County of Fairfax, Virginia
Planning Commission Meeting
March 11, 2026
Planning Commission Action

PROPOSED PUBLIC FACILITIES MANUAL AMENDMENT – AMENDMENTS TO THE PUBLIC FACILITES MANUAL (PFM) RE: SANITARY SEWER AND MISCELLANEOUS EDITS
(Countywide)

PLANNING COMMISSION RECOMMENDATIONS:
On March 11, 2026, the Planning Commission voted 12-0 to recommend to the Board of Supervisors that the Board adopt the amendments to the Public Facilities Manual as advertised and set forth in the Staff Report dated February 17, 2026, and that the amendments become effective at 12:01 a.m. on April 15, 2026.

ATTACHED DOCUMENTS:
Staff Report dated February 17, 2026

CD

LAND DEVELOPMENT SERVICES
February 17, 2026

STAFF REPORT

PREPARED BY LAND DEVELOPMENT SERVICES

☐ PROPOSED COUNTY CODE AMENDMENT

☑ PROPOSED PFM AMENDMENT

☐ PROPOSED ZONING ORDINANCE AMENDMENT

☐ APPEAL OF DECISION

☐ WAIVER REQUEST

Amendments to the Public Facilities Manual (PFM) Regarding Sanitary Sewer and Editorial Changes

PUBLIC HEARING DATES

Authorization to Advertise:	February 17, 2026
Planning Commission Hearing:	March 11, 2026, at 7:30 p.m.
Board of Supervisors Hearing:	April 14, 2026, at 2:30 p.m.

Prepared By: Julie Moyer, P.E., Engineer IV
Jan Leavitt, P.E., Branch Chief
Site Code Research & Development Branch, Land Development Services
(703) 324-1912

Staff Report

STAFF RECOMMENDATION

Staff recommend that the Board of Supervisors (Board) adopt the proposed amendments set forth in this Staff Report dated February 17, 2026. The proposed amendments update sanitary sewer flow rates and miscellaneous edits are being made to align the Public Facilities Manual (PFM) with updated processes and ordinances.

COORDINATION

The proposed amendments have been prepared by the Department of Land Development Services (LDS) in coordination with the Office of the County Attorney and the Department of Public Works and Environmental Services (DPWES). The proposed amendments have been recommended for approval by the Engineering Standards Review Committee.

BACKGROUND

Miscellaneous updates to the PFM are being proposed. Overall, the amendments are necessary to update the PFM to align with current processes and ordinance updates. The amendments are described in more detail below.

PROPOSED AMENDMENTS

A summary of the proposed amendments is below.

Update Sanitary Sewer Flow Rates:
The proposed sanitary sewer amendment updates the sanitary sewer design flow rates in Table 10.1 of the PFM. The recommended flow rates are used by designers in the design and analysis of sanitary sewer pipes and systems. DPWES staff reviewed evaluated water consumption and wastewater flow data across Fairfax County and determined that targeted reductions in average flow design values were justified for single-family detached, multi-family, and office developments. The lower rates more accurately reflect actual flows generated from these uses. The lower rates align with industry's practice and in some cases will result in cost savings. For existing sewers, the amendment also generally reduces the peak flows consistent with the flow rates and development trends and updates the PFM to incorporate peak flows in both graphic (Plate 1-10) and tabular (Plate 2-10) format for ease of use. The process to update the flow rates and peaking factors resulted from a joint effort between DPWES, DPD, and industry to facilitate development while maintaining cost effective sanitary sewer systems across the county.

The following summarizes the proposed rates:

- Reduce Single-Family Detached Residential flow rate from 350 GPD to 330 GPD per residence
- Reduce Multifamily flow rate from 280 GPD to 210 GPD for one bedroom (Stays same at 280 GPD for two-bedroom units or more)
- Reduce Office flow rate from 0.20 to 0.15 GPD per net square feet
- Specify flow rates for common commercial and medical uses

A copy of the proposed sanitary sewer amendments to the PFM is included in Attachment A.

Alignment with Chapter 124.1 (Erosion and Stormwater Management Ordinance):
The PFM Chapters 1, 2, 5, 6, 11, and 12 are updated to align with the recent changes to Chapter 124.1 (Erosion and Stormwater Management Ordinance), which was adopted by the Board of Supervisors on December 9, 2025. The proposed PFM changes update the nomenclature and numbering to conform with the ordinance and the updated Virginia Stormwater Handbook, which provides specifications for use of best management practices. The Stormwater Handbook became effective on July 1, 2025, and staff and industry have operated under the new requirements since that time.

A copy of the proposed amendments aligning the PFM with the updated Erosion and Stormwater Management Ordinance and Virginia Stormwater Handbook is included in Attachment B (pages 1-30).

Incorporate Stacked Townhouses to align with the Zoning Ordinance:
The PFM Chapters 2, 7, 9, and 10 are amended to incorporate the stacked townhouse dwelling unit into the PFM. Where a provision in the PFM refers to “townhouse”, the provision is being updated to clarify that it’s applicable to both “single-family attached and stacked townhouse”. This update is necessary to align the PFM with the Zoning Ordinance.

A copy of the proposed amendments aligning the PFM with the townhouse provisions of the Zoning Ordinance is included in Attachment B (pages 31-35).

Update Driveway Entrance Detail (DE-1) to align with VDOT standards:
To facilitate VDOT’s acceptance process, Plate 20-7 is updated to ensure that construction of driveway entrances along VDOT maintained streets will be designed to meet VDOT standards specific to proper installation of the construction joint and accessibility.

A copy of the proposed amendments aligning the PFM with VDOT driveway entrance standards is included in Attachment B (page 36).

Codify Current Sump Pump Processes
Sump pump provisions are added to codify current process. The policy requires that for single-family detached developments, sump pumps may not discharge closer than 10

feet to any property line and that the flow from the sump pump does not cause erosion or ponding. To facilitate inspections, designers must illustrate the location of the sump pump discharge on the associated grading plan.

A copy of the proposed amendments to the PFM codifying current sump pump processes is included in Attachment B (pages 37-38).

A copy of all the proposed amendments to the PFM is available at: https://www.fairfaxcounty.gov/landdevelopment/public-facilities-manual-and-code-amendments.

REGULATORY IMPACT

The proposed sanitary amendment updates Table 10.1 by reducing the recommended sewer design flow rates for single-family detached, multi-family, and office development and adding design flow rates for commercial and medical uses. The amendment also reduces the peaking factors for existing sewers and incorporates the peaking factors into the PFM in both graphic and tabular format for ease of use as shown in Plates 1-10 (Peak Flow Curve) and 2-10 (Peak Flow Chart).

Miscellaneous edits are proposed to 1) align the PFM with the recent updates to the Erosion and Stormwater Ordinance (Chapter 124.1), 2) incorporate the stacked townhouse unit into the PFM to align with the Zoning Ordinance, 3) update Plate 20-7 related to the construction of driveway entrances along existing streets to align with VDOT standards, and 4) codify current processes including showing sump pump discharge locations on the associated grading plan.

ATTACHED DOCUMENT

Attachment A – Proposed Sanitary Sewer Amendment
Attachment B – Proposed Miscellaneous Edits

Proposed Amendment to
Chapter 10 (Sewage and Solid Waste Disposal) of
the Public Facilities Manual

Amend Chapter 10 (Sewage and Solid Waste Disposal), List of Tables, only make changes to the following tables:

Table Number	Title	Section
Table 10.1	Average Design Flows for Development Types	Sec. 10-0102.4
Table 10.2	Hydraulic Design Analysis	Sec. 10-0102.4
Table 10.~~2~~3	Minimum Grades (%) for Pipes	Sec. 10-0102.8
Table 10.~~3~~4	Allowable Load Factor for Class B Bedding	Sec. 10-0103.3
Table 10.~~4~~5	Trench Width Required for Pipe Size	Sec. 10-0103.6

Amend Chapter 10 (Sewage and Solid Waste Disposal), Section 10-0100 (Sanitary Sewer Design Criteria), Subsection 10-0102 (General and Hydraulic), Subsection 10-0102.4. to read as follows:

10-0102.4 Sewage Flow:

A. Recommended Average Design Flows:

Table 10.1 Average Design Flows for Development Types	
Type of Development[1]	**Design Flow (GPD)**
General, Mixed-use and Planned Developments	100/person
Single family detached	330 ~~350~~/residence
Single family attached and stacked townhouses	280/unit
Multifamily: One Bedroom Two or more Bedrooms	~~280/unit~~ 210/unit 280/unit
Commercial:	
General	0.046/gross ft² ~~2,000/acre~~
Motel	130/unit
Office[2]	30/employee
	0.15 ~~0.20~~/net ft²
Restaurant[3]	50/seat
Mixed-Use Commercial[4]	0.77/gross ft²

Industrial:	
General	0.23 gross ft² ~~10,000/acre~~
Warehouse	0.014/gross ft² ~~600/acre~~
Varies with type of industry	
School Site:	
general	16/student
Medical Facilities:	
Hospital	300/bed
Nursing Home	200/bed
Doctor's Office in Medical Center	0.5/gross ft²
1. All development types need to include site specific flows from cooling towers into the total flow. 2. Use site specific data when available or calculate net ft² at 80% of gross ft². 3. Total number of seats includes indoor and outdoor seating. Indoor seating is calculated at 1 seat = (60% gross ft²/20). 4. Use site specific data when available or calculate as 50% restaurant rate and 50% retail rate.	

