and interests (if any) in and to any obtained Land Use Entitlement Approvals, and deliver (or cause to be delivered) originals or copies of any and all other documents related to the same to the County, and (ii) assign to the County all of its rights and interests to, and provide and deliver (or cause to be provided or delivered) to the County any and all work product produced by LADP and/or its contractors and consultants associated with the Project, together with any third-party consents necessary therefor (collectively, roman numerals (i) and (ii) in this sentence shall be referred to as the "Work Product"). The foregoing obligations of LADP shall survive the termination of this Agreement.

g. During the term of this Agreement, LADP and its agents may access the Property upon reasonable advance notice to the County – including, for purposes of this Section 3(g), notice to Rex Peters of the County's Department of Housing and Community Development – in order to conduct such activities as LADP reasonably determines are necessary or appropriate in connection with the Land Use Entitlement Approvals process. LADP shall conduct such activities in a manner so as to minimize any disturbance to the residents and operations of Crescent Apartments. LADP shall, and shall cause any of its employees or agents entering onto the Property to, deliver to the County certificates of insurance listing the County as an additional insured and evidencing general liability insurance coverage in the amount of $1,000,000. LADP shall further (i) repair and restore any damage to the Property or the improvements thereon caused by LADP's activities (or those of its employees or agents) under this sub-section, and (ii) indemnify, defend, and hold the County harmless from and against any and all liability, cost, or

expense, including any damage to the Property or the improvements thereon, resulting or arising from LADP's activities (or those of its employees or agents) under this sub-section, except to the extent caused by the negligence or willful act or omission of the County, its agents, or employees. Notwithstanding anything herein to the contrary, neither this sub-section, nor any portion thereof, nor any other provision in this Agreement shall constitute a waiver of the County's sovereign immunity.

4. Pursuit of Master Development Agreement. The parties agree to pursue negotiations, diligently and in good faith, of a master development agreement (an "MDA") to fully provide for the development of the Project generally consistent with the RFP, the LADP Response, and the negotiations conducted to date, with the expectation of concluding negotiations by 11:59 p.m. eastern time on the date that is eighteen (18) months after the date of this Agreement (or such later date as may be mutually agreed upon in writing by the parties, the "Outside Date"). The parties further agree that execution of the MDA, by all parties, and the approval of the MDA by the Board of Supervisors of Fairfax County, Virginia are both to occur concurrently with the obtaining and approval by all applicable governmental authorities of the last of the Land Use Entitlement Approvals to be obtained. The MDA will provide, inter alia, a comprehensive agreement for the rights and responsibilities of each party regarding the entire development of the Project, including, without limitation:

- The County shall have no obligation to contribute financially to the Project;

- The purchase price(s) and/or ground rent(s), as applicable, to be paid by LADP for the Property, and the terms of such conveyances, shall be set forth in the MDA;

- LADP shall pay a deposit (10% of the purchase price of land to be sold in fee simple, together with 100% of ground rent for the first full stabilized year of operation of land to be ground leased) upon execution of the MDA that is to be non-refundable unless the County defaults under the MDA;

- Full payment for last phase of any land to be conveyed by sale, and ground rent commencement for last phase of any land to be conveyed by ground lease, must occur no later than December 31, 2018;

- Neither the sales price nor ground rent shall decline as a result of the entitlement process, changes in market economics, project financing, tax credit awards, or other circumstances;

- Values are to be expressed in terms of 2013 dollars, with discount rates or escalation factors to be discussed;

- A relocation plan for the residents of the Crescent Apartments, subject to the approval of the County and the FCRHA and that provides the option for then-current residents at the time of redevelopment to be able to live at the Property at affordable rent levels, provided they meet eligibility requirements;

- The realignment of Village Road, and the provision of at least 181 replacement affordable units must be part of the first phase of development;

- County support for the timely relocation for the Village Road right-of-way through VDOT; and

- If LADP does not acquire, directly or indirectly, Land Unit A, the County, at its option, may terminate the MDA.

5. Termination. To the extent this Agreement is terminated pursuant to any of the subsections listed below, the County shall not be obligated to reimburse LADP for the LADP costs and any other costs incurred by LADP under this Agreement, and the Work Product shall, upon written request of the County, immediately be turned over to the County as soon as reasonably possible. The provisions of this Section shall survive the termination of this Agreement.

a. In the event the parties are unable to reach agreement upon the terms and conditions of the MDA by the Outside Date, this Agreement may be terminated by the County upon written notice to LADP and the parties hereto shall have no further rights or obligations hereunder, except the terms of which shall expressly survive such termination.

b. In the event of (A) any breach of this Agreement by the County which is not cured within thirty (30) days after the County's receipt of written notice of such breach from LADP, or (B) LADP's reasonable determination that it shall be unable to obtain the Land Use Entitlement Approvals, *then*, LADP shall have the right to terminate this Agreement upon written notice to the County, and the parties hereto shall have no further rights or obligations hereunder, except the terms of which expressly survive such termination.

c. In the event of any breach of this Agreement by LADP which is not cured within thirty (30) days after LADP's receipt of written notice of such breach from the County, the County shall have the right to either (i) terminate this Agreement, or (ii) pursue any and all other remedies available to the County at law or in equity.

6. Notice. Any notices required or permitted to be given hereunder shall be deemed to have been properly given when received or refused if sent by United States certified or registered mail, return receipt requested; national overnight courier service; or delivered in hand; in each case as follows (unless changed by similar notice in writing given by the particular person whose address is to be changed):

If to the County:

Board of Supervisors of Fairfax County, Virginia
12000 Government Center Parkway
Fairfax, Virginia 22035-0064
Attention: County Executive

With copies to:

Department of Community Revitalization
12055 Government Center Parkway, Suite 1048
Fairfax, Virginia 22035
Attention: Barbara A. Byron

And:

Office of the County Attorney
12000 Government Center Parkway, Suite 549
Fairfax, Virginia 22035
Attention: Ryan Wolf

If to LADP:

Republic Land Development LLC
11401 North Shore Drive
Reston, Virginia 20190
Attention: David L. Peter

With copies to:

Walsh Colucci Lubeley Emrich & Walsh, PC
2200 Clarendon Boulevard, Suite 1300
Arlington, Virginia 22201
Attention: Thomas J. Colucci, Esq.

