Municipal Separate Storm Sewer System (MS4) Program Plan

VSMP Phase II MS4 Program
Hanover County, Virginia

Permit No. VAR040012

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TABLE OF CONTENTS

MINIMUM CONTROL MEASURE 1 - Public Education and Outreach

Hanover County will implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

Hanover County shall identify, schedule, implement, evaluate and modify, as necessary, BMPs to meet the following public education and outreach measurable goals:

Measureable Goal 1.a – High Priority Stormwater Issues

Three high-priority stormwater issues that the County intends to focus on to comply with the requirements of the MS4 VPDES General Permit

BMP 1.a.(1) – Chesapeake Bay TMDL

The County will inform residents of the requirements of the Chesapeake Bay TMDL and the obligation to address the TMDL under the provisions of the MS4 permit.

Policies, Ordinances, and Written Procedures

Public Education and Outreach Plan, *See Appendix A*

Implementation Schedule

Follow Public Education and Outreach Plan - Years 1-5

Responsible Individual, Department, Division, or Unit

Hanover County Department of Public Works

Objective and Expected Results

Increased public knowledge of the Chesapeake Bay TMDL

Method to Determine BMP Effectiveness

Number of issues of the Hanover Review distributed

Items Needed for Annual Report

List of the education and outreach activities conducted, estimated number of people reached, and estimated percentage of the target audience reached for the current and next reporting period.

BMP 1.a.(2) – Pet Waste Management Program (Pooch Pal)

The pet waste management program places post-mounted distribution boxes for bags to be used for the collection of pet wastes in public parks, recreational areas, and in neighborhoods. This will serve to educate the public of the importance of the collection of these wastes. In year 2 of our permit a flier will be developed discussing pet wastes effects on stormwater. The flier will be distributed along with materials to renew dog licenses.

Policies, Ordinances, and Written Procedures

Public Education and Outreach Plan, *See Appendix A*

Implementation Schedule

Follow Public Education and Outreach Plan - Years 1-5

Responsible Individual, Department, Division, or Unit

Hanover County Department of Public Works

Hanover County Parks and Recreation

Hanover County Treasurer's Office

Objective and Expected Results

Awareness that pet waste contributes to pollution

Collection of pet waste

Method to Determine BMP Effectiveness

Number of fliers distributed to licensed dog owners and distribution of flier to 100% of pet owners.

Track number pet waste boxes in Hanover County

Amount of pet waste collected, based on the number of bags used.

Items Needed for Annual Report

Report tonnage, locations of all pet waste boxes and numbers of bags distributed to collect pet wastes, and number of fliers distributed to licensed dog owners. Estimate for the next reporting period.

BMP 1.a.(3) – Commercial Site Inspections

The County will conduct inspections of designated retail areas twice a year and note any litter trash or stormwater issues to the management of the business located there.

Policies, Ordinances, and Written Procedures

Public Education and Outreach Plan, *See Appendix A*

Implementation Schedule

Conduct commercial site inspections - Years 1-5

Responsible Individual, Department, Division, or Unit

Waste Collection Superintendent

Hanover County Department of Public Works

Objective and Expected Results

Increased awareness of businesses' management of waste materials.

Method to Determine BMP Effectiveness

Properly managed waste at commercial centers

Number of inspections performed and sites visited

Notify 100% of noncompliant businesses of trash and stormwater issues

Items Needed for Annual Report

Date and location of inspections conducted, as well as any follow-up actions. Estimated number of businesses reached and estimated percentage of the target audience reached. Estimate for the next reporting period

MINIMUM CONTROL MEASURE 2 - Public Involvement/Public Participation

Hanover County will comply with applicable state, tribal, and local public notice requirements when implementing the MS4 Program.

Hanover County shall identify, schedule, implement, evaluate and modify, as necessary, BMPs to meet the following public involvement/participation measurable goals:

Measurable Goal 2.a – Promote Availability of MS4 Program Plan

Promote the availability of the operator's MS4 Program Plan and any modifications for public review and comment. Public notice shall be given by any method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation. Provide access to or copies of the MS4 Program Plan or any modifications upon request of interested parties in compliance with all applicable freedom of information regulations;

BMP 2.a.(1) – Place MS4 Program Plan on Hanover County Website

The environmental section of the Public Works website will be updated to specifically promote the MS4 Program Plan and provide a contact for obtaining the plan and information on the MS4 program. The MS4 Program Plan will be placed on the website.

Policies, Ordinances, and Written Procedures

Website information developed to promote MS4 Program Plan

Implementation Schedule

Maintain updated MS4 Program Plan on website - Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Visitors to Hanover's website will be made aware of the MS4 Program Plan.

Method to Determine BMP Effectiveness

Document the number of requests for the MS4 Program Plan

Ensure MS4 Program Plan is available on Hanover's website

Items Needed for Annual Report

A web link to the MS4 Program Plan webpage

Measurable Goal 2.b – Provide Annual Report Upon Request

Provide access to or copies of the annual report upon request of interested parties in compliance with all applicable freedom of information regulations; and

BMP 2.b.(1) – Place MS4 Annual Report on Hanover County Website

Copies of the MS4 Annual Report will be available to interested parties upon request.

Policies, Ordinances, and Written Procedures

Website information developed to promote MS4 Program Plan

Implementation Schedule

Make Annual Report available - Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Increase public awareness of availability of the MS4 Annual Report

Method to Determine BMP Effectiveness

Document the number of requests for the MS4 Annual Report

Ensure MS4 Annual Report is available on Hanover's website

Items Needed for Annual Report

A web link to the MS4 Annual Report

Measurable Goal 2.c. – Participate in Activities Aimed at Reducing Pollutant Loads

Participate, through promotion, sponsorship, or other involvement, in a minimum of four local activities aimed at increasing public participation to reduce stormwater pollutant loads, improve water quality, and support local restoration and cleanup projects, programs, groups, meetings, or other opportunities for public involvement.

BMP 2.c.(1) – Identify organizations aimed at improving water quality

Hanover County will identify the local organizations aimed at improving water quality

Policies, Ordinances, and Written Procedures

None

Implementation Schedule

Continue support of activities aimed at improving water quality - Years 1-5

Responsible Individual, Department, Division, or Unit

Hanover County Public Works

Hanover/Caroline Soil and Water Conservation Service

Objective and Expected Results

Provide list of organizations in Hanover County aimed at protecting water quality

Method to Determine BMP Effectiveness

Number of public participants reached

Items Needed for Annual Report

Documentation of compliance with the public participation requirements

BMP 2.c.(2) - Watershed education for students

Watershed Education for Students - The County will continue to support the efforts of the Hanover/Caroline Soil and Water Conservation Service to provide a meaningful watershed experience for Hanover County Students.

Policies, Ordinances, and Written Procedures

Hanover/Caroline Soil and Water Conservation District - Plan of Work

Hanover/Caroline Soil and Water Conservation District - Memorandum of Understanding

Implementation Schedule

Continue watershed education for students - Years 1-5

Responsible Individual, Department, Division, or Unit

Hanover County Department of Public Works

Hanover/Caroline Soil and Water Conservation Service

Objective and Expected Results

Increased student knowledge on the influences of stormwater on water quality

Method to Determine BMP Effectiveness

Participation in class

Items Needed for Annual Report

Content of program and dates of seminars and/or outings

BMP 2.c.(3) - Support of Master Gardeners program

Support of Master Gardeners Program - The County will continue to participate in seminars for the Master Gardeners program. The Master Gardeners are environmental educators who we have routinely included in our educational efforts related to our MS4 program. Master Gardeners are environmental stewards who, in turn, educate the public regarding water quality and other environmental issues.

Policies, Ordinances, and Written Procedures

Hanover/Caroline Soil and Water Conservation District - Plan of Work

Hanover/Caroline Soil and Water Conservation District - Memorandum of Understanding

Implementation Schedule

Continue support of Master Gardeners program – Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Increased knowledge of methods to reduce stormwater pollution

Method to Determine BMP Effectiveness

Participation in classes and training

Items Needed for Annual Report

Date and content of presentations

Training participants

BMP 2.c.(4) - Development Community Meeting

Development Community Meeting – Hanover County sponsors a regular development community meeting. Topics to discuss will include initiatives regarding stormwater, erosion and sediment control, Chesapeake Bay preservation and associated issues.