B. Sewers must be designed to carry a peak flow when full as determined from applying the appropriate peak flow factor to the average flow. Existing infrastructure is assessed by applying the appropriate peak flow factor to the average flow. (See Plates 1-10 and 2-10.) No separate allowance for infiltration will be required. Other peak flow factors may be approved by the Director based on factors such as long-term flow metering data, age of the sewer, and types of development within the sewer shed.

C. Surcharge Limit:

(1) Sewer pipes ≤ 15 inches in diameter, where laterals are connected to the pipe or manhole, no surcharge is allowed.

(2) Sewer pipes > 15 inches in diameter with no laterals connected to the pipes or manholes, a maximum of 1 foot of surcharge is allowed when a minimum of 5 feet of freeboard is available from the top of the manhole.

D. A Hydraulic Design Analysis, based on additional peak flow generated from the site, must be provided by the applicant if the proposed development (project) meets any of the criteria in Table 10.2.

Table 10.2 Hydraulic Design Analysis	
Peak Flow Increase (Gallons/day)	**Served with Sewer Pipes (Diameter)**
10,000 – 50,000	8" - 12"
>50,000 - 400,000	< 21"
>400,000	< 27"

Renumber 10.2 (Minimum Grades (%) for Pipes) to Table 10.3 Minimum Grades (%) for Pipes).

Renumber Table 10.3 (Allowable Load Factor for Class B Bedding) to 10.4 (Allowable Load Factor for Class B Bedding).

Renumber 10.4 (Trench Width Required for Pipe Size) to 10.5 (Trench Width Required for Pipe Size).

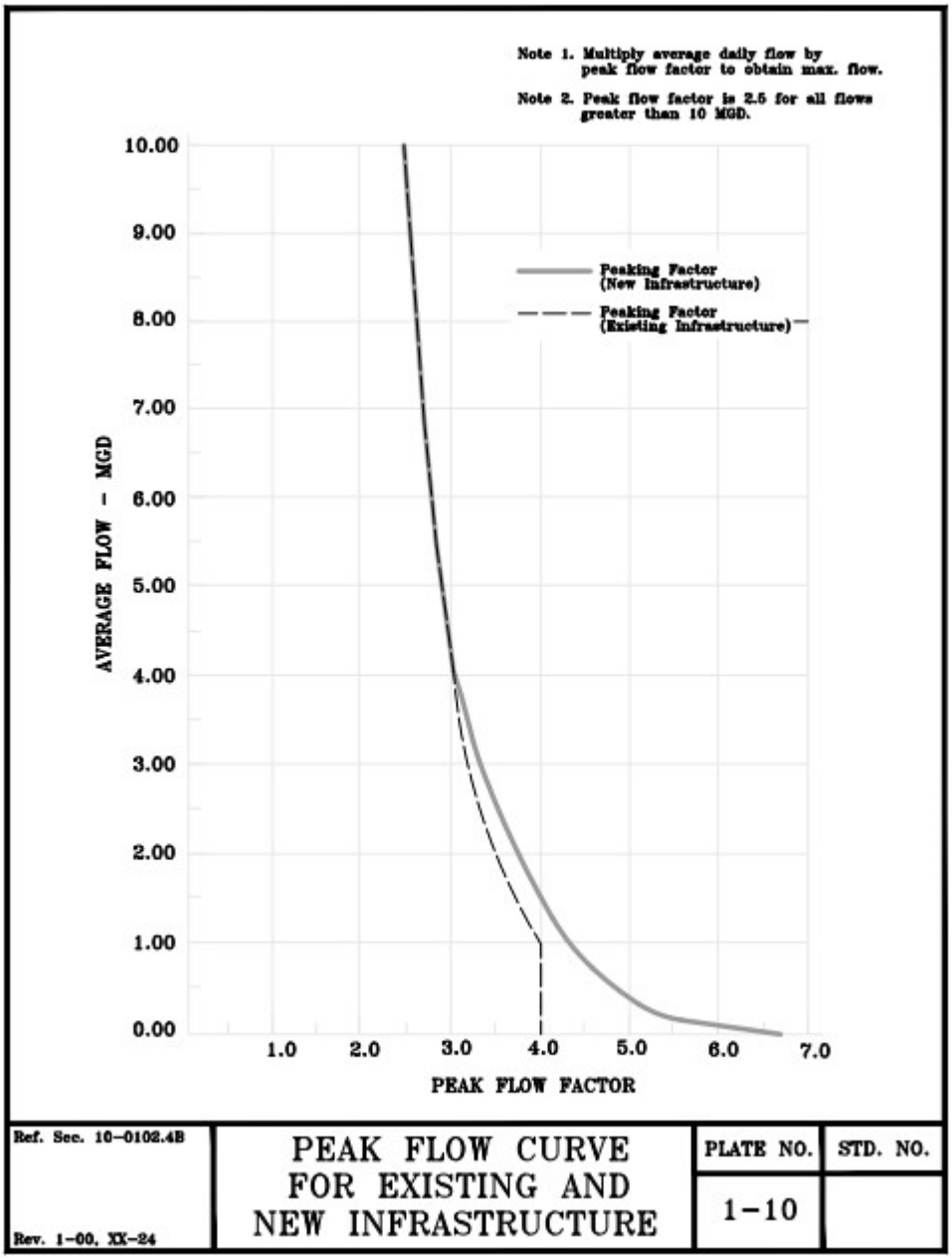
Amend Chapter 10, Chapter 10 Plates, Plate 16-10, by removing the reference to deleted Table 10.4 by removing the words "Table 10.4 and".

Amend the list of Plates in Chapter 10 to rename plates 1-10 and 2-10 as follows:

Plate #	Old Name	New Name
1-10	Peak Flow Curve 0.0 to 1.0 MGD	Peak Flow Curve for Existing and New Infrastructure
2-10	Peak Flow Curve 1.0 and Greater MGD	Peak Flow Chart for Existing and New Infrastructure

Amend Chapter 10, Chapter 10 Plates, by replacing Plates 1-10 and 2-10 with new Plates 1-10 and 2-10 as follows:

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



Ref. Sec. 10-0102.4B Rev. 1-00, XX-24	PEAK FLOW CURVE FOR EXISTING AND NEW INFRASTRUCTURE	PLATE NO.	STD. NO.
		1-10	

50

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL

Peak Flow Chart for Existing and New Infrastructure		
Average Flow (mgd)	**Peaking Factor (New Infrastructure)**	**Peaking Factor (Existing Infrastructure)**
0.00	6.59	4.00
0.10	5.92	4.00
0.20	5.42	4.00
0.30	5.15	4.00
0.40	4.97	4.00
0.50	4.82	4.00
0.60	4.70	4.00
0.70	4.59	4.00
0.80	4.49	4.00
0.90	4.40	4.00
1.00	4.32	4.00
1.50	4.00	3.77
2.00	3.75	3.52
2.50	3.52	3.34
3.00	3.34	3.22
3.50	3.20	3.12
4.00	3.07	3.07
4.50	2.99	2.99
5.00	2.92	2.92
5.50	2.86	2.86
6.00	2.81	2.81
6.50	2.77	2.77
7.00	2.73	2.73
7.50	2.69	2.69
8.00	2.65	2.65
8.50	2.62	2.62
9.00	2.59	2.59
9.50	2.54	2.54
10.00and greater	2.50	2.50

Ref. Sec. 10-0102.4B Rev. 1-00, XX-24	PEAK FLOW CHART FOR EXISTING AND NEW INFRASTRUCTURE	PLATE NO. 2-10	STD. NO.

Proposed Miscellaneous Amendments to the Fairfax County Public Facilities Manual

Miscellaneous provisions are being updated at this time. In the revisions shown below, text to be deleted is identified with strike-through and text to be added is underlined.

Updates to Align PFM with Chapter 124.1 (Erosion and Stormwater Management Ordinance) pages 1-30

1-1000 SYMBOLS, ACRONYMS/ABBREVIATIONS & DEFINITIONS

~~VSMP~~ VESMR	~~Virginia Stormwater Management Program~~ Virginia Erosion and Stormwater Management Regulation

2-0107 E&S Control and Soil Removal

2-0107.1 E&S controls are required as set forth in § 11-0000 (Erosion and Sediment Control)~~*et seq.*~~ and ~~Chapter 104 (Erosion and Sedimentation Control)~~ Chapter 124.1 (Erosion and Stormwater Management Ordinance) of the Code.

2-0107.4 Provisions for E&S control must be shown on all grading plans unless otherwise exempted by ~~Chapter 104~~ Chapter 124.1 (Erosion and Stormwater Management Ordinance) of the Code.

2-0109 Large Lot Subdivisions

2-0109.1 For large-lot subdivisions (divisions or redivisions of real property where any tract, plot or parcel is 5 acres or the metric equivalent or greater) exempt from the Subdivision Ordinance, ~~Chapters 104 (Erosion and Sedimentation Control),~~ Chapters 107 (Problem Soils), 112.2~~1~~ (Zoning Ordinance), 116 (Wetlands Zoning Ordinance), 118 (Chesapeake Bay Preservation Ordinance), and ~~124 (Stormwater Ordinance)~~ 124.1 (Erosion and Stormwater Management Ordinance) of the Code apply.