7. Miscellaneous Provisions.

a. Appropriations. Any and all of County's financial obligations under this Agreement are subject to appropriations by the Board to satisfy payment of such obligations.

b. Attorney's Fees. In the event there arises any disputes under this Agreement and said disputes result in litigation between the parties, the prevailing party shall be entitled to recover from the non-prevailing party all reasonable attorney's fees incurred by the prevailing party in any such litigation, including the value of legal services, if any, provided by the Office of the County Attorney of Fairfax County.

c. Binding Effect. This Agreement shall, be binding upon and inure to the benefit of the parties hereto, their successors and permitted assigns. Neither party hereto may assign its rights or delegate its obligations hereunder.

d. Counterparts. If this Agreement shall be executed in two or more counterpart originals, each counterpart original shall be for all purposes considered an original of this Agreement.

e. Further Assurances. At the request of either party, LADP and the County shall promptly execute and deliver such other further instruments and documents as may from time to time be requisite in order to consummate the intent of the parties provided herein.

f. Headings. The section headings are herein used for convenience of reference only and shall not be deemed to vary the content of this Agreement or the covenants, agreements, representations and warranties herein set forth or the scope of any section.

g. Incorporation. The Recitals and Exhibits are hereby incorporated into this Agreement as if fully set forth herein.

h. Governing Law. This Agreement shall be governed by and construed under the laws of the Commonwealth of Virginia.

i. Holidays, Business Days, etc. Whenever the last day for the performance of any act required by either party under this Agreement shall fall upon a Saturday, Sunday, legal holiday, or day on which national banks doing business in the Washington D.C. area are generally closed for business, the date for the performance of any such act shall be extended to the next succeeding business day which is not a Saturday, Sunday, legal holiday, or day on which such bank is closed.

j. No Third Party Beneficiaries. No person or entity shall be a third party beneficiary of this Agreement.

k. Partial Invalidity. If any provision of this Agreement shall be determined to be void by any court of competent jurisdiction, then such determination shall not affect any other provision hereof, all of which other provisions shall remain in full force and effect; and it is the intention of all the parties hereto that if any provision of this Agreement capable of two constructions, one of which would render the provision void and the other of which would render the provision valid, then the provision shall have the meaning which renders it valid.

l. Waiver, Modification. Failure by either party to insist upon or enforce any of its rights hereto shall not constitute a waiver thereof. This Agreement shall not be modified, amended, or altered except by a written agreement signed by each of the parties hereto.

m. Survival. Except as otherwise specifically provided herein, the provisions of this Agreement shall not survive termination hereunder.

n. Time. With respect to all time periods contained in this Agreement, it is expressly understood that time shall be of the essence.

o. Waiver of Jury Trial. Each party hereby knowingly waives trial by jury in any action, proceeding, claim or counterclaim brought by either party in connection with any matter arising out of or in any way connected with this Agreement, the relationship of the parties hereunder, the parties' ownership or use of the land subject to this Agreement, and/or any claims

of injury or damage.

p. The foregoing provisions of this Section shall survive the termination of this Agreement.

(*Remainder of Page Blank; Signatures Follow*)

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date first written above.

COUNTY:

BOARD OF SUPERVISORS OF FAIRFAX COUNTY, VIRGINIA, acting in its proprietary capacity and not in its governmental or regulatory capacity

By: _____
Name: _____
Title: _____

COMMONWEALTH OF VIRGINIA

COUNTY OF FAIRFAX, to-wit:

Subscribed and sworn to before me this ____ day of _____, 2013, by _____.

_____
Notary Public

My Commission Expires: _____
Registration Number: _____

LADP:

LAKE ANNE DEVELOPMENT PARTNERS LLC, a Virginia limited liability company

By: _____
Name: David L. Peter
Title: Manager

COMMONWEALTH OF VIRGINIA

COUNTY OF FAIRFAX, to-wit:

Subscribed and sworn to before me this ____ day of _____, 2013, by David L. Peter, Manager of Lake Anne Development Partners LLC.

_____
Notary Public

My Commission Expires: _____
Registration Number: _____

ATTACHMENT 2

RESOLUTION AUTHORIZING INTERIM AGREEMENT FOR CRESCENT REDEVELOPMENT

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held in the Board Auditorium in the Fairfax County Government Center at Fairfax, Virginia, on Tuesday, September 10, 2013, at which meeting a quorum was present and voting, the following resolution was adopted:

WHEREAS, the Board of Supervisors ("Board") conducted a public hearing on July 30, 2013, to consider an Interim Agreement ("Interim Agreement") with Lake Anne Development Partners LLC for the redevelopment of the Crescent Apartment Site in accordance with the requirements of the Public-Private Education and Infrastructure Act of 2002, as amended, Va. Code Ann § 56-575.1 to -575.16; and

WHEREAS, the Board finds that it would be in the best interest of the citizens of Fairfax County to enter into the Interim Agreement to implement the transactions contemplated therein.

NOW, THEREFORE, it is **RESOLVED** that the Board enter into the Interim Agreement in substantially the form attached hereto, and that the County Executive, or his designee, is hereby authorized to execute the Interim Agreement and all other documents necessary or convenient to carry out the transactions contemplated therein, and to take all such actions as shall be appropriate to implement the terms of the Interim Agreement.

A Copy – Teste:

_____

Catherine A. Chianese
Clerk to the Board of Supervisors

Board Agenda Item
September 10, 2013

3:30 p.m.

Public Hearing on PCA 94-V-010 (Inova Health Care Services) to Amend the Proffers for RZ 94-V-010 Previously Approved for a Medical Care Facility (Hospital) with a Child Care Center with Overall Floor Area Ratio of 0.62 to Permit Modifications of Approved Proffers Associated with the Child Care Center, Located on Approximately 26.37 Acres of Land zoned C-3 (Mount Vernon District)

This property is located in the North West quadrant of the intersection of Holland Road and Hinson Farm Road. Tax Map 102-1 ((1)) 4 pt.

PLANNING COMMISSION RECOMMENDATION:
On Thursday, July 25, 2013, the Planning Commission voted unanimously (Commissioners Hall and Sargeant absent from the meeting) to recommend that the Board of Supervisors approve PCA 94-V-010 subject to the execution of proffers consistent with those dated June 25, 2013.

ENCLOSED DOCUMENTS:
Attachment 1 – Planning Commission Verbatim
Staff Report previously furnished and available online at:
http://ldsnet.fairfaxcounty.gov/ldsnet/ldsdwf/4421390.PDF

STAFF:
Barbara Berlin, Director, Zoning Evaluation Division, Department of Planning and Zoning (DPZ)
Meghan Brady, Planner, DPZ

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Planning Commission Meeting ATTACHMENT 1
July 25, 2013
Verbatim Excerpt

PCA 94-V-010 – INOVA HEALTH CARE SERVICES

After Close of the Public Hearing

Chairman Murphy: Without objection, the public hearing is closed; go to the Mount Vernon District, PCA 94-V-010. Mr. Flanagan.

Commissioner Flanagan: Thank you, Mr. Chairman. Although we do not have any testimony tonight, we do have for the record a letter from the Mount Vernon Council endorsing the Proffered Condition Amendment request from Inova Mount Vernon Hospital to remove the limitation of on-site child care to Inova employees, provided amendment the included text that will give preference to children of Inova employees. That letter was distributed to staff – by staff to the Commissioners on June 4th and is also included in your folder tonight. Inova, since then, has added the preference text to the amendment and staff, on July 2nd, is recommending approval. I agree. I, therefore, MOVE THAT THE PLANNING COMMISSION RECOMMEND TO THE BOARD OF SUPERVISORS APPROVAL OF PCA 94-V-010, SUBJECT TO THE EXECUTION OF PROFFERS CONSISTENT WITH THOSE DATED JUNE 25th, 2013.