Policies, Ordinances, and Written Procedures

County sponsors regular development community meeting

Implementation Schedule

Conduct Development Community Meeting - Years 1-5

Responsible Individual, Department, Division, or Unit

Community Development Departments

Objective and Expected Results

Increased developer, consultant, and employee awareness of issues and initiatives regarding stormwater, erosion and sediment control, and Chesapeake Bay preservation.

Method to Determine BMP Effectiveness

Attendance for developers meeting

Items Needed for Annual Report

Agenda for Quarterly Developer's Meeting

BMP 2.c.(5) – Assign-A-Highway

The County is currently working with several groups on the Assign-A-Highway Program:

1. Pamunkey Regional Jail Crew
2. Hanover County Community Corrections
3. Hanover County Juvenile Court Services

Individuals are assigned to pick up litter on multiple highway segments in the County to reduce litter and the floatable wastes entering stormwater infrastructure.

Policies, Ordinances, and Written Procedures

Assign a Highway Outreach Program Quarterly Report. The report identifies tonnage collected and road segments that are addressed each quarter.

Implementation Schedule

Implement Assign a Highway Program – Years 1-5

Responsible Individual, Department, Division, or Unit

Waste Services Superintendent

Public Works

Objective and Expected Results

Reduced litter on highways

Method to Determine BMP Effectiveness

Tonnage collected

Items Needed for Annual Report

Tonnage collected, road segments addressed

BMP 2.c.(6) – Household Hazardous Waste Collection

Used motor oil, used residential oil filters, used anti-freeze and automobile batteries are accepted at all convenience centers in Hanover County during normal operating hours. Special household hazardous waste is collected at a dedicated event 1 times per year.

Policies, Ordinances, and Written Procedures

Availability of these programs for household hazardous waste disposal will be advertised by Hanover County.

Implementation Schedule

Implement household hazardous waste collection – Years 1-5

Responsible Individual, Department, Division, or Unit

Waste Services Superintendent

Public Works

Objective and Expected Results

Encourage proper disposal of household hazardous wastes.

Method to Determine BMP Effectiveness

Tonnage collected.

Items Needed for Annual Report

Press release for waste collection events

BMP 2.c.(7) – Street Sweeping Program

Sweep roads within the MS4 area 2 weeks per year. Street sweeping will reduce pollutants discharged to the MS4.

Policies, Ordinances, and Written Procedures

None

Implementation Schedule

Implement street sweeping – Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Remove small particles and trash from County roads

Method to Determine BMP Effectiveness

Tonnage collected.

Items Needed for Annual Report

Tonnage collected. Dates sweeping occurred.

BMP 2.c.(8) – Grass Roots Neighborhood Recycling

In response to citizen input, Hanover has created special service districts that communities may participate in at their own option to increase recycling in individual subdivisions. At each community meeting the options available under the program are presented. In addition, information is presented on composting and other programs that encourage environmental responsibility.

Policies, Ordinances, and Written Procedures

Recycling service district application procedure

Implementation Schedule

Implement grass roots driven neighborhood recycling – Years 1-5

Responsible Individual, Department, Division, or Unit

Waste program manager

Public Works

Objective and Expected Results

Provide grass roots driven recycling in the County

Method to Determine BMP Effectiveness

List of participating neighborhoods

Items Needed for Annual Report

Number of participants

MINIMUM CONTROL MEASURE 3 - Illicit Discharge Detection and Elimination

Hanover County shall identify, schedule, implement, evaluate and modify, as necessary, BMPs to meet the following illicit discharge detection and elimination measurable goals:

Measureable Goal 3.a – Illicit Discharge Procedures

The County has developed and implemented written procedures to detect, identify, and address unauthorized non-stormwater discharges to the MS4.

BMP 3.a.(1) – Outfall Screening

Hanover County will screen all regulated outfalls during the term of the MS4 permit. Focus will be placed on watersheds with impaired stream segments. Watersheds where waste load allocations have been established will receive greatest focus.

Policies, Ordinances, and Written Procedures

Hanover County Outfall Screening Procedures, *See Appendix B*

Discharges to storm sewer system - Hanover County Code Chapter 10, Article IV, Sec. 10-74

Implementation Schedule

Screen all outfalls during the term of the MS4 permit – Years 1-5

Responsible Individual, Department, Division, or Unit

Hanover County Public Works

Objective and Expected Results

Identify outfalls that may be regularly contributing to stormwater pollution or may contain illicit discharges

Method to Determine BMP Effectiveness

Outfalls screened and results of screening.

Items Needed for Annual Report

The total number of outfalls screened during the reporting period, the screening results, and detail of any follow-up actions necessitated by the screening results.

BMP 3.a.(2) – Tracking and Reporting

Track the number of illicit discharges identified and provide narrative on how they were eliminated.

Policies, Ordinances, and Written Procedures

Illicit Discharge Tracking and Response Procedures, *See Appendix B*

Implementation Schedule

Respond to reports of illicit discharge – Years 1-5

Responsible Individual, Department, Division, or Unit

Hanover County Public Works

Fire and EMS

Objective and Expected Results

Maintain procedures for illicit discharge tracking and response.

Method to Determine BMP Effectiveness

Proper documentation and follow-up of illicit discharges.

Items Needed for Annual Report

A summary of each investigation conducted by the operator of any suspected illicit discharge.

Measurable Goal 3.b – Storm Sewer System Mapping

Develop, if not already completed, and maintain, an updated storm sewer system map, showing the location of all known outfalls of the regulated small MS4 including those physically interconnected to a regulated MS4, the associated surface waters and HUCs, and the names and locations of all impaired surface waters that receive discharges from those outfalls. The operator shall also estimate the acreage within the regulated small MS4 discharging to each HUC and impaired water;

BMP 3.b.(1) – Map outfalls

Maps will be prepared of all known regulated outfalls, the associated HUCs, and the names and locations of surface waters receiving discharges for the outfalls. The acreage discharging to each HUC and impaired water will be noted.

Policies, Ordinances, and Written Procedures

None

Implementation Schedule

Develop standard content of mapping with GIS department – Year 1

Develop procedure to add new outfall locations – Year 2

Provide estimate of acreage directly draining to HUCs and impaired waters – Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Prepare required maps

Method to Determine BMP Effectiveness

Maps to be updated during the term of the permit

Items Needed for Annual Report

Outfall map containing the required information – Year 4

Measurable Goal 3.c – Downstream MS4 Notification

Notify, in writing, any downstream regulated MS4 to which the small regulated MS4 is physically interconnected of the small regulated MS4's connection to that system.

BMP 3.c.(1) – List of Written Notifications

A list of any written notifications of physical interconnection given by the operator to other MS4s;

Policies, Ordinances, and Written Procedures

Town of Ashland Notice of Interconnection

VDOT Notice of Interconnection

Implementation Schedule

Send Notice of Interconnection to the adjacent MS4 operators – Year 1

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Make adjacent MS4 operators aware of physical interconnection

Method to Determine BMP Effectiveness

Send Notice of Interconnection to the adjacent MS4 operators

Items Needed for Annual Report

Written Notifications

MINIMUM CONTROL MEASURE 4 - Construction Site Stormwater Run-off Control

Hanover County shall identify, schedule, implement, evaluate and modify, as necessary, BMPs to meet the following construction site stormwater run-off control measurable goals:

Measurable Goal 4.a – Implement Program to Address Construction Site Run-off

a. Hanover County shall utilize its legal authority to address discharges entering the MS4 from construction activities that result in a land disturbance of greater than or equal to 10,000 square feet or greater than or equal to 2,500 square feet in all areas of the jurisdiction designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act. Additionally, reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

The program procedures, detailed in Hanover County Ordinance Chapter 10, must include the development and implementation of, at a minimum:

(1) An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance with the Erosion and Sediment Control Law and attendant regulations, to the extent allowable under state, tribal, or local law. Such ordinances and other mechanisms shall be updated as necessary;

(2) Requirements for construction site owners and operators to implement appropriate erosion and sediment control best management practices as part of an erosion and sediment control plan that is consistent with the Erosion and Sediment Control Law and attendant regulations and other applicable requirements of state, tribal, or local law. Where determined appropriate by the operator, the operator shall encourage the use of structural and non-structural design techniques to create a design that has the goal of maintaining or replicating predevelopment runoff characteristics and site hydrology;

(3) Requirements for construction site owners and operators to secure authorization to discharge stormwater from construction activities under a VSMP construction permit for construction activities that result in a land disturbance of greater than or equal to one acre. Additionally, stormwater discharges from construction activity disturbing less than one acre must secure authorization to discharge under a VSMP permit if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more;

(4) Procedures for receipt and consideration of information submitted by the public

(5) Procedures for site inspection and compliance and enforcement of control measures.