2-0109.3 When plans for large-lot subdivisions are filed, the following ~~will be~~is required:

A. Topographic sheets with contour intervals no greater than 5-feet at a scale no greater than 1 inch=100 feet showing:

4. For an E&S control plan refer to ~~Chapter 104~~ Chapter 124.1 and §§ 11-0102 through ~~§~~ 11-0105.

2-0110 Tree Conservation Requirements

2-0110.1 Tree conservation requirements must be addressed on all land being developed as set forth in Chapter 122 (Tree Conservation Ordinance), ~~the~~ Chapter 101 (Subdivision Ordinance), ~~Chapter 104 (Erosion and Sedimentation Control)~~ Chapter 124.1 (Erosion and Stormwater Management Ordinance) of the Code, and PFM § 12-0000 (Tree Conservation)~~*et seq*~~.

2-0600 CONSERVATION AGREEMENT AND DEPOSIT

2-0601 General Requirements

2-0601.1 Before approval of a subdivision or site plan, the developer must ~~provide a~~ execute a conservation agreement and make a deposit in accordance with ~~Chapter 104~~Chapter 124.1 of the Code, which ~~assures~~ enables the County ~~that~~ to take measures ~~can be taken by the County~~ at the developer's expense if ~~conservation measure are not properly installed and maintained during the period determined by the Director~~ as provided for in the conservation agreement.

5-0000 DEBRIS LANDFILL

5-0100 GENERAL REGULATIONS AND PLAN PREPARATION

To obtain approval for a debris landfill, an applicant must submit a design plan, pursuant to the requirements of Chapter 112.2~~1~~ (Zoning Ordinance), ~~Chapter 104 (Erosion and Sedimentation Control)~~ Chapter 124.1 (Erosion and Stormwater Management Ordinance), Chapter 108.1 (Noise Ordinance), and Chapter 118 (Chesapeake Bay Preservation Ordinance) of the Code, and must comply with the requirements of §§ 5-0100 through 5-0105 ~~et seq.~~

5-0201 General Materials.

Permitted materials are listed in ~~Chapter 104, Article 2~~ Chapter 124.1, Article 11 of the Code and in §§ 10-0300 through 10-0306 (Solid Wast and Recycling System)~~*et seq*~~.

6-0203 Policy and Requirements for Adequate Drainage

6-0203 Analysis of Downstream Drainage System

6-0203.2 The extent of the review of the downstream drainage system must conform with ~~be as required by Chapter 124 (Stormwater Management Ordinance~~) Chapter 124.1 (Erosion and Stormwater Management Ordinance) of the Code. Note that the extent of review for channel protection and flood protection requirements are different.

6-0203.3 Adequacy of all natural watercourses, channels and pipes must be verified in accordance with the channel protection and flood protection requirements of ~~Chapter 124~~ Chapter 124.1 of the Code and the following:

6-0203.4 An improvement and no adverse impact to the downstream drainage system must be shown in accordance with the requirements of ~~Chapter 124~~ Chapter 124.1 of the Code and the following:

A. Detention Method[2]

1. It will be presumed that no adverse impact and 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:

a. 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 must 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~~ Chapter 124.1 of the Code.

b. The calculation of the peaks and cumulative volumes must be based on the NRCS methodology described in § 6-0802 or other methods as approved by the Director.

B. Other scientifically valid methods, which show no adverse impact regarding erosion or capacity for an inadequate outfall and show an improvement, may be approved by the Director in accordance with the requirements of ~~Chapter 124~~ Chapter 124.1 of the 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 must be reduced to a level below the pre-development condition in accordance with the requirements of ~~Chapter 124~~ Chapter 124.1 of the Code.

6-0300 POLICY ON DETENTION OF STORMWATERS

6-0301 General

6-0301.1 The use of various methods for the on-site retention and detention of stormwater is required under ~~Chapter 124~~ Chapter 124.1 of the Code to minimize the adverse effects of increased stormwater runoff (resulting from the development of land within the County) on all downstream drainageways.

6-0301.2 Stormwater management facilities must be provided in all storm drainage plans for proposed development in the County submitted for review and approval unless exempt or waived by the Director in accordance with ~~Chapter 124~~ Chapter 124.1 of the Code.

6-0303 Location and Maintenance of Stormwater Management and BMP Facilities

6-0303.7 Detention or structural BMP facilities, including 10-year flood storage areas associated with such facilities, may 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~~ Chapter 124.1 (Erosion and 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 through 6-1320 (Retention, Detention, and Best Management Practices Facilities) ~~*et seq*~~. Such approval by the Director must be in writing and must 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.

6-0400 STORMWATER RUNOFF QUALITY CONTROL CRITERIA

6-0401 General Information and Regulations

6-0401.1 ~~The Board adopted Chapter 124 (Stormwater Management Ordinance)~~ Chapter 124.1 (Erosion and Stormwater Management Ordinance) of the Code establishes requirements for managing stormwater and procedures to administer and enforce those requirements. 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~~ Erosion and Stormwater Management Ordinance.

6-0401.2 The Board has established a Water Supply Protection Overlay District (WSPOD) in the Occoquan Watershed to prevent water quality degradation of the Occoquan 1,2, 5,6,11,12 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 must 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~~ Erosion and Stormwater Management Ordinance.

6-0401.3 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 Code). RPA and RMA components are identified in § 118-1-7 of the Code. Performance criteria have been established which require that there must 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. For purposes of §§ ~~6-0400~~ 6-0401 through 6-0402 ~~et seq.~~, the average land cover condition is 18 percent imperviousness. Compliance with the requirements of the Erosion and Stormwater Management Ordinance ~~must be considered to~~ will meet the stormwater management requirements of Chapter 118.

6-0402 Stormwater Quality Control Practices.

6-0402.4 Other innovative BMP measures which have not been approved by the state may be used to meet proffers or development conditions that exceed the minimum requirements of the Erosion and Stormwater Management Ordinance, but may not be used to meet the minimum water quality control requirements in § ~~124-4-3~~ 124.1-4-3 of the 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:

A. Justification;

B. Technical details with research data supporting efficiencies;

C. Maintenance considerations and program (private maintenance will generally be required for innovative BMP facilities);

D. Safety considerations;

E. Aesthetic considerations;

F. Location and interaction with populated areas;

G. Pest control program, if required;

H. Estimated construction cost;

I. Estimated 20-year maintenance cost.

1. 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 before bond release to cover a 20-year maintenance cycle. These funds are not available for use until after bond release.

6-0402.8 The following information is required on all site and subdivision plans to demonstrate compliance with the water quality control requirements of § 6-0000 (Storm Drainage) ~~*et seq*~~.

F. Computations of BMP phosphorus reduction for the site demonstrating compliance with the water quality control requirements of Article 4 of ~~Chapter 124~~ Chapter 124.1

of the Code using the Virginia Runoff Reduction Method Worksheet, or equivalent method, as approved by the ~~Director~~ DEQ. In applying the current version of the Virginia Runoff Reduction Method, an annual rainfall value of 43 inches must be used.

H. If an owner or operator intends to meet the requirements established in ~~Chapter 124~~ Chapter 124.1 of the Code through the use of off-site compliance options, a letter of availability from the off-site provider must be included.

6-1302 Rooftop Storage

6-1302.1 Rooftop storage must be designed to meet the water quantity control requirements of the Erosion and Stormwater Management Ordinance.

6-1303 Infiltration Practices

6-1303.1 General.

B. Infiltration Practices must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the ~~VSMP Regulations~~ Virginia Stormwater Management Handbook~~)~~, except as modified herein.

6-1303.2 Feasibility and Limitations.

E. 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 Erosion and 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 must be in writing and must specify the conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities.

F. 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 Erosion and Stormwater Management Ordinance for construction on the lot.

I. Setbacks. Infiltration facilities must meet the setback requirements of ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Setbacks to roads and buildings vary based on the

scale of the infiltration practice. In addition, infiltration facilities must be set back a minimum of 2 feet from property lines.

6-1303.4 Design Criteria.

A. Treatment Volume. The required treatment volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

D. Pre-Treatment. Pre-treatment must be provided at all points of concentrated inflow to facilities. Pre-treatment must be designed in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~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 must 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 must be provided where space permits. Guidelines for sizing vegetated filter strips and channels are provided in Tables 6.16 and 6.17.

F. Berms used to pond water above infiltration facilities cannot exceed ~~must be a maximum of~~2 feet in height measured from the downstream toe-of-slope to the top of the berm. The ~~width of the~~top of the berm must be ~~a minimum of~~ at least 2 feet wide. The sides ~~slopes~~ of the berm ~~must be a maximum~~ cannot exceed~~of~~ a 3:1 slope. Berms and overflow weirs must be sodded and pegged in accordance with the most recent edition of the ~~"~~Virginia ~~Erosion and Sediment Control~~ Stormwater Management Handbook.~~"~~ Facilities with berms that are equal to or less than 2 feet in height or excavated facilities will not be subject to the requirements of § 6-1600 (Design and Construction of Dams and Impoundments).

N. Variations of the typical details and schematics of infiltration facilities in ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ may be approved by the Director, if the facility meets all of the requirements in § 6-1303 (Infiltration Practices)~~et seq~~.