Commissioners Hedetniemi and Litzenberger: Second.

Chairman Murphy: Seconded by Ms. Hedetniemi and Mr. Litzenberger. Is there a discussion of the motion? All those in favor of the motion to recommend to the Board of Supervisors that it approve PCA 94-V-010, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed? Motion carries.

//

(The motion carried unanimously with Commissioners Hall and Sargeant absent from the meeting.)

JLC

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Board Agenda Item
September 10, 2013

3:30 p.m.

Public Hearing on PCA 2000-SU-032-04 (Inova Health Care Services) to Amend the Proffers for RZ 2000-SU-032 Previously Approved for a Medical Care Facility (Hospital) with a Child Care Center with Overall Floor Area Ratio of 0.34 to Permit Modifications of Approved Proffers Associated with the Child Care Center, Located on Approximately 62.79 Acres of Land Zoned C-3 and WS (Sully District)

This property is located South of Ox Trail, East of Rugby Road, North and South of Alder Woods Drive. Tax Map 45-2 ((1)) 41B1, 41L, 41L3, 41L4, 41L5; 45-2 ((2)) 38, 39A, 39B, 46A1 and 51A1.

PLANNING COMMISSION RECOMMENDATION:
On Thursday, July 25, 2013, the Planning Commission voted unanimously (Commissioners Hall and Sargeant absent from the meeting) to recommend that the Board of Supervisors approve PCA 2000-SU-032-04 subject to the execution of proffers consistent with those dated May 31, 2013.

ENCLOSED DOCUMENTS:
Attachment 1: Planning Commission Verbatim
Staff Report previously furnished and available online at:
http://ldsnet.fairfaxcounty.gov/ldsnet/ldsdwf/4421576.PDF

STAFF:
Barbara Berlin, Director, Zoning Evaluation Division, Department of Planning and Zoning (DPZ)
William O'Donnell, Planner, DPZ

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Planning Commission Meeting Attachment 1
July 25, 2013
Verbatim Excerpt

PCA 2000-SU-032-04 – INOVA HEALTH CARE SERVICES

After Close of the Public Hearing

Chairman Murphy: Sully District. Mr. Litzenberger; PCA 2000-SU-032-04.

Commissioner Litzenberger: Thank you, Mr. Chairman. Both land use committees in Sully strongly supported the opportunity to expand daycare at the Inova Fair Oaks Hospital. Therefore, Mr. Chairman, I MOVE THAT THE PLANNING COMMISSION RECOMMEND APPROVAL OF PCA 2000-SU-032-04, SUBJECT TO THE EXECUTION OF PROFFERS CONSISTENT WITH THOSE DATED MAY 31ST, 2013.

Commissioners Flanagan and Hedetniemi: Second.

Chairman Murphy: Seconded by Ms. Hedetniemi and Mr. Flanagan. Is there a discussion of that motion? All those in favor of the motion to recommend to the Board of Supervisors that it approve PCA 2000-SU-032-04, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed? Motion carries.

//

(The motion carried unanimously with Commissioners Hall and Sargeant absent from the meeting.)

JLC

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Board Agenda Item
September 10, 2013

3:30 p.m.

Public Hearing on PCA 2008-PR-009-02 (Inova Health Care Services) to Amend the Proffers for RZ 2008-PR-009 Previously Approved for a Medical Care Facility (Hospital) with a Child Care Center with Overall Floor Area Ratio of 0.80 to Permit Modifications of Approved Proffers Associated with the Child Care Center, Located on Approximately 64.89 Acres of Land Zoned C-3 (Providence District)

This property is located in the North West quadrant of the intersection of Gallows Road and Woodburn Road. Tax Map 49-3 ((39)) 4B, 5B, 6, 7, 7L and 59-2 ((1)) 1A1 and 1D1.

PLANNING COMMISSION RECOMMENDATION:
On Thursday, July 25, 2013, the Planning Commission voted unanimously (Commissioners Hall and Sargeant absent from the meeting) to recommend that the Board of Supervisors approve PCA 2008-PR-009-2 subject to the execution of proffers consistent with those dated July 16, 2013.

ENCLOSED DOCUMENTS:
Appendix 1 – Planning Commission Verbatim
Staff Report previously furnished and available online at:
http://ldsnet.fairfaxcounty.gov/ldsnet/ldsdwf/4421579.PDF

STAFF:
Barbara Berlin, Director, Zoning Evaluation Division, Department of Planning and Zoning (DPZ)
William O'Donnell, Planner, DPZ

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Planning Commission Meeting
July 25, 2013
Verbatim Excerpt

PCA 2008-PR-009-02 – INOVA HEALTH CARE SERVICES

After Close of the Public Hearing

Chairman Murphy: Mr. Lawrence in the Providence District; PCA 2008-PR-009-02.

Commissioner Lawrence: Mr. Chairman, I intend to move this matter. If I may, however, I have a question that I want to ask the applicant before I move.

Chairman Murphy: All right.

Commissioner Lawrence: Mr. Sampson, during the course of the last couple of weeks, I had occasion to make a site visit to Inova Fairfax Hospital. And I have to recognize the excellence of County employee performance and its's engine truck 430. The EMTs were wonderful. Professional services and facilities on my site visit were provided on Ward 633, if I recall it, and those people deserve a shout-out. However, during the time that I was there, various members of my family came to visit me and the first trouble they had was finding me. I know we've had earlier discussions about Wayfinding and I know I've let you know that we'd like very much to hear what is happening with the phased Wayfinding program that Inova has embarked on at that hospital. Could you tell us, please?

Timothy Sampson, Esquire, Walsh, Colucci, Lubeley, Emrich & Walsh, PC: I can. First of all, I'm very glad that you're back here instead of there. Secondly, the hospital at Fairfax, as at Fair Oaks and Mount Vernon, is under construction substantially at this time. And that has – it causes a disruption to the ability to get around the campus and to get around within the – within the complex, given all the changes that are occurring. In connection with the construction effort, there is a Comprehensive Sign Plan for Wayfinding that the hospital has prepared and is implementing in phases as the construction progresses. The first substantial phase of that was implemented last summer when the new boulevard – Wellness Boulevard was opened to traffic. That's the one that comes in from the south off of Woodburn Road. There is – you know, so there are, I believe, 30 new Wayfinding signs that have been installed with that phase of the project. As the project continues – the completion of the women's hospital is expected in late 2015 – and with that would come the second phase of the exterior Wayfinding signs, which is about another 35 signs on the exterior, if I remember correctly. So it is a concern that is appreciated and understood and is not – you're not the only one having expressed it. It's something the hospital is working on as the construction progresses and will hopefully be something that is improved condition as the construction nears completion.