(6) Procedures for plan review.

b. The operator shall ensure that plan reviewers, inspectors, program administrators and construction site owners and operators obtain the appropriate certifications as required under the Erosion and Sediment Control Law;

c. The operator shall track regulated land-disturbing activities and submit the following information in accordance with Section II B 4:

(1) Total number of regulated land-disturbing activities; and

(2) Total disturbed acreage.

(3) Total number of inspections conducted; and

(4) Summary of enforcement actions taken, including the total number and type of enforcement actions taken during the reporting period.

BMP 4.a.(1) – Implement Erosion and Sediment Control Program Consistent with State Regulations

Hanover County will develop implement and enforce a program of plan review, site inspection and enforcement consistent with Sediment and Erosion Control regulations (9 VAC 25-840) and Hanover County Sediment and Erosion Control Ordinance. Update as needed for consistency with state regulations.

Policies, Ordinances, and Written Procedures

Requirements for erosion and sediment control plans, permits and bonds – Hanover County Code Chapter 10, Article I, Sec. 10-3

Requirement for VSMP permit – Hanover County Code Chapter 10, Article V, Sec. 10-80

Implementation Schedule

Implement Erosion and Sediment Control Program - Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Ordinances requiring erosion and sediment controls. Requirements for construction site operators to implement erosion and sediment control requirements. Requirements for construction site operators to obtain a VSMP permit. Reduction in sediment leaving construction site to MS4 facilities.

Method to Determine BMP Effectiveness

Implement code requirements cited above.

Items Needed for Annual Report

None

Measurable Goal 4.b – Personnel Certification for Erosion and Sediment Control

The operator shall have policies in place requiring that plan reviewers, inspectors, program administrators and construction site operators obtain the appropriate certifications as required under the Erosion and Sediment Control Law;

BMP 4.b.(1) – Plan reviewer, inspector, and administrator certification

Plan reviewers, inspectors and program administrators will maintain certifications in Sediment and Erosion Control.

Policies, Ordinances, and Written Procedures

Requirements for Responsible Land Disturber – Hanover County Code Chapter 10, Article I, Sec. 10-4

Implementation Schedule

Appropriate erosion and sediment control certifications required - Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works, Building Inspections

Objective and Expected Results

Appropriate certification within 12 months of employment

Method to Determine BMP Effectiveness

Maintain tracking list of employees, position and certification

Items Needed for Annual Report

List of certified employees

Measurable Goal 4.c – Land Disturbing Activity Tracking

The operator shall track regulated land-disturbing activities and submit the following information in accordance with *Section II B 4*:

(1) Total number of regulated land-disturbing activities; and

(2) Total disturbed acreage.

(3) Total number of inspections conducted; and

(4) Summary of enforcement actions taken, including the total number and type of enforcement actions taken during the reporting period.

BMP 4.c.(1) – Land disturbance tracked in Annual Report

Regulated land disturbing activities will be tracked and reported in the annual report

Policies, Ordinances, and Written Procedures

Hanover County database is used to track approved land disturbing activities

Implementation Schedule

Track and report regulated land disturbing activities - Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Determine number and acreage of regulated land disturbance in Hanover County

Method to Determine BMP Effectiveness

Hanover County database

Items Needed for Annual Report

Number of regulated land disturbing activities, inspection conducted, and the associated acreage of land disturbance.

Number of enforcement actions and type.

MINIMUM CONTROL MEASURE 5 - Post-construction Stormwater Management in New Development and Development on Prior-Developed Lands

The operator shall develop, implement, and enforce procedures to address stormwater runoff to the regulated small MS4 from new development and redevelopment projects that disturb greater than or equal to one acre or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the regulated small MS4. The procedures must ensure that controls are in place that would prevent or minimize water quality and quantity impacts in accordance with this section.

The operator shall:

(1) Require construction site owners and operators to secure authorization to discharge stormwater from construction activities under a VSMP permit for new development and redevelopment projects that result in a land disturbance of greater than or equal to one acre or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act. Additionally, reduction of stormwater discharges from construction activity disturbing less than one acre secure authorization to discharge under a VSMP permit if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more;

(2) Utilize its legal authority, such as ordinances, permits, orders, specific contract language, and interjurisdictional agreements, to require that activities identified above address stormwater runoff in such a manner that stormwater runoff controls are designed and installed in accordance with 9VAC25-870;

(4) Require adequate long-term operation and maintenance of non-operator owned stormwater management facilities by requiring the owner to develop a recorded inspection schedule and maintenance agreement to the extent allowable under state, tribal or local law or other legal mechanism. The operator shall additionally develop, through the maintenance agreement or other method, a mechanism for enforcement of maintenance responsibilities by the operator if they are neglected by the owner;

(5) Provide adequate long-term operation and maintenance of operator owned stormwater management facilities;

(6) Track all known permanent stormwater management facilities that discharge to the regulated small MS4 and submit the following information in accordance with Section II B 5:

(a) Facility Type;

(b) Facility's Location;

(c) Number of acres treated with pervious/impervious breakdown;

(d) Date facility was brought online;

(e) Geographic location (HUC);

(f) Where applicable, the impaired surface water that the stormwater management facility is discharging into; and

(g) Whether the stormwater management facility is operator-owned or privately-owned;

(h) Whether a maintenance agreement exists if the stormwater management facility is privately owned; and

(i) The date of the most recent inspection.

Measureable Goal 5.a – Stormwater Managed Consistent with Regulations

Provide stormwater management program consistent with all applicable regulations.

BMP 5.a.(1) – Stormwater program consistent with state regulations

Hanover County will develop implement and enforce a program consistent with State regulations.

Policies, Ordinances, and Written Procedures

Design of drainage structures and systems – Hanover County Code Chapter 12, Article I, Sec. 12-8

Hanover County Drainage Design Handbook

Hanover County Regional Stormwater Management Program

Small Municipal Separate Storm Sewer Systems - Program Plan

Implementation Schedule

Implement stormwater program - Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

A stormwater management program consistent with applicable regulations and ordinances

Method to Determine BMP Effectiveness

Plan review, site inspection, and public and private facility maintenance

Items Needed for Annual Report

None

BMP 5.a.(2) – Address post-construction stormwater runoff

Hanover County requires construction site owners and operators in the urbanized area to apply for authorization to discharge stormwater from construction activities under a VSMP permit for new development and redevelopment projects that result in a land disturbance of greater than or equal to one acre or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulation.

Policies, Ordinances, and Written Procedures

Applicability and Additional Requirements – Hanover County Code Chapter 10, Article IV, Sec. 10-72

Implementation Schedule

Implement VSMP construction permit program - Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Regulated construction activities in the MS4 area apply for a VSMP construction permit prior to land disturbing activities

Method to Determine BMP Effectiveness

Regulated land disturbing activities in the MS4 area apply for VSMP construction permit prior to approval of land disturbance permits.