6-1303.5 Gravel Layer/Storage Chamber Design.

B. Infiltration facilities must be sized in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1303.6 Underdrains. Underdrains must consist of pipe ≥ 4 inches in diameter placed in a layer of washed VDOT #57 stone. There must be a minimum of 2 inches of gravel above and below the pipe. Laterals must be a minimum of 4-6 inches in diameter. Main collector lines and manifolds must be a minimum of 6-8 inches in diameter. Underdrains must be laid at a minimum slope of 0.5 percent. Underdrains must extend to within 10 feet of the boundary of the facility and have a maximum internal spacing of 20 feet on center. Underdrains must be separated from the soil media in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Underdrains not terminating in an observation well/clean-out must 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 must be washed with less than 1 percent passing a #200 sieve.

6-1303.8 Materials Specifications.

B. Filter fabric. Filter fabric must be a needled, non-woven, polypropylene geotextile meeting the requirements listed in ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Heat-set or heat-calendared fabrics are not permitted.

6-1303.9 Construction Specifications.

F. Additional guidelines for construction are provided in ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1303.10 Plan Submission Requirements.

D. Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in ~~Virginia Stormwater~~ Design Specification P-FIL-04 (formerly No. 8) Infiltration Practices in the Virginia Stormwater Management Handbook.

6-1304 Permeable Pavement

6-1304.1 General.

E. Permeable paving must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. except as modified herein.

6-1304.2 Feasibility and Limitations.

A. 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 Erosion and Stormwater Management Ordinance except as permitted under § 6-1304.2A(1) and § 6-1304.2A(2).

C. Permeable pavement systems may not be located on individual residential lots for the purpose of satisfying the BMP requirements of the Erosion and Stormwater Management Ordinance.

G. Setbacks. Permeable pavement must meet the setback requirements of ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1304.4 General Design Requirements.

A. Treatment Volume. The required treatment volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

L. Variations of the permeable pavement designs in the typical details and schematics of permeable pavement facilities in ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ may be approved by the Director, if the facility meets all of the requirements in § 6-1304 (Permeable Pavement)~~*et seq*~~.

6-1304.6 Aggregate Base/Storage Chamber Design.

B. The required storage volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1304.8 Materials Specifications.

G. Filter fabric. Filter fabric must be a needled, non-woven, polypropylene geotextile meeting the requirements listed in ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Heat-set or heat-calendared fabrics are not permitted.

6-1304.9 Construction Specifications.

G. Installation of open jointed pavement blocks.

1. Installation of open jointed pavement blocks must be in accordance with the construction sequence in ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

H. Installation of porous asphalt pavement.

1. Installation of porous asphalt pavement must be in accordance with the construction sequence in ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

I. Installation of pervious concrete.

1. Installation of pervious concrete must be in accordance with the construction sequence in ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1304.10 Plan Submission Requirements.

D. Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in ~~Virginia Stormwater~~ Design Specification P-FIL-03 (formerly No. 7) Permeable Pavement in the Virginia Stormwater Management Handbook.

6-1307 Bioretention

6-1307.1 General.

F. Bioretention must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations~~, except as modified herein.

6-1307.2 Feasibility and Limitations.

A. 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 Erosion and 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 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 must be in writing and must specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities.

B. 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 Erosion and Stormwater Management Ordinance for construction on the lot.

F. Setbacks. Bioretention facilities must meet the setback requirements of the ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. In addition, bioretention facilities must be set back a minimum of 2 feet from property lines.

6-1307.4 Design Criteria.

A. Treatment Volume. The required treatment volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

D. Pre-Treatment. Pre-treatment must be provided at all points of concentrated inflow to facilities. Pre-treatment must be designed in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~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 must 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 must be provided where space permits. Guidelines for sizing vegetated filter strips and channels are provided in Tables 6.16 and 6.17.

F. Berms used to pond water in bioretention facilities ~~must be a maximum of~~ cannot exceed 2 feet in height measured from the downstream toe-of-slope to the top of the berm. The ~~width of the~~ top of the berm must be a ~~minimum of~~ at least 2 feet wide. The sides ~~slopes~~ of the berm ~~must be a maximum of~~ cannot exceed a 3:1 slope. Berms and overflow weirs must be sodded and pegged in accordance with the most recent edition of the ~~"~~Virginia Stormwater Management ~~Erosion and Sediment Control~~ Handbook.~~"~~ Facilities with berms that are equal to or less than 2 feet in height or excavated facilities will not be subject to the requirements of § 6-1600 (Design and Construction of Dams and Impoundments).

N. The soil media depth must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. If large trees and shrubs are to be installed, soil depths must 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 must be placed on top of the soil media.

P. Variations of the bioretention filter and basin designs in the typical details and schematics of bioretention facilities in ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ may be approved by the Director, if the facility meets all of the requirements in § 6-1307 (Bioretention)~~*et seq*~~.

6-1307.5 Filter Bed Design.

A. The required surface area of the filter must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1307.7 Underdrains. Underdrains must consist of pipe ≥ 4 inches in diameter placed in a layer of washed VDOT #57 stone. There must be a minimum of 2 inches of gravel above and below the pipe. Laterals must be a minimum of 4-6 inches in diameter. Main collector lines and manifolds must be a minimum of 6-8 inches in diameter. Underdrains must be laid at a minimum slope of 0.5 percent. Underdrains must extend to within 10 feet of the boundary of the facility and have a maximum internal spacing of 20 feet on center. Underdrains must be separated from the soil media in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Underdrains not terminating in an observation well/clean-out must 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 must be washed with less than 1 percent passing a #200 sieve.

6-1307.9 Materials Specifications.

A. The bioretention soil media must meet the requirements of ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Topsoil used to create bioretention soil media should be a sandy loam or loamy sand per USDA textural classification. The textural class of the topsoil should be verified by a laboratory analysis. Topsoil must be of uniform composition, containing no more than 5 percent clay, free of stones, stumps, brush, roots, or similar objects larger than 2 inches. Topsoil must be free of Bermuda Grass, Quackgrass, Johnson Grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle, Tearthumb, or other noxious weeds. Sand must meet AASHTO M-6, ASTM C-33, or VDOT Section 202 Grade “A” Fine Aggregate

specifications. Sand must be clean and free of deleterious materials. Any organic material added to create the final soil mixture must consist of leaf compost or compost meeting the requirements of ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment in the Virginia Stormwater Management Handbook. The final soil mixture may not contain any material or substance that may be harmful to plant growth, or a hindrance to plant growth or maintenance. Each bioretention area must 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 must be submitted to LDS before bond release.

D. Filter fabric. Filter fabric must be a needled, non-woven, polypropylene geotextile meeting the requirements listed in ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Heat-set or heat-calendared fabrics are not permitted.

6-1307.11 Construction Specifications.

L. Additional guidelines for construction are provided in ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1307.11 Plan Submission Requirements.

E. Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in ~~Virginia Stormwater~~ Design Specification P-FIL-05 (formerly No. 9) Bioretention in the Virginia Stormwater Management Handbook.

6-1308 Vegetated Swales

6-1308.1 General.

D. Grass channels must conform to ~~Virginia Stormwater~~ Design Specification P-CNV-01 (formerly No. 3) Grass Channel ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein. Dry swales must conform to ~~Virginia Stormwater~~ Design Specification P-CNV-02 (formerly No. 10) Dry Swale ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1308.2 Location and Siting.

A. 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 Erosion and 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 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 must be in writing and must specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities.

B. 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 Erosion and Stormwater Management Ordinance for construction on the lot.

6-1308.4 Dry Swale Design.

A. Treatment Volume. The required treatment volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-CNV-02 (formerly No. 10) Dry Swale ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

G. Variations of the dry swale designs in the typical details and schematics dry swales in ~~Virginia Stormwater~~ Design Specification P-CNV-02 (formerly No. 10) Dry Swales ~~(Version 1.9, March 1, 2011)~~ in the Virginia Stormwater Management Handbook may be approved by the Director, if the facility meets all of the requirements in § 6-1308 (Vegetated Swales)~~*et seq*~~.

6-1308.5 Grass Channel Design.

A. Design flow. Design flows must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-CNV-01 (formerly No. 3) Grass Channel ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

E. Variations of the grass channel designs in the typical details and schematics of grass channels in ~~Virginia Stormwater~~ Design Specification P-CNV-01 (formerly No. 3) Grass Channel ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ may be approved

6-1308.6 Underdrains. Underdrains must consist of pipe ≥ 6 inches in diameter placed in a layer of washed VDOT #57 stone. There must be a minimum of 2 inches of gravel above and below the pipe. The underdrain must begin within 10 feet of the upstream boundary of the swale. Underdrains must be separated from the soil media in accordance with ~~Virginia Stormwater~~ Design Specification P-CNV-02 (formerly No. 10) Dry Swale ~~(latest version referenced~~ in the Virginia Stormwater Management

Handbook ~~VSMP Regulations)~~. Underdrain pipe must be perforated. All stone must be washed with less than 1 percent passing a #200 sieve.

6-1308.8 Materials Specifications.

F. Compost. Compost must meet the requirements of ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment in the Virginia Stormwater Management Handbook.

6-1308.12 Plan Submission Requirements.