Commissioner Lawrence: Well then perhaps you can help us all to find the way. Mr. Chairman, I'm ready to move.

Chairman Murphy: Okay.

Commissioner Lawrence: I MOVE THAT THE PLANNING COMMISSION RECOMMEND APPROVAL OF PCA 2008-PR-009-02, SUBJECT TO THE EXECUTION OF PROFFERS CONSISTENT WITH THOSE NOW DATED JULY 16TH, 2013.

Commissioner Hedetniemi: Second.

Chairman Murphy: Seconded by Ms. Hedetniemi. Is there a discussion of the motion? All those in favor of the motion to recommend to the Board of Supervisors that it approve PCA 2008-PR-009-02, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed? Motion carries. Thank you very much everyone. Thank you, Mr. Sampson, Mr. O'Donnell, and Ms. Brady. Thank you very much.

//

(The motion carried unanimously with Commissioners Hall and Sargeant absent from the meeting.)

JLC

Board Agenda Item
September 10, 2013

3:30 p.m.

Public Hearing on RZ 2013-BR-003 (The Evergreene Companies, LLC) to Rezone from R-1 to PDH-3 to Permit Residential Development with an Overall Density of 2.35 du/ac and Approval of the Conceptual Development Plan, Located on Approximately 4.26 Areas of Land (Braddock District)

This property is located at 9717, 9719, 9721 and 9723 Braddock Road, Fairfax, 22032. Tax Map 69-1 ((1)) 39B, 39C, 40A and 40B.

PLANNING COMMISSION RECOMMENDATION:
On Thursday, July 18, 2013, the Planning Commission voted unanimously (Commissioner Lawrence not present for the vote and Commissioner Migliaccio absent from the meeting) to recommend that the Board of Supervisors approve RZ 2013-BR-003, subject to the execution of proffers consistent with those dated June 24, 2013.

In a related action, the Planning Commission voted unanimously (Commissioner Lawrence not present for the vote and Commissioner Migliaccio absent from the meeting) to approve FDP 2013-BR-003, subject to the Board's approval of RZ 2013-BR-003 and the Conceptual Development Plan.

ENCLOSED DOCUMENTS:
Attachment 1 – Planning Commission Verbatim
Staff Report previously furnished and available online at:
http://ldsnet.fairfaxcounty.gov/ldsnet/ldsdwf/4421603.PDF

STAFF:
Barbara Berlin, Director, Zoning Evaluation Division, Department of Planning and Zoning (DPZ)
William O'Donnell, Planner, DPZ

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Planning Commission Meeting
July 18, 2013
Verbatim Excerpt

RZ/FDP 2013-BR-003 – THE EVERGREENE COMPANIES, LLC

After Close of the Public Hearing

Chairman Murphy: Public hearing is closed; recognize Ms. Hurley.

Commissioner Hurly: Thank you, Mr. Chairman. As I just mentioned, the developer has been working particularly well with the Briarwood HOA on this proposal and, in turn, the HOA is setting a fine example of how to meld infill development with the existing community. And the Briarwood HOA has indicated a willingness to welcome these new neighbors to use their existing tot lot, but it's a location that needs some help with stormwater management. So as we just heard, they'll continue working this before the Board of Supervisors' hearing. In particular, I'm referring to Proffer 28 on off-site recreation that states, "The applicant shall contribute $19,646 to the Fairfax County Board of Supervisors upon issuance of the first RUP." That's the part that needs to be looked at and possibly changed before – modified before the Board of Supervisors. And I do have to note, again, the exceptionally fine work of Mr. O'Donnell and the developer and the Briarwood HOA. The Braddock Land Use Committee has carefully reviewed this product (*sic*) – or this project – earlier this week. They voted unanimously in support of the proposal. Therefore, Mr. Chairman, I MOVE THAT THE PLANNING COMMISSION RECOMMEND APPROVAL OF RZ 2013-BR-003, SUBJECT TO THE EXECUTION OF PROFFERS CONSISTENT WITH THOSE DATED 24 JUNE, 2013.

Commissioner Sargeant: Second.

Chairman Murphy: Seconded by Mr. Sargeant. Is there a discussion of the motion? All those in favor of the motion to recommend to the Board of Supervisors that it approve RZ 2013-BR-003, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed? Motion carries.

Commissioner Hurley: And secondly, I MOVE THAT THE PLANNING COMMISSION APPROVE FDP 2013-BR-003, SUBJECT TO THE BOARD'S APPROVAL OF THE CONCURRENT REZONING APPLICATION.

Commissioner Sargeant: Second.

Chairman Murphy: Seconded by Mr. Sargeant. Discussion? All those in favor of the motion to approve FDP 2013-BR-003, subject to the Board's approval of the rezoning, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed? Motion carries.

//

(The motions carried unanimously with Commissioner Lawrence not present for the vote; Commissioner Migliaccio absent from the meeting.)

JLC

Board Agenda Item
September 10, 2013

3:30 p.m.

Public Hearing on SEA 93-M-047 (The Parklawn Recreation Association, Inc. & New Cingular Wireless PCS, LLC) to Amend SE 93-M-047 Previously Approved for Uses in a Floodplain to Permit Installation of a Telecommunication Facility Which Includes a 128 Feet Tall Tree Pole or Monopole and Associated Modifications to Site Design and Development Conditions. Located on Approximately 14.54 Acres of Land Zoned R-3 (Mason District)

This property is located at 6011 Crater Place, Alexandria, 22312. Tax Map 61-4 ((6)) (T) 56 and 72-2 ((3)) (T) C.

PLANNING COMMISSION RECOMMENDATION:
On Wednesday, July 10, 2013, the Planning Commission voted unanimously (Commissioner Lawrence absent from the meeting) to recommend the following actions to the Board of Supervisors:

- Approval of SEA 93-M-047, subject to the proposed development conditions dated June 13, 2013; and

- Modification of the transitional screening and barrier requirements in favor of the proposed fencing, existing vegetation, and the supplemental landscaping depicted on the SEA/SPA plat.

In a related action, the Commission voted unanimously (Commissioner Lawrence absent from the meeting) to approve 2232-M08-26. The Commission noted that the application met the criteria of character, location and extent, and was in conformance with Section 15.2-2232 of the *Code of Virginia,* and is substantially in accord with the adopted Comprehensive Plan.

ENCLOSED DOCUMENTS:
Attachment 1 – Planning Commission Verbatim
Staff Report previously furnished and available online at:
http://ldsnet.fairfaxcounty.gov/ldsnet/ldsdwf/4418876.PDF

STAFF:
Barbara Berlin, Director, Zoning Evaluation Division, Department of Planning and Zoning (DPZ)
Rebecca Horner, Planner, DPZ

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Attachment 1

Planning Commission Meeting
July 10, 2013
Verbatim Excerpt

SEA 93-M-047 – THE PARKLAWN RECREATION ASSOCIATION, INC.
2232-M08-26 – NEW CINGULAR WIRELESS PCS, LLC

After Close of the Public Hearing

Chairman Murphy: Public hearing is closed; recognize Ms. Hall.