Items Needed for Annual Report

None

Measureable Goal 5.b – Long-term Operation and Maintenance of Stormwater Management Facilities

The County uses maintenance agreements to ensure privately-owned (including individual residential lots) stormwater management facilities are in compliance with the MS4 Program. In concurrence with the maintenance agreement is an inspection schedule (at least once every 5 years) and enforcement strategy.

BMP 5.b.(1) – Privately-Owned Stormwater Management Facilities

For privately-owned (including individual residential lots) stormwater management facilities, Hanover County intends to ensure long term care and maintenance through the use of a maintenance agreement, or with the combination of a drainage easement and a maintenance agreement.

Policies, Ordinances, and Written Procedures

Hanover County Maintenance Agreement for Drainage and Stormwater Management Facilities, *See Appendix D*

Hanover Ordinance 13-12 Article V section 10-86, Long Term Maintenance of Permanent Stormwater Facilities

Implementation Schedule

Maintenance agreements required for stormwater facilities - Years 1-5

Responsible Individual, Department, Division, or Unit

Responsible Party for the Stormwater Facility

Hanover County Public Works

Objective and Expected Results

Maintain stormwater facilities in proper working order consistent with applicable maintenance agreements

Method to Determine BMP Effectiveness

Inspection by qualified professional to ensure facilities are maintained in proper working order

Items Needed for Annual Report

Stormwater Management Facility Database to track and report the number of inspections completed, number of enforcement actions taken (if applicable), and any new facilities brought online.

BMP 5.b.(2) – Operator-Owned Stormwater Management Inspection Procedures

Publicly owned and operated stormwater facilities are inspected by the Hanover County Department of Public Works (DPW). Inspections for publicly operated Regional Stormwater Management basins will be performed semi-annually. Inspections for other publicly owned stormwater basins that serve a specific County owned property will be performed annually.

Policies, Ordinances, and Written Procedures

Hanover County Stormwater Basin Inspection and Maintenance Requirements, *See Appendix D*

Hanover Ordinance 13-12 Article V section 10-86, Long Term Maintenance of Permanent Stormwater Facilities

Implementation Schedule

Inspection of Operator-Owned Facilities - Years 1-5

Responsible Individual, Department, Division, or Unit

Hanover County Public Works

Objective and Expected Results

To maintain stormwater facilities in proper working order

Method to Determine BMP Effectiveness

Inspection by the County to ensure facilities are maintained in proper working order

Items Needed for Annual Report

Stormwater Management Facility Database to track and report the number of inspections completed, number of enforcement actions taken (if applicable), and any new facilities brought online.

BMP 5.b.(3) – Facility Tracking

Hanover County will track all known permanent stormwater management facilities that discharge to the regulated small MS4 and submit the required information.

Policies, Ordinances, and Written Procedures

None

Implementation Schedule

Track stormwater facilities - Years 1-5

Responsible Individual, Department, Division, or Unit

Public Works

Objective and Expected Results

Track all stormwater facilities

Method to Determine BMP Effectiveness

List of all stormwater facilities in Hanover County is maintained

Items Needed for Annual Report

Tracking list for stormwater facilities

MINIMUM CONTROL MEASURE 6 - Pollution Prevention/Good Housekeeping for Municipal Operations

Develop and implement an operation and maintenance program consistent with the MS4 Program Plan that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Using training materials including those available from EPA, state, tribe, or other organizations, the program shall include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and MS4 maintenance. The operator shall identify, implement, evaluate and modify, as necessary, BMPs to meet the following pollution prevention/good housekeeping for municipal operations measurable goals:

Measureable Goal 6.a – Pollution Prevention Strategies

Hanover County will implement daily operational procedures, identify all municipal high-priority facilities, identify all applicable lands where nutrients are applied to a contiguous area of more than one acre, and conduct biennial training for employees.

BMP 6.a.(1) – Daily Good Housekeeping Procedures

The County has developed written procedures for pollution prevention and good housekeeping of municipal facilities. Guidance is designed to minimize or prevent pollutant discharges to the stormsewer system from activities such as parking lot maintenance, equipment maintenance, pesticide, herbicide, and fertilizers application.

Policies, Ordinances, and Written Procedures

Daily Good Housekeeping Procedures, *See Appendix E*

Implementation Schedule

Implement Daily Good Housekeeping Procedures – Year 2-5

Responsible Individual, Department, Division, or Unit

Hanover County Public Works

Objective and Expected Results

Employees have access to and are aware of stormwater pollution prevention documents. Pollution prevention documents discuss the proper disposal and storage of waste materials, spill clean-up, vehicle washing, and pesticide, herbicide, and fertilizers application.

Method to Determine BMP Effectiveness

Maintain Daily Good Housekeeping Procedures

Items Needed for Annual Report

A summary report on the development and implementation of daily operational procedures.

BMP 6.a.(2) – Identification of Locations Requiring SWPPPs

The County has identified one high-priority facility within the MS4 permit area which is the Mechanicsville Solid Waste Convenience Center. The County will develop and implement a stormwater pollution prevention plan (SWPPP) specific to this site.

Policies, Ordinances, and Written Procedures

SWPPP to be developed, *See Appendix E*

Implementation Schedule

Identify Sites – Year 1

Develop SWPPP – Years 2-3

Implement SWPPP – Year 4

Responsible Individual, Department, Division, or Unit

Hanover County Public Works

Objective and Expected Results

Prevent pollutant discharges from high-priority sites

Method to Determine BMP Effectiveness

Inspections for SWPPP compliance

Items Needed for Annual Report

A summary report on the development and implementation of the required SWPPP

BMP 6.a.(3) – Nutrient Management Plan Locations

The County has identified all applicable lands where nutrients are applied to a contiguous area of more than one acre. A NMP was prepared by a Certified Turf and Landscape Nutrient Management Planner and is effective until August 25, 2019.

Policies, Ordinances, and Written Procedures

Identification of lands where nutrients are applied in excess of 1 Acre, *See Appendix E*

Hanover County Nutrient Management Plan

Implementation Schedule

Identify Sites – Year 1

Develop NMP – Years 1-2

Implement 15% NMP – Year 2

Implement 40% NMP – Year 3

Implement 75% NMP – Year 4

Implement 100% NMP – Year 5

Responsible Individual, Department, Division, or Unit

Hanover County Schools

Hanover County Public Works

Objective and Expected Results

Ensure fertilizer application to areas in excess of 1 acre are conducted under the provision of a nutrient management plans prepared by a certified nutrient planner.

Method to Determine BMP Effectiveness

Maintain active Nutrient Management Plan

Items Needed for Annual Report

A summary report on the development and implementation of the turf and landscape nutrient management plans that includes the total acreage of lands where NMPs are required and the acreage of lands upon which NMPs have been implemented.

BMP 6.a.(4) – Training Schedule and Program

The County will perform an educational program for employees including employees of maintenance shops, parks and recreation grounds maintenance with the goal of preventing or reducing pollutant runoff from municipal operations.

Policies, Ordinances, and Written Procedures

Employee Training Plan, *See Appendix E*

Implementation Schedule

Conduct biennial employee education – Year 1-5 with all employees trained during the term of the permit

Responsible Individual, Department, Division, or Unit

Hanover County Public Works

Objective and Expected Results

Increase employee knowledge with respect to stormwater pollution prevention. Hazards associated with poor housekeeping, improper material storage, spills, vehicle maintenance, outdoor activities, and waste management.

Method to Determine BMP Effectiveness

Maintain training records

Items Needed for Annual Report

A summary report on the required training, including, a list of training events, the training date, the number of employees attending training, and the objective of the training.

APPENDICES

Appendix A – Public Education and Outreach

Appendix B – Illicit Discharge Detection and Elimination

Appendix C – Construction Site Stormwater Run-off Control

Appendix D – Post-Construction Stormwater Management

Appendix E – Pollution Prevention/Good Housekeeping

Appendix A – Public Education and Outreach

Public Education and Outreach Plan

(Minimum Control Measure 1)

Identify 3 high priority stormwater issues [9 VAC 25-890-40 Section II B1(c)(1)]

Three priority stormwater issues that the County intends to focus on to comply with the requirements of the MS4 VPDES General Permit are:

1. Chesapeake Bay TMDL
2. Poochpal/pet wastes
3. Commercial site inspections

1. **Chesapeake Bay TMDL**

The County will inform residents of the requirements of the Chesapeake Bay TMDL and the obligation to address the TMDL under the provisions of the MS4 permit.