G. Computations and other information demonstrating that the design meets level 1 or level 2 design criteria in ~~Virginia Stormwater~~ Design Specification P-CNV-02 (formerly No. 10) Dry Swale.

6-1309 Vegetated Roofs

6-1309.1 General.

B. Vegetated roofs must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-02 (formerly No. 5) Vegetated Roof ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1309.2 Feasibility and Limitations.

B. 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 Erosion and Stormwater Management Ordinance.

C. Vegetated roofs may not be used on single-family detached units in nonbonded subdivisions to satisfy the BMP requirements of the Erosion and Stormwater Management Ordinance.

6-1309.3 Design of Vegetated Roofs.

A. 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 here 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 P-FIL-02 (formerly No. 5) Vegetated Roof ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ may be approved by the Director, if the facility meets all of the requirements of § 6-1309 (Vegetated Swales)~~*et seq*~~.

6-1309.4 Specifications of vegetated roof components.

E. Filter fabric. Filter fabric must be a non-woven, root penetrable, needled, polypropylene geotextile meeting the requirements of ~~Virginia Stormwater~~ Design Specification P-FIL-02 (formerly No. 5) Vegetated Roof ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Heat-set or heat-calendared fabrics are not permitted.

F. Growth media. Growth media must be a mineral and organic mixture that provides sufficient nutrients and water holding capacity to support the proposed plant materials. Growth media must meet the requirements of ~~Virginia Stormwater~~ Design Specification P-FIL-02 (formerly No. 5) Vegetated Roof ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. The growth media must be tested for organic content to demonstrate compliance with Level 1 or Level 2 design criteria using standard test methods.

6-1310 Reforestation

6-1310.1 General.

C. Reforestation must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(Appendix 4A) (latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1310.2 Feasibility and Limitations.

A. 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 Erosion and Stormwater Management 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. Any approval by the Director must be in writing and must specify the conditions deemed necessary to ensure establishment and protection of the reforested area.

B. Reforested areas may be located on individual residential lots in nonbonded subdivisions to satisfy the BMP requirements of the Erosion and Stormwater Management Ordinance. Designers should carefully consider the impact of the required easement on future use of the property.

6-1310.4 Design of Reforested Areas.

G. 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.

1. The depth of subsoiling, the amount of compost to be incorporated, and the incorporation depth must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1310.5 Subsoiling and Soil Amendment Specifications.

A. Compost. See ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ for required compost specifications.

6-1310.6 Construction.

A. See ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ for the basic construction sequence for the soil amendments.

6-1311 Rooftop (Impervious Surface) Disconnection

6-1311.1 General.

B. Rooftop Disconnections must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-01 (formerly No. 1) Rooftop Disconnection ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1311.4 Design.

A. Rooftop disconnections must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-01 (formerly No. 1) Rooftop Disconnection ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1312 Sheet Flow to a Vegetated Filter Strip or Conserved Open Space

6-1312.1 General.

B. Vegetated filter strips and conserved open space must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-07 (formerly No. 2) Sheet Flow to a Vegetated Filter Strip or Conserved Open Space ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations),~~ except as modified herein.

6-1312.2 Feasibility and Limitations.

A. 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 Erosion and Stormwater Management Ordinance.

B. Vegetated filter strips and conserved open space may be located on individual residential lots in nonbonded subdivisions to satisfy the BMP requirements of the Erosion and Stormwater Management Ordinance. Designers should carefully consider the impact of the required easement on future use of the property

6-1312.4 Design of Vegetated Filter Strips and Conserved Open Space.

A. The width of vegetated filter strips and conserved open space areas must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-07 (formerly No. 2) Sheet Flow to a Vegetated Filter Strip or Conserved Open Space ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Where the sheet flow to be treated originates from both pervious and impervious areas, the design must be based on the requirements for sheet flow from impervious areas.

C. 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.

1. The depth of subsoiling, the amount of compost to be incorporated, and the incorporation depth must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-07 (formerly No. 2) Sheet Flow to a Vegetated Filter Strip or Conserved Open Space ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1312.5 Subsoiling and Soil Amendment Specifications.

A. Compost. See ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ for required compost specifications.

6-1312.7 Construction.

A. See ~~Virginia Stormwater~~ Design Specification P-FIL-07 (formerly No. 2) Sheet Flow to a Vegetated Filter Strip or Conserved Open Space ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ for the basic construction sequence for vegetated filter strips and conserved open space and ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(latest version referenced~~ in the Virginia Stormwater

Management Handbook ~~VSMP Regulations)~~ for the basic construction sequence for the soil amendments.

6-1313 Soil Compost Amendment

6-1313.1 General.

B. Soil Compost Amendment must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1313.2 Feasibility and Limitations.

A. 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 Erosion and 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 must be in writing and must specify such conditions deemed necessary to ensure the effectiveness, reliability, and maintenance of the proposed facilities.

B. 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 Erosion and Stormwater Management Ordinance for construction on the lot.

6-1313.4 Design Criteria.

B. 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.

1. The depth of subsoiling, the amount of compost to be incorporated, and the incorporation depth must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1313.6 Construction.

A. See ~~Virginia Stormwater~~ Design Specification P-FIL-08 (formerly No. 4) Soil Compost Amendment ~~(latest version referenced~~ in the Virginia Stormwater

Management Handbook ~~VSMP Regulations)~~ for the basic construction sequence for the soil amendments.

6-1314 Rainwater Harvesting

6-1314.1 General.

C. Rainwater Harvesting systems must conform to ~~Virginia Stormwater~~ Design Specification P-BAS-04 (formerly No. 6) Rainwater Harvesting ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1314.2 Feasibility and Limitations.

C. 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 Erosion and Stormwater Management Ordinance.

6-1315 Wet Swale

6-1315.1 General.

A. 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.

B. Wet Swales must conform to ~~Virginia Stormwater~~ Design Specification P-CNV-03 (formerly No. 11) Wet Swales ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1315.2 Feasibility and Limitations.

A. 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 Erosion and Stormwater Management Ordinance.

6-1315.4 Design Criteria.

A. Treatment Volume. The required treatment volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-CNV-03 (formerly No. 11) Wet Swales ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

D. Variations of the wet swale designs in the typical details and schematics of wet swales in ~~Virginia Stormwater~~ Design Specification P-CNV-03 (formerly No. 11) Wet Swales ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~ may be approved by the Director, if the facility meets all of the requirements in § 6-1316 (Filtering Devices)~~*et seq*~~.

6-1315.7 Construction.

G. Additional guidelines for construction are provided in ~~Virginia Stormwater~~ Design Specification P-CNV-03 (formerly No. 11) Wet Swales ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1316 Filtering Practices

6-1316.1 General.

C. Stormwater filters must conform to ~~Virginia Stormwater~~ Design Specification P-FIL-06 (formerly No. 12) Filtering Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~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.

6-1316.2 Feasibility and Limitations.

B. 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 Erosion and Stormwater Management Ordinance.

6-1316.4 Design Criteria.

A. Filter Area and Storage Volume. The required filter area and storage volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-FIL-06 (formerly No. 12) Filtering Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1316.5 Specifications.

B. Filter fabric. Filter fabric must be a needled, non-woven, polypropylene geotextile meeting the requirements listed in ~~Virginia Stormwater~~ Design Specification P-

FIL-06 (formerly No. 12) Filtering Practices ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~. Heat-set or heat-calendared fabrics are not permitted.

6-1317 Constructed Wetlands

6-1317.1 General.

B. Constructed Wetlands must conform to ~~Virginia Stormwater~~ Design Specification P-BAS-01 (formerly No. 13) Constructed Wetlands ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1317.2 Feasibility and Limitations.

A. 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 must be in writing and must 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 Erosion and Stormwater Management Ordinance.

B. Setbacks. Constructed wetlands must meet the setback requirements of the ~~Virginia Stormwater~~ Design Specification P-BAS-01 (formerly No. 13) Constructed Wetlands ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1317.4 Design Criteria.

C. Treatment Volume. The required treatment volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-BAS-01 (formerly No. 13) Constructed Wetlands ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

D. 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 must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-BAS-01 (formerly No. 13) Constructed Wetlands ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1317.7 Construction.

H. Additional guidelines for construction are provided in ~~Virginia Stormwater~~ Design Specification P-BAS-01 (formerly No. 13) Constructed Wetlands ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1318 Wet Pond

6-1318.1 General.

B. Wet Ponds must conform to ~~Virginia Stormwater~~ Design Specification P-BAS-02 (formerly No. 14) Wet Pond ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1318.2 Feasibility and Limitations.

A. 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. Any approval by the Director must be in writing and must specify the 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 Erosion and Stormwater Management Ordinance.

B. Setbacks. Wet ponds must meet the setback requirements of the ~~Virginia Stormwater~~ Design Specification P-BAS-02 (formerly No. 14) Wet Pond ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1318.4 Design Criteria.

C. Treatment Volume. The required treatment volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-BAS-02 (formerly No. 14) Wet Pond ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1318.7 Construction.

H. Additional guidelines for construction are provided in ~~Virginia Stormwater~~ Design Specification P-BAS-02 (formerly No. 14) Wet Pond ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1319 Extended Detention Pond

6-1319.1 General.