Commissioner Hall: Thank you, Mr. Chairman. I'll put my mic on this time. Ms. Horner, I just want to confirm that the final date for the proposed development conditions are June 13th, 2013.

Rebecca Horner, Zoning Evaluation Division (ZED), Department of Planning and Zoning (DPZ): That is true for the Special Exception Amendment and you did receive an amended set of development conditions for the Special Permit Amendment tonight, which was misdated. It should reflect today's date - - July 10th.

Kristen Abrahamson, Chief, ZED, DPZ: But if we talk a little longer, it will be right. We're almost to the eleventh.

Commissioner Hall: Okay. I just want to make sure I have the correct dates before I start.

Commissioner de la Fe: It's dated tomorrow. It's dated July 11th.

Commissioner Hart: You don't need the SP conditions. That's not for us. That's for the Board of Zoning Appeals.

Commissioner Hall: Good. All right. I think - - I think we're good. First of all, I would like to thank everyone who came out and spoke this evening and expressed your concerns about this application. This is an application that has been around since 2009. And typically, when you have a public hearing where people will speak in opposition to an application, typically, I know that I would postpone the decision until I could work out any last-minute details to try and get everything resolved. The reality of it is, I could work on this for the next year or two and nothing's going to change. The people who are on Teton are going to see the pole. The bottom line that people believe that you can disguise a monopole 100 percent is just wrong. It can't happen. I mean, it's sticking up there, you know, 128 feet, and you're not going to hide it completely. But we do try our best to work within the parameters of the Comprehensive Plan, and the community and the applicant, to come up with the very best solution, and I think we are probably there. A single pole, I hope and I believe, will not degrade the total vista of this beautiful area. If that were the case, those tacky wooden electrical poles would definitely impact what's going on. Yes, when you moved in 20 years ago – or 25 years ago – there were no poles, but - - there were no monopoles. Sorry. There's lots of poles out there; it's hard to keep them all straight. But the reality of it is that the technology has come this far and people are demanding

the monopoles. They want the service. They want to be able to use all their gadgets. And the government wants to sell the licenses. And they do. And I know that most young people nowadays, they don't have land lines. They've got cell phones. And most people – and we had testimony to this – that when you retire, you really don't want to have to pay for a landline and a cell phone. And I retired and, guess what, I got rid of my land line. And I don't miss all of those courtesy calls that you get during dinner or all those political calls you get during the elections. I don't miss those at all. Not that cell phones are the end-all or the begin-all, but the reality of it is people are using them. And while we try to do the very best to make them fit within our community, sometimes it's not perfect. And I really believe that, after all the work that has gone through with the community, with the citizens, with the applicant, with the staff, with the Commission, we're there. And so, Mr. Chairman, I RECOMMEND THAT THE PLANNING COMMISSION FIND THAT THE PROPOSED TELECOMMUNICATIONS FACILITY, SUBMITTED PURSUANT TO APPLICATION 2232-M08-26, BY NEW CINGULAR WIRELESS, PCS, LLC, WITH PARKLAWN RECREATION ASSOCIATION, INC., DOES SATISFY THE CRITERIA OF LOCATION, CHARACTER, AND EXTENT, AS SPECIFIED BY SECTION 15.2-2232 OF THE *CODE OF VIRGINIA*, AND IS SUBSTANTIALLY IN ACCORD WITH THE ADOPTED COMPREHENSIVE PLAN.

Commissioner Flanagan: Second.

Chairman Murphy: Seconded by Mr. Flanagan. Is there a discussion of the motion?

Commissioner Flanagan: Yes, Mr. Chairman. Yes, I would like say I'm going to support the motion, even though there were 12 speakers that were in opposition to the application and only 10 in favor of it; not that we award those that win the pluses and minuses. But I would like to say I think that the staff did their job. And I think those who were opposed to this application have a method to pursue their interests privately.

Commissioner Hall: Mr. Chairman, I appreciate my fellow commissioner's comment. But as I said at the beginning, this is not a numbers game. It's not how many people show up. It's not how many people sign and submit the - - what do they call the …

Commissioners: Petitions.

Commissioner Hall: Thank you. It's been a long day. The petitions. It's a matter of hearing the testimony, applying the ordinances, applying all of the other things that we have to use. So I appreciate you pointing that out, but as I said, it goes beyond that. Thank you.

Chairman Murphy: All those - - further discussion of the motion? All those in favor of the motion to approve 2232-M08-26, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed? Motion carries. Ms. Hall.

Commissioner Hall: I RECOMMEND APPROVAL OF SEA 93-M-047, SUBJECT TO THE PROPOSED DEVELOPMENT CONDITIONS NOW DATED JUNE 13TH, 2013.

Commissioner Flanagan: Second.

Chairman Murphy: Seconded by Mr. Flanagan. Is there a discussion of that motion? All those in favor of the motion to recommend to the Board of Supervisors that it approve SEA 93-M-047, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed? Motion carries.

Commissioner Hall: And finally, I RECOMMEND APPROVAL OF A MODIFICATION OF THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENTS IN FAVOR OF THE PROPOSED FENCING, EXISTING VEGETATION, AND THE SUPPLEMENTAL LANDSCAPING DEPICTED ON THE SEA/SPA PLAT.

Commissioner Flanagan: Second.

Chairman Murphy: Seconded by Mr. Flanagan. Is there a discussion of that motion? All those in favor of that motion, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed? Motion carries.

//

(The motions carried unanimously with Commissioner Lawrence absent from the meeting.)

JN

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Board Agenda Item
September 10, 2013

4:00 p.m.

Public Hearing on SEA 2009-DR-008 (Oakcrest School) to Amend SE 2009-DR-008 Previously Approved for a Private School of General Education to Permit Modifications to Development Conditions and Site Access with no Increase in Enrollment, Located on Approximately 22.67 Acres of Land Zoned R-E (Hunter Mill District)

This property is located on the South side of Crowell Road, approximately 1,200 feet East of its intersection with Hunter Mill Road and North of Dulles Toll Road. Tax Map 18-4 ((1)) 26C; 18-4 ((8)) A and 4.

PLANNING COMMISSION RECOMMENDATION:
On Wednesday, July 31, 2013, the Planning Commission voted 6-5-1 (Commissioners Donahue, Hall, Hart, Hedetniemi, and Lawrence opposed and Commissioner Sargeant abstaining) to recommend that the Board of Supervisors approve SEA 2009-DR-008, subject to the development conditions dated July 30, 2013.