- Target Audience Size (reaching 20% of Audience annually)
  - Entire County – (100% of households) The Hanover Review newsletter is sent to all households in Hanover County _ times per year. Information will be included in the newsletter directing interested individuals to the County website for more information regarding the Chesapeake Bay TMDL. By placing an announcement in the newsletter, the County will be able to reach the entire target audience in first year. The minimum requirement is reaching 20% of the target audience annually.
  - Annually, features provided in the Hanover Review will continue to direct interested residents to more detailed information on the web site providing the latest updates regarding the Chesapeake Bay TMDL, and the County's progress achieving goals.
- Develop relevant messages

  Year 1 Develop information for website containing the following information. This material is currently presented in a flier currently on the County website.
  - What is the Chesapeake Bay TMDL? The Chesapeake Bay TMDL is a pollution diet. The state was required to develop a plan to reduce excess nitrogen, phosphorous, and sediment loads to waters draining to the Chesapeake Bay.
  - What is our goal? Hanover County must implement measures to reduce excess nutrients and sediment according to the states plan and must be able to demonstrate reductions of the nutrient loads under the terms of the county's MS4 permit.
    - 5% reduction required first 5 year permit cycle (FY2019)

- 35% reduction (total 40%) second five year permit cycle (FY2024)
- 60% (total 100%) third 5 year permit cycle (FY2029)

▪ What is being used to address nutrients? Measures will include the installation of biological filters, detention ponds and other best management practices (BMPs) that are designed to remove nutrients and sediment from runoff. The county will also restore the most severely eroded stream corridors to reduce the sediment load and associated nitrogen and phosphorous loads from these areas.

▪ What can private citizens do? Pick up pet waste, pump out septic tanks if required under the septic pump out program (every 5 years), ensure proper operation and repair of septic systems, wash cars so water does not enter storm drainage systems or surface water, minimize fertilizer use (apply fertilizer based on the results of a soil test), install BMP practices (raingardens, maintain buffers etc. at home), report erosion issues

Year 2 Update the website for the Chesapeake Bay TMDL to provide a copy of the TMDL Action Plan for the public's information.

Years 3-5 Provide information on project implementation to address the TMDL including project updates on design and construction of BMPs and stream restoration projects installed. Show the County's progress toward achieving goal.

o Provide for adjustments of audiences and messages to address shortcomings

▪ The County website can be updated as needed to provide the most up-to-date information of the County's implementation of the Chesapeake Bay TMDL Action Plan.

o Evaluate prior to new permit coverage for

▪ Appropriateness of the issue

▪ Appropriatness of the audience

▪ Effectiveness

2. Pooch Pal/Pet Wastes

The county will inform residents of impacts to waters from pet wastes. A number of studies of Hanover County waters have found bacteria to be a significant pollutant. Pet waste can be a source of bacteria in our waterways. There are over 10,000 registered dogs in the county. They produce between 3 and 4 tons of pet waste every day. If pet waste is not placed in the trash, it can make its way into local waters.

o Target Audience Size (reaching 20% of Audience annually)

▪ Target registered dog owners in Hanover County – Hanover County Code requires that all dog owners in the county obtain a dog license before the dog

is 4 month old. Currently there are over 10,000 registered dog owners in the county.

- Prepare information sheet or flier for dog license renewal.

- Develop relevant messages
  - Pet Waste Messaging - There over 10,000 dog owners in the county. Each dog produces on average ¾ lb of waste per day. That is between 3 and 4 tons of dog waste produced in Hanover every day. That is 1,455 tons per year…if this waste is not picked up and disposed in the trash it can make its way to storm drains and surface water which increases bacterial pollution
  - Some waters in Hanover are impaired as a result of this type of pollution
  - Some neighborhoods in Hanover have placed bag dispensers for residents to use to pick up pet waste to dispose in the trash.
  - BE A POOCH PAL

    Hanover County is looking for Pooch Pals who are willing to maintain a County provided dispenser. Pooch Pal bag dispensers are mounted in high traffic areas. The Pooch Pal volunteer ensures that bags are available in the dispenser and checks the dispenser regularly in order to maintain a count of how many bags are used. Reusing plastic shopping bags for pet waste collection and disposal is recommended. Bag counts are reported to the county. For more information, please contact the Department of Public Works at (804) 365- 6181.
  - Website Poochpal Program and Links to Stop the Drop… http://cvwma.com/cvwma-education/regional-pet-waste-campaign/
  - Stop the drop/poochpal in website referral on our web site
- Provide for adjustments of audiences and messages to address shortcomings
- Evaluate prior to new permit coverage for
  - Appropriateness of the issue
  - Appropriateness of the audience
  - Effectiveness

3. **Commercial Site Inspections**

   Commercial site inspections for 45 commercial shopping center locations

   The County has conducted and will continue to conduct commercial site inspections looking for stormwater issues, trash, FOG management and other potential sources of stormwater pollutants. Differences to consider... collect list of facility owners or property management

companies for each facility, approach each business and provide general flier on stormwater pollution with respect to commercial sites by the end of the permit cycle.

- Target Audience Size (reaching 20% of Audience annually)
  - Specifically identified commercial site list inspecting 100% of commercial businesses
  - Conduct site inspections with inspection sheets
  - Targeting 100% of problem sites
  - Develop more comprehensive flier/info sheet to discuss with problem sites
- Develop relevant messages
  - Help prevent stormwater pollution
    - ◊ FOG (fats, oil and grease) Container Management if these wastes are produced
    - ◊ Close and inspect trash bins
    - ◊ Have spill kit available
    - ◊ Use dry methods for cleanup
    - ◊ Protect materials and equipment stored outside from stormwater
    - ◊ Don't wash/clean equipment outdoors
    - ◊ If you must clean outdoors, collect water used to clean outdoors for disposal in the sanitary sewer
    - ◊ Report illegal dumping into storm drains/ditches
  - Messages to be distributed to managers of businesses where inspections are being conducted. Record where messages have been distributed. Confirm commercial centers every 5 years.

Provide for adjustments of audiences and messages to address shortcomings

Evaluate prior to new permit coverage for

- Appropriateness of the issue
- Appropriateness of the audience
- Effectiveness

Public Education and Outreach Plan

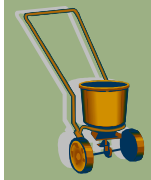
Supporting Materials

You can help

By picking up your pet waste

you are preventing pollution and enhancing the habitat of fish and other organisms that live in the waterways.

Don't put leaves and grass in the drainage ways. Leaves and grass can be taken to the trash facility for recycling.



Minimize fertilizer use and only apply what is needed and recommended

Wash cars where water does not enter storm drainage systems

Hanover County has been proactive in taking steps to protect the Chesapeake Bay. The county has to continue to meet new required standards that may have impact on the Bay's water quality.

For more information on the Chesapeake Bay program visit these websites:

http://www.chesapeakebay.net

http://www.epa.gov

Hanover County Department of Public Works

P.O. Box 470
Hanover, VA 23069

Phone: 804-365-6181
Fax: 804-365-6233
E-mail: publicworks@hanovercounty.gov

Wading thru Stormwater

Hanover County's Guide to Stormwater and the Chesapeake Bay

Stormwater and the Chesapeake Bay

Stormwater comes from roadways, rooftops, lawns, driveways and parking lots carrying pollutants to our local streams and rivers and eventually the Chesapeake Bay.

The Requirement

The Chesapeake Bay program has been working to restore the quality of the Bay's water. Despite significant progress, the Bay continues to fall short of meeting water quality standards.

Hanover along with other counties, towns and cities in the state must have programs which reduce the effects of stormwater on the Bay.