B. Extended Detention Ponds must conform to ~~Virginia Stormwater~~ Design Specification P-BAS-03 (formerly No. 15) Extended Detention (ED) Pond ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~, except as modified herein.

6-1319.2 Feasibility and Limitations.

A. 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 Erosion and Stormwater Management Ordinance.

B. Setbacks. Extended detention ponds must meet the setback requirements of the ~~Virginia Stormwater~~ Design Specification P-BAS-03 (formerly No. 15) Extended Detention (ED) Pond ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1319.4 Design Criteria.

C. Treatment Volume. The required treatment volume must be determined in accordance with ~~Virginia Stormwater~~ Design Specification P-BAS-03 (formerly No. 15) Extended Detention (ED) Pond ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1319.7 Construction Specifications.

H. Additional guidelines for construction are provided in ~~Virginia Stormwater~~ Design Specification P-BAS-03 (formerly No. 15) Extended Detention (ED) Pond ~~(latest version referenced~~ in the Virginia Stormwater Management Handbook ~~VSMP Regulations)~~.

6-1320 Manufactured BMPs

6-1320.1 General.

B. Manufactured BMPs may be used to achieve water quality compliance, if they have been approved for use by the Virginia Department of ~~Conservation and Recreation~~ Environmental Quality and have been approved by the Director in accordance with §§ 6-0400 through 6-0402 (Stormwater Runoff Quality Control Criteria)~~*et seq*~~.

6-1320.2 Feasibility and Limitations.

A. Individual manufactured BMPs will have different site constraints and limitations. Manufacturer's specifications, approvals by the Virginia Department of ~~Conservation and Recreation~~ Environmental Quality, and approvals by the Director should be consulted to ensure that manufactured BMPs are feasible for use on a specific site.

D. 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 Erosion and Stormwater Management Ordinance.

6-1320.4 Design Criteria.

B. Manufactured BMPs must be designed in accordance with all requirements developed by the ~~Virginia Department of Conservation and Recreation~~ Virginia Department of Environmental Quality 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 before use.

C. Manufactured BMPs must 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~~ Chapter 124.1 of the Code.

11-0102 General Plan Preparation

11-0102.1 The designer preparing the drawings must include in these construction plans adequate measures for control of E&S conforming to the guidelines, policies, standards and specifications contained in the PFM, the current ~~"~~Virginia Stormwater Management ~~Erosion and Sediment Control~~ Handbook,~~"~~ and ~~Chapter 104 (Erosion and Sedimentation Control)~~ Chapter 124.1 (Erosion and Stormwater Management) of the Code. No development is permitted until an E&S control plan has been approved.

11-0106 Data Availability

11-0106.1 Agencies available for consultation are LDS, DPD and the NVSWCD.

11-0106.2 Standards and specifications are provided in the current Virginia Stormwater Management ~~E&S Control~~ Handbook. Some supplemental County standards are included in Plates ~~1-11~~ 2-11 through 5-11~~, Chapter 104 of the Code and below~~. ~~Section 104-1-8(a) of the Code contains~~ The modifications to State standards included below ~~which~~ are mandatory in the County.

A. Standard and Specification C-PCM-04 (Formerly #3.05) – Silt Fence. "Super" silt fence (See Plate 5-11), which is a temporary sediment barrier consisting of

synthetic filter fabric stretched across and attached to chain link fencing supported by metal posts, may be utilized below disturbed areas where topographical and drainage conditions do not exceed the design criteria below.

B. Standard and Specification C-SCM-11 (formerly #3.13) -Temporary Sediment Trap. For land areas designated as RPAs, the storage volume must be 202 cy/acre of disturbed area. Pipe outlet sediment traps are required for drainage areas of 1 to 3 acres; for land areas designated as RPAs, pipe outlet sediment traps may also be required for disturbed areas of less than 1 acre where topographical and drainage conditions are favorable for field implementation (see Plate 2-11 for details). Stone outlets for temporary sediment traps for drainage areas under 1 acre outside of County designated RPAs must be constructed according to current Virginia Stormwater Management ~~E&S Control~~ Handbook specifications.

C. Standard and Specification C-SCM-12 (formerly #3.14) - Temporary Sediment Basin. For land areas designated as RPAs, the storage volume must be 202 cy/acre of disturbed area.

D. Standard and Specification C-SCM-03 (formerly #3.02) - Brush Temporary Stone Construction Entrance. The minimum length for a temporary gravel construction entrance must be 75 feet and a woven filter fabric underliner is required. If the action of vehicles traveling over the gravel pad is not sufficient to remove the majority of the mud, then a wash rack is required with an appropriate water source to wash the mud off the tires before entering the public road.

E. Standard and Specification C-PCM-02 (formerly #3.04) - Brush Straw Bale Barrier. Rebars may not be used to stake these barriers. Straw Bale Barriers may only be used for sheet flow applications. Straw Bale Barriers may not be used for any drainageway or channel flow applications or for site development perimeter control.

F. Standard and Specification C-PCM-03 (formerly #3.06) - Brush Barrier. This practice may not be used without the specific authorization of the Director.

G. Standard and Specification C-SCM-04 (formerly #3.07) - Brush Storm Drain Inlet Protection. Any storm drain inlet protection measure which completely blocks the drain's throat or entrance may not be used. Straw bales and cinder block wrapped with filter fabric may not be used for curb inlet protection.

H. Standard and Specification C-SSM-07 (#3.34) - Bermuda Grass and Zoysia Grass Establishment. This practice may not be employed in Fairfax County.

I. Standard and C-SSM-01 (formerly Specification #3.38) - Tree Preservation and Protection. This section is not to be used in Fairfax County. In its place, Chapter 12, "Tree Conservation," of the Public Facilities Manual must be used.

J Standard and Specification C-ENV-01 (formerly #3.22) - Vegetative Streambank Stabilization. Bioengineering stabilization techniques require coordination of plant science, soils science, and engineering principles. They should be employed only with the guidance of experts familiar with bioengineering work. Approval of the Director is required.

11-0304 General Land Conservation Notes

11-0304.1 ~~No disturbed area which is not actively being worked may remain denuded for more than 14 calendar days unless otherwise authorized by the Director.~~ Permanent or temporary soil stabilization must be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization must be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization must be applied to areas that are to be left dormant for more than one year.

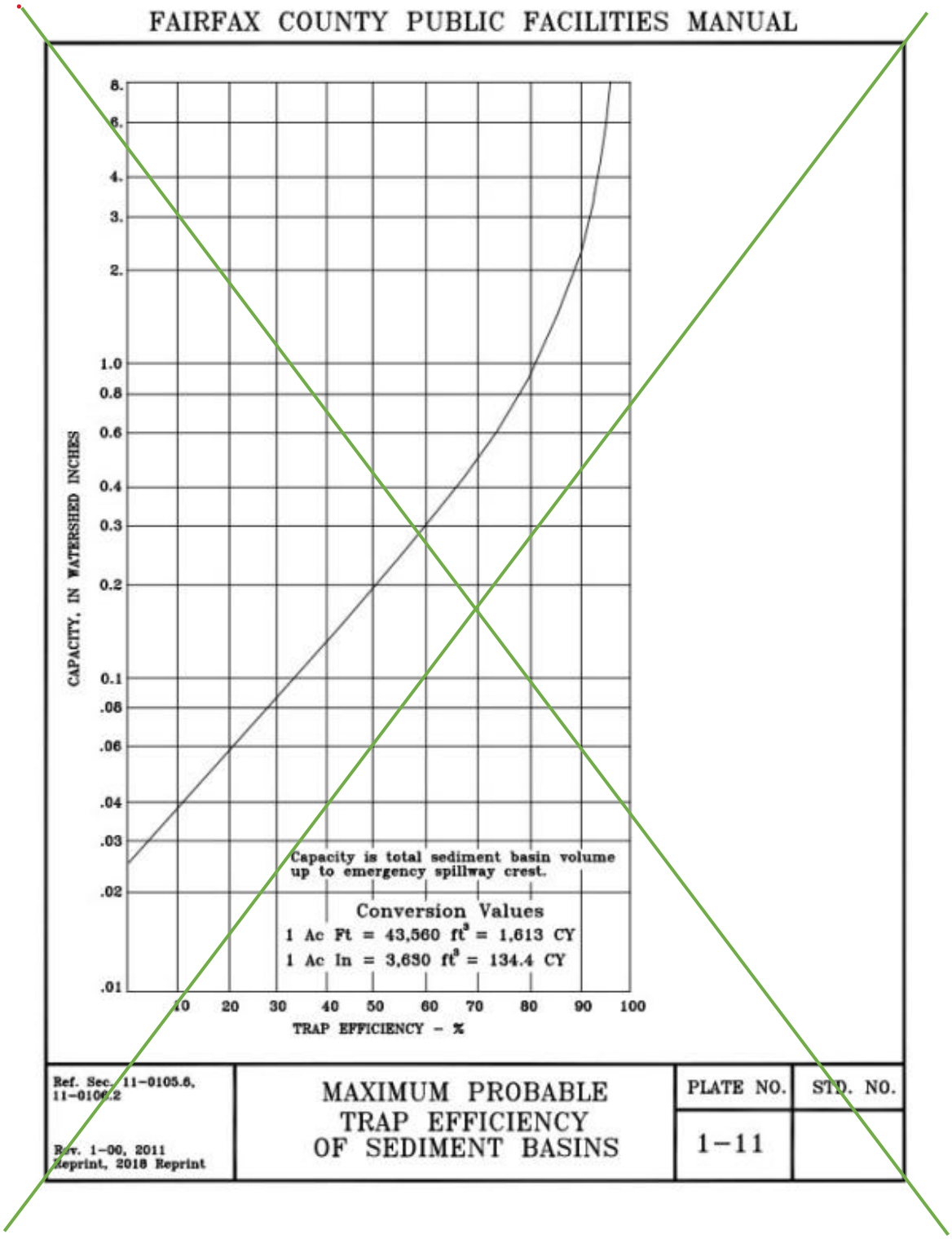
11-0305 Land Conservation Notes - Linear Projects

11-0305.1 ~~No disturbed area which is not actively being worked may remain denuded for more than 14 calendar days unless otherwise authorized by the Director.~~ Permanent or temporary soil stabilization must be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization must be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization must be applied to areas that are to be left dormant for more than one year.