The Commission also voted 8-2-1 (Commissioners Hart and Lawrence opposed; Commissioner Sargeant abstaining; and Commissioner Hall not present for the vote) to recommend the following actions to the Board of Supervisors:

- Reaffirmation of the transitional screening requirements on the east and south to favor existing vegetation and as shown on the special exception amendment plat; and

- Reaffirmation of the modification of the location of the required barrier along the eastern and southern boundaries to favor that barrier shown on the special exception amendment plat.

ENCLOSED DOCUMENTS:
Attachment 1 – Planning Commission Verbatim
Staff Report previously furnished and available online at:
http://ldsnet.fairfaxcounty.gov/ldsnet/ldsdwf/4419579.PDF

STAFF:
Barbara Berlin, Director, Zoning Evaluation Division, Department of Planning and Zoning (DPZ)
Joe Gorney, Planner, DPZ

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Attachment 1

Planning Commission Meeting
July 31, 2013
Verbatim Excerpt

SEA-2009-DR-008 – OAKCREST SCHOOL (Hunter Mill District)

Decision Only During Commission Matters
(Public Hearing held on June 20, 2013)

Commissioner de la Fe: Thank you, Mr. Chairman. Mr. Chairman, I have a decision only. It's on SEA 2009-DR-008, Oakcrest School. Mr. Chairman, the public hearing for this case was held on June 20th, 2013. At the public hearing, 16 individuals presented testimony. Most were opposed to granting the SEA. Though there were a variety of issues raised, the predominant one related to the traffic impact on Crowell Road. During the deferral period, we have received a significant amount of further public comment, both supporting and opposing the application. All of those comments will be incorporated into the public record. In order to address not only the traffic management issues, but also removal of the berm, screening, and the relationship to previous actions related to the application property, the decision was deferred until July 25th. A staff report addendum was published on the 25th, which recommended a further deferral to tonight to allow staff additional time to review the submissions from the applicant. A second addendum dated July 30th was published and distributed electronically. As discussed in the addenda, development conditions were developed to attempt to address the issues. Condition 3 references the new date for the SE Plat, which, among other things, changes – which, among other changes, primarily relate to a reduction in the amount of berm to be removed and additional screening. Condition 4 was added to clarify the relationship between land disturbance activities associated with this SEA and the prior approvals collectively known as SP 91-C-070. Conditions 18 and 19 were added to address traffic and transportation demand issues. Conditions 33 and 34 were added to address issues related to the removal of portions of the berm. By approving the original SE, the Board of Supervisors determined that the land use, a Category 3, Private School of General Education, was appropriate. This application is an amendment to the previously-approved Special Exception because the applicant has been unable to acquire the land necessary to achieve the traffic mitigation anticipated in the approved SE. To state the obvious, this is a complicated case. Many of the issues raised with respect to this application had their origins long before this application; however, we must deal with the application before us now, which basically involves site access and traffic management. There is no question that the access point on Crowell will increase traffic on that road and exacerbate an already difficult situation; however, the traffic analyses and conclusions of the folks that we look to for advice tell us that, with the installation of a traffic signal at the intersection of Crowell and Hunter Mill roads, lane improvements, and provision of safety devices to alert vehicular traffic traveling west on Crowell, the increased traffic can be handled. At one point, I considered adding a requirement that a second site access point be provided; however, since the staff has concluded that the single access point, with the associated road improvements, could handle student enrollment at its highest allowable limit, I did not find it prudent to make such a requirement at this time. I believe that the provisions of Development Condition 19 allow the staff to monitor the situation and make the necessary changes. As I sated before, this is a complicated case. It is particularly complicated for me because of the divergent recommendations provided by the Hunter Mill Land Use Committee and staff. When the Land Use Committee and staff agree, it is less complicated for

me to arrive at a recommendation to present to the Commission, whether it's to approve or deny. In this case, the Land Use Committee has recommended denial and staff has recommended approval. I know that in the past I have disagreed with staff. I can't recall a case when I disagreed with the Land Use Committee. In this case, however, since I believe that the issue before us relates not to the appropriate use of the land – since that issue was settled when the Board approved the original SE – but is basically a traffic management issue, I will recommend approval. Therefore, Mr. Chairman, I MOVE THAT THE PLANNING COMMISSION RECOMMEND TO THE BOARD OF SUPERVISORS APPROVAL OF SEA 2009-DR-008, SUBJECT TO THE DEVELOPMENT CONDITIONS NOW DATED JULY 30TH, 2013. Thank you.

Commissioner Litzenberger: Second.

Chairman Murphy: Seconded by Mr. Litzenberger. Is there a discussion of the motion?

Commissioner Lawrence: Mr. Chairman?

Chairman Murphy: Mr. Lawrence.

Commissioner Lawrence: Thank you, Mr. Chairman. I was not present for the public hearing, but I reviewed the video and read all the materials so I think I'm competent to vote. Mr. Chairman, I've learned that every case is different, but successful applications have a common attribute. An acceptable balance is struck between what the applicant seeks in such terms as use, intensity, and land design, and the interests of the community in offsetting the impact of the development. The previous version of this application had achieved a balance. For a number of reasons, in my view, this version does not and I cannot support it. Thank you.

Chairman Murphy: Is there further discussion of the motion? Ms. Hedetniemi.

Commissioner Hedetniemi: Thank you, Mr. Chairman. I took the time to go to Crowell Road and drive it and I concur with Mr. Lawrence's comments. I am not convinced that this solution is appropriate for the neighbors and for the traffic congestion that is very likely in that area – in an already congested area. So I will not support it.

Chairman Murphy: Further discussion of the motion? Ms. Hall.

Commissioner Hall: Yes. Mr. Chairman, I also agree with Commissioner Lawrence. I cannot support the application – probably for the more simple reason that – when we work with our communities they've got to trust what we say. And if we get their support for a particular remedy, then we have to ensure that remedy stays as part of the application. So, therefore, I cannot support any traffic going out on Crowley (sic).

Commissioner Flanagan: Mr. Chairman?

Chairman Murphy: Yes, Mr. Flanagan.

Commissioner Flanagan: Yes, I also had hoped that in the interim we would be given more consideration to a transportation alternative that would have located the circle – the proposed circle of the previous SE further south so that it would be only on two properties. And – however, in consulting with staff, I was found out that that was – that the owners of those properties were not amendable to that alternative. And so it would require condemnation if they wanted to pursue that and they – so I'm going to support the motion as enunciated.

Chairman Murphy: Mr. Sargeant?

Commissioner Sargeant: I'll wait until the end, Mr. Chairman.

Chairman Murphy: All right. All those in favor of the motion –

Commissioner Donahue: Mr. Chairman? Mr. Chairman?

Commissioner de la Fe: Mr. Donahue.

Chairman Murphy: Oh, I'm sorry.