The law requires Hanover to reduce pollutants. The EPA , under the authority of the Clean Water Act, mandates localities like Hanover to have a discharge permit because it owns and operates a public system that collects and discharges runoff through ditches and storm sewers. Hanover is required by law through this permit to achieve designated levels of pollutant reductions.

The Pollution Diet

The EPA established a TMDL (Total Maximum Daily Load) or "pollution diet" for the Bay. As a result Virginia and other states were mandated to reduce pollution. Virginia in-turn is mandating that localities implement the plan.

Excess Nutrients

- Low dissolved oxygen levels are primarily the result of excess nutrient pollution. This fuels the growth of algae blooms.
- The algae eventually die and sink to the bottom.
- As the algae decomposes, it uses up oxygen and leaves little for fish, shellfish and other aquatic life.
- These areas of the Bay are know as "dead zones"

Excess Sediment

- When there is too much sediment in the water it becomes cloudy blocking sunlight from reaching under water plants.
- Excess sediment can bury aquatic habitats and smother bottom dwelling organisms.

Reductions

Hanover County must implement measures to reduce excess nutrients and sediment according to the states plan and must be able to demonstrate reduction of the nutrient load under the county's permit.

- Install biological filters, detention ponds, and other Best Management Practices (BMPs)

Tree in Filter Box

- Restore severely eroded stream corridors to reduce the sediment load and associated nitrogen and phosperous loads from these areas.

Restored Stream Channel

Water pollution is RUFF!

Hanover County Public Works
P.O. Box 470 Hanover VA 23069
804-365-6181
publicworks@hanovercounty.gov

Clean water is a scoop away.

Trash it– Dog waste and kitty litter should be bagged, tied securely and placed in the trash.

Flush it– Dog and cat waste can be safely flushed down the toilet (unless you are on a septic system). Don't flush kitty litter, as it can clog drains.

Bury it– Dig a hole in your yard at least one foot deep and at least 100 feet away from any well, drainage ditch, or stream.

Compost it– Pet waste composting bins are available at many pet supply stores. These bins can be buried in your yard. The pet waste is placed in the bin and will naturally breakdown and be absorbed into the soil eliminating further handling.

Bag it– Bring plastic bags along on your walks to pick up pet waste. Tie the bag closed and deposit it in your trash. Keep an eye out for bag dispensers placed in neighborhoods and parks throughout Hanover County.

Everything in its right place

Many household items require special care to dispose of properly and Hanover County is here to help. We offer 6 different Waste Convenience Centers that make it easy. What exactly are these materials that need special care?

- Used motor oil. If you change your own motor oil, bottle the used oil and dispose up to 5 gallons per day in the specified tank. There is also a container for anti-freeze.
- Oil based paints are accepted at all facilities.
- There is even a special spot for used car batteries.

And while you're visiting our facilities, why not bring your collected recyclable materials to reduce landfills and help the environment. Recycling for glass bottles and jars, aluminum and metal cans, paper, and corrugated cardboard is available at all solid waste facilities.

Facilities: All facilities open seven days a week from 7 A.M. to 7 P.M. all year.

Beaverdam Convenience Center

Route 715/Beaverdam Road (1/2 mile south of Route 658)

Courthouse Convenience Center

Route 820/Courtland Farm Road (1/2 mile south of the Hanover Courthouse Government Center)

Doswell Convenience Center

Route 688/Doswell Road (1.5 miles west of Route 1)

Elmont Convenience Center

Route 783/Lewistown Road (1 mile west of Route 1)

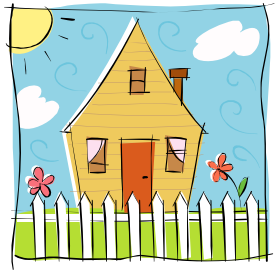
Mechanicsville Convenience Center

Route 710/Verdi Lane (1 mile west of Route 627/Pole Green Road)

Montpelier Convenience Center

Route 715/Clazemont Road (1.2 miles south of the County Government Center)

10 Things You Can Do to Prevent Stormwater Runoff Pollution



1. Use fertilizers sparingly and sweep up driveways, sidewalks, and gutters
2. Never dump anything down storm drains or in streams
3. Vegetate bare spots in your yard
4. Compost your yard waste
5. Use the least toxic pesticides required, follow all instructions, and learn how to prevent pest problems
6. Direct downspouts away from paved surfaces; consider a rain garden or rain barrel to capture runoff
7. Take your car to the car wash instead of washing it in the driveway or wash it in a grassed area to prevent runoff
8. Check your car for leaks and recycle your motor oil
9. Pick up after your pet
10. Have your septic tank pumped every 5 years

Hanover County
Department of Public Works
P.O. Box 470
Hanover, VA 23069
(804) 365-6181
www.co.hanover.va.us
Fax (804) 365 6233

We Need You:

A Homeowners Guide to Healthy Habits for Clean Water.

This brochure was made as a co-operative effort between Hanover County's Department of Public Works and, Tom Battiata and Daniel Faggert of Atlee High School class of 2009.

Hanover County Department of Public Works

Hanover: People, Tradition and Spirit

What's the problem?

Stormwater pollution occurs when chemicals and debris are picked up and washed off the land and into streams, rivers and the Chesapeake Bay. Studies now show that households like yours are large contributors of stormwater pollution.

The Chesapeake Bay has a problem. Stormwater pollution has damaged the Bay for decades and our actions are to blame. Individuals can make a difference. By becoming more informed, you can help save the bay. Read on to pick up easy steps to reducing stormwater pollution.

Spoil your lawn, ruin the Bay

Nutrients from excessive fertilization from farms, parks and thousands of acres of suburban lawns wash into streams and rivers. These excess nutrients cause reactions that promote the growth of harmful algae, block sunlight, and threaten underwater life. Here are a few simple rules to live by:

1. Determine if fertilizer is necessary. This can be achieved with a soil kit that will determine what, if any, fertilizer is required. Visit the Virginia Cooperative Extension Office in Hanover (804-752-4310) for soil testing and fertilization recommendations.
2. Know the correct time to apply. Cool season grasses grow best when fertilized in the fall while the spring is best for warm grasses.
3. Natural compost (leaves, grass clippings) is an excellent soil conditioner and reduces fertilizer need.

4. Only use the recommended amount of fertilizer. Too much nitrogen will burn your lawn and waste your money.
5. Never fertilize before a rain storm because it will wash down the drain wasting your money.

For additional information visit www.dcr.virginia.gov

You don't want to step in this:

Animal waste a large contributor

Animal waste consists of the same excess nitrogen that fertilizer has, and therefore creates a similar problem. In Hanover County alone an estimated dog population of 13,400 dogs contributes 6,000 pounds of waste **PER DAY.** Where does it all go? To the Chesapeake Bay if it isn't bagged or disposed of properly. Here are some ideas of what to do with it:

1. Carry a bag with you and be prepared to pick up solid waste left behind.
2. Dump the waste out of the bag and flush it in the toilet if you are on a sewer system

3. Double bag the waste and dispose of it in the trash.

Be a good neighbor. He can't pick up after himself!

Hanover County Department of Public Works

Retail/Commercial Site Solid/Liquid Waste/ Materials Handling

General Site Inspection Procedures

The Hanover County Public Works Department has begun a program of inspecting solid and liquid waste and materials handling areas located at retail and commercial business establishments. The proper disposal of solid and liquid wastes prevents unsightly litter pollution which can create a nuisance and adversely affect public health and safety, potential discharges of contaminants to the County's storm water drainage system, odor problems and vermin and insect problems. Sections 18-2 and 18-3 of the County Code prohibits littering and the maintenance of offensive or unsanitary accumulations on property and Section 10-74 of the County Code prohibits discharges to the County storm sewer system. Both of these County code sections (attached) provide a regulatory framework and authority for conducting these inspections.