11-0306 Biotechnical Slope and Bank Protection

~~11-0306.7 As bioengineering stabilization techniques call for coordination of plant science, soils science and engineering principles, they should be employed only with the guidance of experts familiar with bioengineering work. Approval of the Director is required.~~

Delete Plate 1-11 (Maximum Probable Trap Efficiency of Sediment Basins) and Update Chapter 11 List of Plates



12-0100 PURPOSE AND INTENT

12-0100.1 The purpose and intent of § 12-0000 (Tree Conservation)~~*et seq*~~. is to provide plan submission requirements, technical specifications and on-site practices that support the administration, implementation and enforcement of the tree conservation requirements of the Code including Chapter 101 (Subdivision Ordinance), ~~Chapter 104 (Erosion and Sedimentation Control),~~ Sections 5108 and 8100.7 of the Zoning Ordinance, Chapter 118 (Chesapeake Bay Preservation Ordinance), Chapter 120 (Heritage, Specimen, Memorial and Street Tree Ordinance), ~~and~~ Chapter 122 (Tree Conservation), and Chapter 124.1 (Erosion and Stormwater Management Ordinance).

12-0100.2 On ~~Oct.~~ October 20, 2008, the Board adopted an ordinance ~~en~~titled "Tree Conservation Ordinance" which became Chapter 122 of the Code. The ~~new~~ Tree Conversation Ordinance is based on the authority and mandates of Va. Code Ann § 15.2-961.1 which enables jurisdictions located in Virginia Planning District 8 and classified as part of an eight-hour nonattainment area for ozone to enact local tree ordinances that emphasize tree preservation over tree planting when meeting tree canopy requirements. At that same time, this chapter was renamed "Tree Conservation" and rewritten to incorporate plan submission requirements, specifications and practices that support existing authority to conserve vegetation during land development pursuant to Chapters 101, ~~104,~~ 112.2, ~~and~~ 118, and 124.1 of the Code in addition to ~~new~~ Chapter 122 of the Code.

12-0300 TREE CONSERVATION PLAN REQUIREMENTS

12-0300.1 Tree Conservation Plan. Section ~~104-1-2~~ 124.1-6-2 of the Code states that ~~a conservation~~ an erosion and sediment control plan is required of anyone engaging in land disturbing activities in the County.

A. Tree Conservation Plan. A Tree Conservation Plan is required when land disturbance requiring ~~a conservation~~ an erosion and sediment control plan also involves one or more of the following scenarios.

1. Land disturbance has potential to destroy or degrade on-site trees or trees located on adjacent property, including trees designated for preservation through the provisions of Chapter 120 of the Code.
2. Development sites are required to preserve or plant trees to meet 10-year Tree Canopy requirements of Chapter 122 of the Code, or to meet related provisions of Chapters 101, ~~104, and~~ 112.2, and 124.1 of the Code.
3. Development sites are required to preserve or plant trees and/or other plant materials and landscape features in order to comply with Parking Lot Landscaping or Transitional Screening and Barrier Requirements of Section 5108 of the Zoning Ordinance; or to comply with tree or landscaping requirements of proffered conditions; development plans, conceptual/final

development plans, PRC plans, special permits, special exceptions or variance approvals.

4. Development sites are required to restore forested areas within an Resource Protection Area as required by Chapter 118 of the Code and as further defined by § 12-0316.4.
5. Development sites are required to replant trees or vegetation in accordance with the provisions of § 12-0316; or, are required to address violations issued for land disturbing activity involving the removal of trees without an approved plan in accordance with Chapter ~~104~~ 124.1 of the Code and as further defined by § 12-0316.5.

12-0300.4 Tree Conservation Plans must be submitted as part of all grading plans for Building Permits on existing lots that are not within a subdivision currently bonded with the County and parcels with lots of 5 acres or more as required by ~~Chapter 104 (Erosion and Sedimentation Control)~~ Chapter 124.1 (Erosion and Stormwater Management Ordinance) of the Code.

12-0309 Tree Preservation Plan and Narrative

12-0309.1 Except as modified by § 12-0303, any Tree Conservation Plan that uses tree preservation to satisfy 10-year Tree Canopy requirements of Chapter 122 of the Code; to satisfy erosion and sedimentation control purposes relating to ~~104~~ 124.1 of the Code, or to satisfy proffered conditions, development plans, conceptual/final development plans, PRC plans, special permits, special exceptions, or variance approvals must provide a tree preservation plan and narrative as part of the Tree Conservation Plan as follows.

12-0316 Requirements and Specifications for Replacement Trees and/or Vegetation

12-0316.5 Land disturbing activity without an approved plan.

A. When a violation is issued for land disturbing activity involving the removal of trees without an approved plan in accordance with Chapter ~~104~~ 124.1 of the Code, a Tree Conservation Plan must be submitted to the County within the time frame established on the violation. The Tree Conservation Plan must show all site features as they existed before the violation and the site features as they are proposed to appear, in the same manner as if a violation had not occurred. The Tree Conservation Plan must provide a date for completion of all items shown on the plan.

Update References and Incorporate Stacked Townhouses to Align PFM with Zoning Ordinance
pages 31-35

2-0203.2 An approved subdivision plan or an approved site plan for ~~townhouses~~ single-family attached homes constitutes a sufficient basis for the issuance of a clearing and grading permit for the particular project within the clearing and grading limits and for that grading specified in the plan (see § 2-0700).

2-0502.1 The Agreement. The agreement is a legal, binding contract between the developer and the County that specifies the manner and the date by which the physical site improvements, as shown on the approved plans, must be completed.

A. Agreements for Residential Developments. An agreement, supported by a bond or other security, is required on all projects and obligates the developer to construct the required improvements shown on the approved subdivision plans or site plans for single-family attached and stacked townhouse, condominium, and apartment developments, within the specified time limit.

6-0303.2 Detention and BMP facilities located in industrial, commercial, institutional, apartment developments and rental single-family attached and rental stacked townhouses must be maintained by the property owner, and a Private Maintenance Agreement must be executed before the construction plan is approved. Access provisions must be considered for the continued operation and maintenance of these facilities.

Table 6.3 Use and Location of BMPs (√ denotes allowed)

BMP	Non-residential	Multi-family and mixed-use	Single-family attached and detached ~~R~~residential subdivision lots[1, 2]	Stacked townhouse	Outlots in residential subdivisions	Nonbonded subdivision lots[2,3]	VDOT right-of-way[4]
Simple Rooftop Disconnection[5] (§ 6-1311)					N/A		N/A
Rooftop Disconnection to	√	√		√	√	6	N/A

Table 6.3 Use and Location of BMPs (√ denotes allowed)							
BMP	Non-residential	Multi-family and mixed-use	Single-family attached and detached ~~R~~residential subdivision lots[1, 2]	Stacked townhouse	Outlots in residential subdivisions	Nonbonded subdivision lots[2,3]	VDOT right-of-way[4]
Alternative Practice[6] (§ 6-1311)							
Sheet Flow to Vegetated Filter or Conserved Open Space (§ 6-1312)	√	√		√	√	√	N/A
Soil Compost Amendment (§ 6-1313)	√	√	1, 2	√	√	√	N/A
Reforestation (§ 6-1310)	√	√	1	√	√	√	N/A
Vegetated Roof (§ 6-1309)	√	√			N/A		N/A
Rainwater Harvesting (§ 6-1314)	√	√					N/A
Permeable Pavement (§ 6-1304)	√	√	2	√	N/A		
Infiltration Practices (§ 6-1303)	√	√	1	√	√	√	
Bioretention (§ 6-1307)	√	√	1	√	√	√	√
Vegetated Swales (§ 6-1308)	√	√	1	√	√	√	√
Wet Swale (linear wetland) (§ 6-1315)	√	√		√	√		√
Filtering Practice (§ 6-1316)	√	√		√	√		√
Constructed Wetland (§ 6-1317)	√	√		√	√		

Table 6.3 Use and Location of BMPs (√ denotes allowed)							
BMP	Non-residential	Multi-family and mixed-use	Single-family attached and detached ~~R~~residential subdivision lots[1, 2]	Stacked townhouse	Outlots in residential subdivisions	Nonbonded subdivision lots[2,3]	VDOT right-of-way[4]
Wet Pond (§ 6-1318)	√	√		√	√		
Extended Detention Pond (§ 6-1319)	√	√		√	√		
Manufactured (Proprietary) BMP (§ 6-1320)	√	√		√	√		√

1. The Director may approve the use of these BMPs on lots in residential subdivisions of no more than seven lots; however approval by the Board of Supervisors is required for use of such BMPs on lots in residential subdivisions of no more than seven lots in conjunction with the approval of a rezoning, proffered condition amendment, special exception, or special exception amendment.
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.