Commissioner Donahue: Yes, Mr. Chairman. I'm not sure exactly what some of these comments mean because not supporting the motion can take one of two directions. I'm going to have to oppose the motion. I'm going to have to oppose this application. And the reason I'm going to have to oppose it because I am clearly and emphatically on record with respect to Crowell Road – a number of years ago – saying this application doesn't work with Crowell Road access. I've always believed that. I believed it three years ago; I believe it now. And we still have Crowell Road access. I'm going to tell just a little story that goes a little further. We've been all wound up about – about the turn – about the roundabout. The roundabout, for me, has always been a secondary consideration. The need for the roundabout – or it is made necessary by the fact that the Crowell Road access point does not work. That leaves us with Hunter Mill. If you have a Hunter Mill access point and a right-out only – and you would sure as heck have to have that – most of the folks dropping people off there, I think, are going to want to get back to the Toll Road. And with a right-out only, in order to get back to the Toll Road, they're going to go a long, long ways without a roundabout to do so. That's what made the roundabout necessary; nothing else. There's nothing independent with respect to the roundabout other than you need the roundabout if you're going to have a route (sic) – a right-only out on Hunter Mill Road. But the Crowell Road issue, it just has never – it has never gotten my support. Crowell Road is not going to accommodate, I don't think, what it's going to have to accommodate as an access point to this application without greatly, greatly inconveniencing people in the area. And also, I think it's a dangerous – I think it's a dangerous situation. So I'm going to have to oppose the application. Thank you, Mr. Chairman.

Chairman Murphy: Further discussion of the motion? All those in favor of the motion to recommend to the Board of Supervisors that it approve SEA 2009-DR-008, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed?

Commissioners Donahue, Hall, Hart, Hedetniemi, and Lawrence: No.

Chairman Murphy: Motion carries – well, I believe I'm going to take a division on this. Mr. Donahue?

Commissioner Donahue: No.

Chairman Murphy: Ms. Hedetniemi?

Commissioner Hedetniemi: No.

Chairman Murphy: Mr. Litzenberger?

Commissioner Litzenberger: Yes.

Chairman Murphy: Mr. Flanagan?

Commissioner Flanagan: Yes.

Chairman Murphy: Mr. Lawrence?

Commissioner Lawrence: No.

Chairman Murphy: Mr. de la Fe?

Commissioner de la Fe: Yes.

Chairman Murphy: Ms. Hall?

Commissioner Hall: Yes. No! N, no. Yes, on Ms. Hall, but the answer is no.

Chairman Murphy: I thought Ms. Harsel came back.

Commissioner Hall: We'll have words over that one.

Chairman Murphy: Mr. Hart?

Commissioner Hart: No.

Chairman Murphy: Mr. Sargeant?

Commissioner Sargeant: Mr. Chairman, in addition to not participating in the public hearing, I want the record to show that I am I not participating in the vote.

Chairman Murphy: Okay. Mr. Migliaccio?

Commissioner Migliaccio: Yes.

Chairman Murphy: Ms. Hurley?

Commissioner Hurley: Yes.

Chairman Murphy: The chair votes aye. And the motion passes 7 – 5 to one.

Commissioner de la Fe: Too many – 6-5-1.

Chairman Murphy: 6-5-1, I'm sorry.

Commissioner Hall: I want an auditor.

Commissioner de la Fe: Mr. Chairman –

Chairman Murphy: Yes, well you confused me with your vote. You're lucky I put it down in the right column.

Commissioner de la Fe: Mr. Chairman, I MOVE THAT THE PLANNING COMMISSION RECOMMEND REAFFIRMATION OF THE PREVIOUS MODIFICATION OF THE TRANSITIONAL SCREENING REQUIREMENTS ON THE EAST AND SOUTH TO FAVOR EXISTING VEGETATION AND AS SHOWN ON THE SPECIAL EXCEPTION AMENDMENT PLAT.

Commissioner Litzenberger: Second.

Chairman Murphy: Seconded by Mr. Litzenberger. Is there a discussion? All those in favor of that motion, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed?

Commissioners Hart and Lawrence: No.

Chairman Murphy: Motion carries. Is it the same division?

Commissioner Donahue: I support that motion, Mr. Chairman. As long as we're going to have the project anyway, I think it's a good motion to support.

Chairman Murphy: Okay, who votes no on that one? Mr. Lawrence votes no and Mr. Hart votes no.

Commissioner Sargeant: Not participating.

Chairman Murphy: And same abstention; Mr. Sargeant. Motion carries.

Commissioner de la Fe: Mr. Chairman, I MOVE THAT THE PLANNING COMMISSION RECOMMEND REAFFIRMATION OF THE PREVIOUS MODIFICATION OF THE LOCATION OF THE REQUIRED BARRIER ALONG THE EASTERN AND SOUTHERN BOUNDARIES TO FAVOR THAT BARRIER THAT IS SHOWN ON THE SPECIAL EXCEPTION AMENDMENT PLAT.

Commissioner Litzenberger: Second.

Chairman Murphy: Seconded by Mr. Litzenberger. Is there a discussion of that motion? All those in favor, say aye.

Commissioners: Aye.

Chairman Murphy: Opposed?

Commissioners Hart and Lawrence: No.

Chairman Murphy: Motion carries. Mr. Lawrence and Mr. Hart vote no. Mr. Sargeant abstains. Is that it?

Commissioner de la Fe: That's it.

Chairman Murphy: Well you were right about one thing. You carried all the votes when you said this is a complicated application.

Commissioner de la Fe: Yes. Thank you, Mr. Chairman. And I realize that this is not satisfactory, probably, to anyone. And I also believe that given the development conditions that exist, this may not be the end of the case.

Chairman Murphy: You heard it here first.

Commissioner de la Fe: So, as I said, the origins on this extend more than 20 years and may be around another 20 years. And then it will be back in Dranesville.

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(The first motion carried by a vote of 6-5-1 with Commissioners Donahue, Hall, Hart, Hedetniemi, and Lawrence opposed; Commissioner Sargeant abstaining.)

(The second and third motions carried by a vote of 8-2-1 with Commissioners Hart and Lawrence opposed; Commissioner Sargeant abstaining; Commissioner Hall not present for the vote.)

JLC

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Board Agenda Item
September 10, 2013

4:00 p.m.

Public Hearing on Amendment to Article 17.3, Chapter 4, of the Fairfax County Code to Impose a Penalty for Certain Motor Vehicles Not Properly Displaying Current Virginia License Plates

ISSUE:
Board adoption of Section 4-17.3-5, Chapter 4 of the Fairfax County Code imposing a penalty for failure to display Virginia license plates

RECOMMENDATION:
The County Executive recommends that the Board adopt the proposed ordinance to the Fairfax County Code.

TIMING:
The proposed ordinance would become effective upon adoption.

BACKGROUND:
In 2009 the Board of Supervisors adopted Article 17.3, Chapter 4 of the Fairfax County Code imposing an annual license plate tax of $100 upon owners of motor vehicles that do not properly display Virginia license plates as required by state code. This tax, often referred to as the No Plate tax, is authorized by Section 15.2-973 of the Code of Virginia. While the Department of Tax Administration (DTA) has no license plate enforcement authority, this section of Virginia law allows the County to impose the additional annual tax until such time as the vehicle owner obtains and displays current Virginia license plates. DTA assesses and collects this tax along with the normal personal property tax.