Any location with outside containers for collection of solid and liquid wastes or areas used to trore products materials or equipment can be potentially inspected for environmental concerns. Of particular interest are locations within the MS4 service area or Suburban Service Area (see map attached with suburban service areas) for Hanover County and within this area, locations generating large quantities of solid and liquid waste or storing products, materials, or equipment outdoors such as grocery stores, restaurants, department and other retail operations, doctor's offices, industrial and manufacturing facilities, automobile service facilities and similar type establishments. Initial priority will be placed upon inspection of shopping centers, restaurants and primarily retail facilities within the Suburban Service Area. An inventory of sites within this area will be developed over time and as inspections of facilities are completed. Inspections of these sites should follow these general procedures:

- Inspections should be random except for scheduled follow-up visits where pre-arranged dates/times have been determined with the site owners/managers. Suggested frequency for inspections would be quarterly dependent on site and problem history frequency.
- Inspections should generally address the items noted for inspection under the solid and liquid waste inspections outlined below.
- The attached inspection report form should be used to document the inspection and results.
- Photographs should be taken of suspected problem areas needing correction.
- For solid waste concerns needing correction where there is no probability of discharge to the storm drain system, the manager of the facility should be contacted in person and the items needing correction discussed and cooperation and commitment to correction agreed upon. If corrective action is not willingly agreed upon or a manager not available to speak with in person, a follow-up letter should be sent to the site manager/owner outlining the concerns and need for corrective action. A sample form letter is attached.

- For solid and liquid waste concerns with evidence of discharge or possible discharge to the storm drainage system these sites should be referred to the MS4 program manager (Mike Dieter) for appropriate follow-up action.
- The inspection history database should be updated to document the inspection and results.

Solid Waste Container Inspection Procedures

There are several types of solid waste containers that may be present to collect primarily solid and some associated liquid wastes at commercial sites. The two main types include a stand alone collection container (dumpster) without compaction capability and those that incorporate a compaction unit along with a collection unit. The compaction type units are of two main types: those which have a stationary stand alone compactor unit usually attached to a roll off collection container by ratchet hooks and a self contained compactor/container unit where the entire unit (compactor and container) is in one unit and is usually a roll off type unit to be removed and emptied off site. The compacting units are often but not always loaded from within the commercial establishment into the compactor component negating the possibility for spillage of materials during loading outside the commercial facility. The stand alone containers without compaction are filled by loading from the top or possibly front outside the commercial establishment. Both types of units may be designed to be emptied on site by front end loaders with hooks or be a roll off to be taken off site to be emptied and returned to site.

Items to Inspect for Stand Alone Waste Containers (Dumpsters) without Compaction Units

- The container should be closed and have a closable sealable lid to prevent water infiltration, accidental spillage and material blowing out of the container.
- Check for the presence of loose trash and other dry wastes stored outside the container which needs to be cleaned up to prevent litter and potential pollution problems. Also look for the presence of liquid wastes and chemical products which may be stored outside the container in small containers. Such storage of liquid wastes may increase the risk of spillage and mishandling/vandalism of these materials.
- Check for leakage/spillage around the container and visible signs of liquid discharge. Note the presence of absorbent material that may have been spread to clean up spills. This absorbent material should be cleaned up as well.
- Some storage container sites may have a dry drain sump for the collection of spilled materials from the container area designed to keep liquid discharges within the container area. Check to ensure these drain sumps are properly maintained and cleaned out to prevent unwanted discharge.
- Check for the location of nearest stormwater drainage structure or drainage way that could receive liquid discharge from the container. If possible the containers should be

placed away from drainage structures or be within an area where any discharges can be contained and cleaned up before it reaches the drainage structure or drainage way.

- Many containers will have a removable drain plug near the bottom of the container which could be removed to facilitate drainage of liquids within the container. Check for the existence of plugs particularly if a liquid discharge is present and ensure that the plugs are in place as they are often removed and/or damaged allowing drainage from the container.
- Check the integrity of the container for corrosion and other damage that indicates that it may need replacement to prevent future liquid discharge and lack of containment of dry wastes.
- Note the presence of insect or vermin problems related to the container or discharge.

Items to Inspect for Solid Waste Containers with Compaction Units

- All inspection items noted above for stand alone units without compaction units should also be inspected for units for compaction units where applicable. In addition compacting units have additional items which should be inspected for potential problems including:

- For stationary compactors with an attached collection unit, check the connection area between the two units to ensure an adequate fit to prevent the discharge of dry and liquid wastes between the compactor and the collection unit as the material is moved from the compactor to the collection unit.
- Compacting units will have a hydraulic pump system for compaction which for stand alone compactors primarily is normally located outside the compaction unit. This unit and hoses should be checked for hydraulic fluid leaks and potential discharge. Ideally the entire hydraulic unit should be covered to keep precipitation from the unit and prevent damage to the hydraulic unit and possible discharge. For self contained compactor/collection units the hydraulic system may be internally located within the container and is less likely to be a cause of environmental problems.
- Collection units receiving compacted material will be emptied by opening of one end of the unit via a door with a sealable gasket. This gasket seal can fail and cause liquid to seep through the door sides during the collection period and this area should be checked to see if any leakage is occurring in this area.

Liquid Waste - Fats, Oil and Grease (FOG) - Containers Inspection Procedures

These are separate containers used specifically for recyclable fats, oils and greases which will primarily be located at restaurant and grocery store locations having food cooking wastes. They

may be a simple drum such as a 55 gallon drum or a special mini-dumpster type container such as utilized by Valley Proteins. Items to inspect and check for include:

- The container should be closed and have a closable sealable lid to prevent water infiltration and accidental spillage.
- Check for leakage/spillage around the container and visible signs of discharge. Note the presence of absorbent material that may have been spread to clean up spills. This absorbent material should be cleaned up as well.
- Check for location of nearest stormwater drainage structure or drainage way that could receive discharge from the container. If possible the containers should be placed away from drainage structures or be within an area where any discharges can be contained and cleaned up before it reaches the drainage structure or drainage way.
- The container should be marked to identify it is to be used for inedible food products.
- Check the integrity of the container for corrosion and other damage that indicates that it may need replacement to prevent future discharge.
- Note the presence of insect or vermin problems related to the container or discharge.

Materials Storage Areas

Materials offered for sale or used in the business could potentially be stored outside. These items are typically bagged items or equipment. Items stored outside should be in good condition and not show signs or leaks or spills. Equipment (rental equipment for example) should be stored in a clean condition.

- Materials and equipment should be stored inside where possible. When it is not possible to store items inside, they should be stored in a covered area with sufficient overhanging cover to prevent rainfall from normally coming in contact with the stored material or be stored under weather resistant covers or tarps, on a solid surface, such as asphalt or concrete, or a raised surface, such as a pallet. Cover tarps should be weather resistant and secured.
- Outside storage areas should be located in areas not normally subject to concentrated run-off such as ditches, swales, or other stormwater conveyance structures, not normally subject to flooding, and should not be located in areas where run-off from a roof, roof downspout, or other overhead structure can come in contact with the stored material.