6-1108.4 Single-Family Attached and Stacked Townhouse Downspout Discharges – Any downspout discharging onto yards (particularly on rear yards) which consist of filled ground, where the runoff will flow over a fill grade of 15 percent or greater within 30 feet of the pipe discharge location, must have the downspout picked up by an underdrain and carried out to the toe of the fill slope to natural ground.

6-1309.2 Feasibility and Limitations.

A. 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.

B. Vegetated roofs may not be used on single-family detached, ~~or~~ attached, or stacked townhouse units for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1314.2 Feasibility and Limitations.

A. Rainwater harvesting may be used for commercial, industrial, or multi-family residential uses to supply all or a portion of non-potable water demand.

B. 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.

C. Rainwater harvesting systems may not be located in single-family attached, ~~or~~ detached, or stacked townhouse residential developments for the purpose of satisfying the detention, water quantity, or water quality control (BMP) requirements of the Stormwater Management Ordinance.

6-1319.3 Maintenance.

A. Extended detention ponds located in residentially zoned areas, including condominium developments, must be within County storm drainage easements, and must be maintained by DPWES. Extended detention ponds located in industrial, commercial, institutional, apartment developments, ~~and~~or rental single-family attached or rental stacked townhouses must be maintained by the property owner, and a Private Maintenance Agreement must be executed before the construction plan is approved.

7-0303.4 All two-way commercial entrances from public streets, including entrances to single-family attached, stacked townhouse, or multi-family dwelling developments and private streets, must be a minimum of 30-feet wide at the back of the entrance return.

9-0102.2 All water mains, their sizes, valves and fire hydrants, and their relationship to gas lines must be shown as indicated below:

A. In subdivision streets, the water main should be located 8 feet north or east of the street centerline, and the gas main should be located 8 feet south or west of the centerline.

B. On loop streets, the water main should be located 8 feet north or east of the predominate centerline of the street. The gas main should be located 8 feet south or west of the predominate centerline of the street. The water and gas mains should then continue on the same side of the centerline as determined above for their entire length of the streets.

C. Due to space restrictions of most single-family attached and stacked townhouse streets, it is not feasible to specify the side of the street on which the water line should be located. Developers of townhouse sites must confer with the public water supply agency and the appropriate natural gas supply agency for satisfactory utility locations.

D. Service connections must be stubbed to the property line before the street paving section is constructed.

Table 9.1 Fire Hydrant Maximum Coverage Distance

Building Type	Maximum Distance (ft.)
Industrial buildings and warehouses	250
Schools, day care centers	300
Offices, commercial, church, hospitals, nursing homes	350
Apartments, multi-family dwellings, single-family attached dwellings, and stacked townhouses dwellings	350
Detached Single family dwellings	500

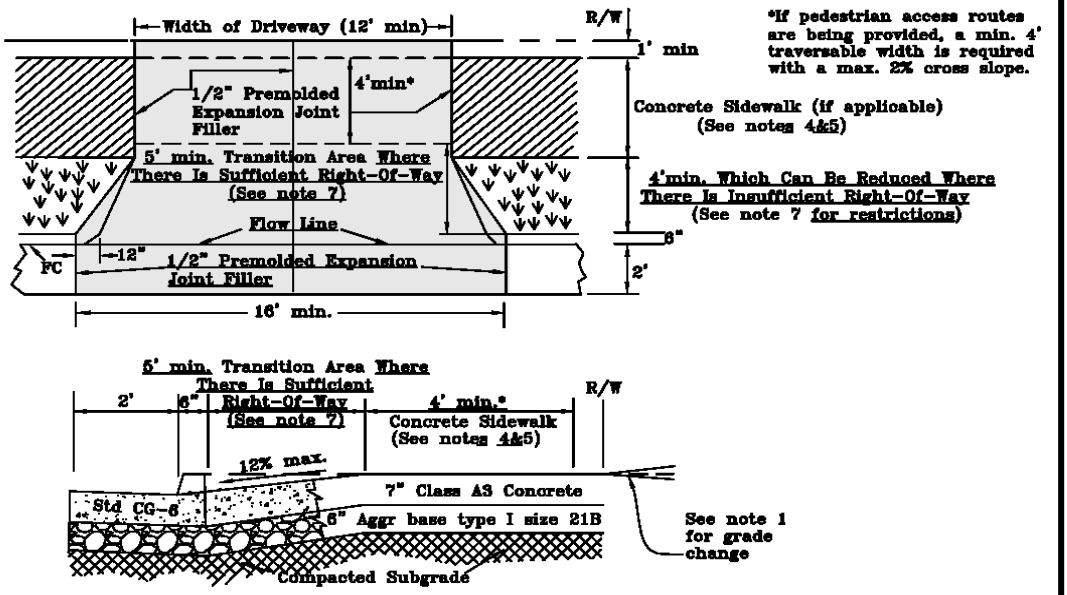
10-0104.5 Building Laterals

A. In subdivisions where the sanitary street sewer mains are being installed by the developer, the developer also must install a lateral or extension from the sanitary sewer main to a minimum of 20 feet beyond the property line or within 5 feet of the minimum yard requirement, whichever distance is less, for ss~~S~~ingle-ff~~F~~amily dd~~D~~etached lots, and to a minimum of 5 feet beyond the property line or sanitary sewer easement, whichever distance is greater, for ss~~S~~ingle-ff~~F~~amily attached and stacked tt~~T~~ownhouse lots in accordance with Plates 18-10 and 19-10. This extension is to receive the building sewer for each lot.

1. Such extensions must be shown on the sewer plans submitted to and approved by the Director and the extension must be installed in the exact location as shown on the plan.

Update Driveway Entrance Detail (DE-1) to Align PFM with VDOT Standards
page 36

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



NOTES

1. Lot grading plans must provide for adequate vehicular clearance for driveway approach, departure and breakover transitions in accordance with the current VDOT Standards. Driveway profiles are required where steep grades prevail.

2. All materials and construction of these designs in a R/W to be maintained by VDOT must be in accordance with the current VDOT Road and Bridge Specifications and Standards.

3. This entrance may be used in roads that have an ADT of up to 5,499.

4. Sidewalk must be provided in accordance with Section 8-0100 et. seq. of the Public Facilities Manual and must meet the standards set forth in the VDOT Road Design Manual. Sidewalk cross slopes, including passing areas (full 5-foot width) and driveway crossing (min. 4-foot width), must not exceed 2%.

5. Distances between features, and distance between features and right of way line must be in accordance with the current VDOT Standards, unless otherwise shown.

6. This driveway entrance is for single family detached homes along existing streets and is subject to VDOT approval. It is not to be used in new subdivisions.

7. In cases where a sidewalk is required, the adjacent sidewalk grade may need to be modified in order to meet the 12% driveway maximum grade. The reconstructed sidewalk grade, width and alignment must meet VDOT requirements for sidewalks including accessibility. This must include positive drainage of the utility strip area in locations where the sidewalk grade is modified. Any slope or alignment modified from the standard must be noted on the plans.

Ref. Sec. 7-0403 Rev. 10-20	RESIDENTIAL DRIVEWAY ENTRANCE	PLATE NO.	STD. NO.
		20-7	DE-1

Updates to Codify Current Processes
page 37-38

Amend Plate 2-2 (Revision Block), to read as follows:

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL

NO.	DESCRIPTION	~~APPROVED~~	DATE
REVISION APPROVED BY SITE DEVELOPMENT AND INSPECTIONS DIVISION			

Ref. Sec. ~~2-0211.3D~~ 2-0207.3D Rev. 1-00, 2011 Reprint, 2018 Reprint	REVISION BLOCK	PLATE NO.	STD. NO.
		2-2	

9-0201.3 Fire Protection Modification Procedures

A. The following information is to be provided when requesting a modification of any fire protection requirement of the PFM. Please follow the requirements of the code modification process.

B. All requests must be submitted ~~and addressed to the Fire Marshal's Office,~~ to LDS, and include the following:

1. A plan or sketch showing the proposed location of all improvements on the site and the type of construction involved.

2. The address, tax map reference number and the proposed use of the property.

3. The current zoning classification of the property and if recently rezoned, the rezoning number and the date of approval by the Board. Copies of any required special exception or special permit with date of approval.

4. The specific item requested to be modified.

5. The length of time for which the modification is requested.

6. Any proposed alternate form of fire protection.

7. The name, address and telephone number of the person making the request.

8. The County assigned number for site and subdivision plans and modification requests associated with the property.

6-1111 Sump Pump Discharge

6-1111.1 For single-family detached dwellings, sump pumps may not discharge closer than 10 feet to any property line measured in the direction of flow. The sump pump discharge should not create a safety hazard or a nuisance, such as soil erosion or ponding. Designers must show the location of the sump pump discharge on the associated grading plan.