During the 2013 session of the Virginia General Assembly, HB 1990 was introduced by Delegate Sickles and was subsequently enacted into law. Supported by the Board of Supervisors, this legislation adds Section 46.2-662(B) to the Code of Virginia which authorizes localities to adopt an additional $250 penalty for the failure to display proper Virginia license plates. This penalty is in addition to the existing license tax already imposed by law.

As requested by the Board, DTA will work with the Office of Public Affairs to broadly

publicize on an on-going basis the need for local residents to display Virginia license plates, along with the financial consequences imposed by this ordinance for failure to do so. While the ordinance is already promoted on DTA's website, staff will provide further outreach to include the use of web video and Channel 16; reference in DTA's existing ad placements; information to be provided to the Northern Virginia Association of Realtors (NVAR) for new residents; information to be included in letters DTA already annually sends to apartment managers; information to be provided to Homeowner Associations; and, use of Newswire, Twitter, and Facebook announcements.

FISCAL IMPACT:
The additional penalty of $250 will become effective upon passage and will be administered by DTA at the same time and manner as with personal property taxes and the current No Plate tax. Should the Board adopt the proposed ordinance, the combined amount for failure to properly display a Virginia license plate will be $350. As with the No Plate tax, the new penalty would be collected with personal property taxes assessed against vehicles that are normally garaged in Fairfax County but that continue to display out-of-state license plates beyond the first 30 days of residency.

Since 2009, the No Plate tax has generated an average of approximately $288,000 in General Fund revenue per year. Based on this, the new penalty could generate as much as $720,000. Less revenue would of course be collected if the greater expense were to increase compliance with state licensing requirements. The Department of Management and Budget (DMB) will coordinate with DTA to refine estimates as the year progresses. As requested by the Board, DTA will also monitor the number of repeat violators who seem to pay the No Plate surcharge rather than display Virginia license plates.

ENCLOSED DOCUMENTS:
Attachment 1: Proposed Ordinance to Adopt Section 4-17.3-5, Chapter 4, of the Fairfax County Code Imposing the No Plate Penalty
Attachment 2: Chapter 347, Virginia Acts of Assembly – 2013 Session (HB 1990)

STAFF:
Susan W. Datta, Chief Financial Officer
Kevin C. Greenlief, Director, Department of Tax Administration
Nancy F. Loftus, Assistant County Attorney

PROPOSED ORDINANCE TO AMEND FAIRFAX COUNTY CODE CHAPTER 4 ARTICLE 17.3, ADOPTING SECTION 4-17.3-5, TO PROVIDE FOR THE IMPOSITION OF A PENALTY FOR VEHICLES NOT PROPERLY DISPLAYING VIRGINIA LICENSE PLATES

Draft of July10, 2013

AN ORDINANCE to adopt Section 4-17.3-5 of the Fairfax County Code, relating to the imposition of a penalty for the failure to display a Virginia license plate as otherwise required by law.

Be it ordained by the Board of Supervisors of Fairfax County:

1. That Section 4-17.3-5 of the Fairfax County Code is adopted:

Section 4-17.3-5. Penalty

Pursuant to Section 46.2-662 of the Code of Virginia, there shall be imposed a penalty in the amount of $250 upon a resident owner for each motor vehicle that, following the end of the first 30 days of residency in the Commonwealth, is required to be registered in Virginia but which has not been so registered.

Each penalty levied pursuant to this section shall be in addition to the $100 local motor vehicle license plate tax imposed under Section 4-17.3-1. The combined license plate tax plus penalty shall amount to $350.00.

The levy and collection of any such penalty shall be the responsibility of the Director of the Department of Tax Administration (DTA) and said penalty shall be administered at the same time and in the same fashion as the local motor vehicle license plate tax imposed by this Article.

The Director of DTA, or his employees as he may so delegate, may waive the penalty authorized by this section if the failure to properly display Virginia license plates was not the fault of the taxpayer.

2. That this ordinance shall become effective upon passage.

GIVEN under my hand this _____ day of _____ 2013

_____

Catherine A. Chianese
Clerk to the Board of Supervisors

VIRGINIA ACTS OF ASSEMBLY -- 2013 SESSION

CHAPTER 347

An Act to amend and reenact §§ 15.2-973 and 46.2-662 of the Code of Virginia, relating to license taxes on certain motor vehicles.

[H 1990]

Approved March 14, 2013

Be it enacted by the General Assembly of Virginia:

1. That §§ 15.2-973 and 46.2-662 of the Code of Virginia are amended and reenacted as follows:

§ 15.2-973. Ordinances imposing license taxes on owners of certain motor vehicles.

Any locality may adopt an ordinance imposing a license tax, in an amount not exceeding $100 annually, upon the owners of motor vehicles ~~which~~ *that* do not display current license plates and ~~which~~ *that* are not exempted from the requirements of displaying such license plates under the provisions of Article 6 (§ 46.2-662 et seq.) of Chapter 6 of Title 46.2, §§ 46.2-1554 and 46.2-1555, are not in a public dump, in an "automobile graveyard" as defined in § 33.1-348, or in the possession of a licensed junk dealer or licensed motor vehicle dealer. ~~Such ordinance shall exempt from such tax any vehicles which are stored on private property for a period not in excess of sixty days, for the purpose of removing parts for the repair of another vehicle.~~ Nothing in this section shall be applicable to any vehicle being held or stored by or at the direction of any governmental authority, to any vehicle owned by a member of the armed forces on active duty or to any vehicle regularly stored within a structure. *Nothing in this section shall be applicable to motor vehicles that are stored on private property for the purpose of restoration or repair or for removing parts for the repair of another vehicle.*

§ 46.2-662. Temporary exemption for new resident operating vehicle registered in another state or country.

A. A resident owner of any passenger car, pickup or panel truck, or motorcycle, other than those provided for in § 46.2-652, ~~which~~ *that* has been duly registered for the current calendar year in another state or country and ~~which~~ *that* at all times when operated in the Commonwealth displays the license plate or plates issued for the vehicle in the other state or country, may operate or permit the operation of the passenger car, pickup or panel truck, or motorcycle within or partly within the Commonwealth for the first ~~thirty~~ *30* days of his residency in the Commonwealth without registering the passenger car, pickup or panel truck, or motorcycle or paying any fees to the Commonwealth.

B. In addition to any penalty authorized under this title, any locality may adopt an ordinance imposing a penalty of up to $250 upon the resident owner of any motor vehicle that, following the end of the 30-day period provided in subsection A, is required to be registered in Virginia but has not been so registered. The ordinance shall set forth a reasonable method for assessing and collecting the penalty, whether by civil, criminal, or administrative process, and shall identify the employees or agents of the locality who are to execute such assessment and collection.