1 Stand Alone Business
2 Atlee Square
3 Stand Alone Business
4 Battlefield Commons
5 Bay Court Shopping Center
6 The Shoppes at Bell Creek
7 Brandy Hill Plaza
8 Stand Alone
9 Stand Alone
10 Stand Alone
11 Bowles Farm Plaza
12 Creighton Crossing
13 Unnamed Shopping Center
14 North Cross Center
15 Hanover Commons
16 Hanover Village
17 Hanover Square
18 Stand Alone
19 Stand Alone
20 Stand Alone
21 Stand Alone
22 Kings Charter Village Center
23 Unnamed Shopping Center
24 Stand Alone
25 Stand Alone
26 Stand Alone
27 Stand Alone
28 Stand Alone
29 Montpelier Shoppes -
30 Village Green -
31 Rutland Commons -
32 Stand Alone
33 Stand Alone
34 Stand Alone
35 Stand Alone
36 Fastmart Shopping Center
37 Stand Alone
38 Stand Alone
39 Stand Alone
40 Stand Alone
41 Stand Alone
42 Stand Alone
43 Stand Alone
44 Spring Center
45 Stonewall Square

Arby's - 360

Atlee Square - Route 301, ***Brunetti's Restaurant, Dollar General, Atlee Library,***

Bass Pro - Lakeridge Parkway

Battlefield Commons - 360/Battlefield Green

Bay Court - 360/Old Hickory

Bell Creek - Pole Green/Bell Creek

Brandy Hill - 360/Lee Davis- ***Food Lion, China Wok, Subway, Tokyo Hibachi Grill,***

Burger King - 360

Fastmart - 360 -next to Battlefield Commons (site # 4)

Burger King - Rte 301

Bowles Farm Plaza - 360 -***Cici's Pizza, Ginger Red Asian Bistro***

Creighton Crossing - 360/Creighton - Primo Pizza, Quiznos Subs, China House, Kroger, Subway

Five Guys - 360 - at Bowles Farm Plaza (site #11)

Green Top - Lakeridge Parkway

Hanover Commons - Route 301 - ***Food Lion***

Hanover Village - 360 - ***Tuesday Morning, Anna's Italian Res, Strip Retail, TSC,***

Hanover Square - West side Bell Creek Rd - ***Best Buy/Target/Home Depot/Cracker Barrel/Strip Retail***

7 Eleven - 360 - next to Stonewall Square SS (site #45)

International House of Pancakes - 360

Walmart - 360

TGI Fridays - 360/Creighton - next to Stonewall Square SS (site #45)

Subway, Mi Jalisco, Lulu's Creamery, China Star,

Little Ceasars - 360 - at Bowles Farm Plaza (site #11)

Lowe's - 360

McDonalds - 360

Arby's - Route 1 @ Sliding Hill

McDonald s - Rte 301

McDonalds - Sliding Hill - next to Kings Charter (site #22)

Entire Center

Village Green - Montpelier

Krogers

Montpelier Fast Mart

Montpelier Food Center

Mexico - 360

Outback - 360/Walmart

Pasta House/Fas Mart - Atlee Rd.

Pizza Hut - 360

Popeyes - Rte 301/Atlee road @ Atlee Square (site #2)

Ruby Tuesday - 360/Walmart

Sheets - Sliding Hill

Shoney's - 360

Sonic - Route 1 & Sliding Hill

Sonic - 360

Spring Center - 360 - ***Tropical Cafe***

Stonewall Square - 360 across from Creighton Crossing SS

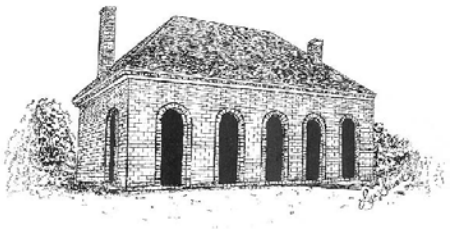
Shopping Center Inspection Checklist

Site _____ Date _____

Inspector _____ Re-Inspection Date _____

General Site	Yes	Notes Action Required ☐ Action Completed Date: Initials :
The site is generally neat and orderly	☐	
Restaurants have FOG containers	☐	
No evidence of outdoor cleaning activities	☐	
Waste Storage Areas/Dumpsters	Yes	Notes Action Required ☐ Action Completed Date: Initials :
Dumpsters are covered and closed	☐	
Dumpsters are in good repair and no leakage is present	☐	
Trash is contained and no spillage is present	☐	
FOG **(fats, oil and grease containers)**	Yes	Notes Action Required ☐ Action Completed Date: Initials :
No leaks or spills/or absorbent placed where leaks and spills are present	☐	
Product Storage Areas	Yes	Notes Action Required ☐ Action Completed Date: Initials :
Products with pollutant potential are stored on pads or pallets off of the ground	☐	
Products with pollutant potential are covered or are under cover so they are protected from rainfall	☐	
No leakage or spillage is apparent form stored materials	☐	
Stormwater Inlets	Yes	Notes Action Required ☐ Action Completed Date: Initials :
No evidence of liquid or solid waste discharge to inlets	☐	
No evidence of dumping into inlets (foul or cleaning solution odor, grease or other material on grates, or in inlets)	☐	

REV-03-19-2011



HANOVER COURTHOUSE

HANOVER COUNTY

ESTABLISHED IN 1720

DEPARTMENT OF PUBLIC WORKS

J. MICHAEL FLAGG, P.E., DIRECTOR

STEVEN P. HERZOG, P.E., DEPUTY DIRECTOR

P. O. BOX 470
7516 COUNTY COMPLEX ROAD
HANOVER VIRGINIA 23069
PHONE: 804-365-6181
FAX: 804-365-6233

WWW.CO.HANOVER.VA.US

JOHN H. HODGES
DEPUTY COUNTY ADMINISTRATOR

Dear Hanover County Business:

Re: Proper Management of Waste Materials

In accordance with state and federally mandated stormwater requirements, Hanover County recently completed inspections of businesses in your area. In some cases we found that waste materials should be managed better. We are requesting your help to ensure that wastes from your business are properly managed.

To protect the environment, Hanover County requires the storage of waste materials in tightly covered leak proof containers. Waste containers must be kept covered and secured until they are removed from the premises for disposal to prevent the dispersal of litter. Allowing wastes to enter a public storm sewer, creeks, or streams is a violation of county code, state regulations, and/or the Clean Water Act.

If you are currently managing your waste properly, there is no need for any additional action. If you are not managing your waste properly, we request that you take appropriate actions to implement proper waste disposal practices at your business. Please do your part to protect Hanover County's environment. Hanover County's Department of Public Works can be contacted at 365-6181 if you have any questions concerning this matter.

Sincerely,
Hanover County Department of Public Works

<u>Do</u> secure wastes in covered containers

<u>Do</u> call for waste collection in a timely manner

<u>Don't</u> allow waste to enter storm drains

<u>Don't</u> overfill containers so they overflow

Appendix B – Illicit Discharge Detection and Elimination

Field Screening Outfalls for Illicit Discharge

(Minimum Control Measure 3)

Prioritized schedule of field screening activities

Field screening activities in Years 1 and 2 have historically been in areas of the county that have:

- Older infrastructure
- Significant numbers of septic systems
- Potential connections to impaired waters

These areas include outfalls in the following JL19 and JL20 6th order HUC designations. Older neighborhoods within these areas will be the focus of inspections earlier in the permit cycle.

Number of Screening Activities

Currently there are 927 regulated stormwater outfalls in the County. 689 of these outfalls are owned by Hanover County. Under the provisions of the MS4 regulation, a minimum of 50 outfall inspections are required each year. The County intends to inspect a minimum of 50 outfalls per year over the course of the five year permit cycle. If an average of 20% of the stormwater outfalls are inspected annually (avg. 185 outfall inspections/year), all outfalls can be inspected during the five year permit cycle. Inspections will be conducted based on available staff. In addition to screening for illicit discharges and dry weather flow, outfall inspections are used to screen outfalls for repair and maintenance.

Methods to collect General Information

Weather Data - Prior to screening outfalls, the screener will ensure that 3 days (72 hours) have elapsed since the last measurable storm event (≥ 0.25 in. over 24 hours). This information can be obtained from the AccuWeather.com site for Ashland, Virginia. A tabular listing of weather data can be seen by clicking on the "View" tab on the monthly weather calendar. Print the rainfall data and include it with the outfall screening data when it is turned in at the end of the day. Screening may be allowed in some cases if less than 3 days have elapsed at the discretion of the Director of the Hanover County Department of Public Works.

Outfall Data - Data regarding each outfall will be obtained when construction is completed and prior to inspection of the outfall. Items to be tracked will include the following:

General Data	Information Source
Facility ID	Facility ID based on numbering by HUC code
Drainage Area ID	Drainage Area ID based on numbering by HUC code
Inspection year	Year of the permit cycle when the facility will be inspected (1-5)
HUC Code	Virginia 6th order HUC code where the outfall is located
Tributary	Tributary that the outfall is located in from appropriate local maps
Subdivision Name	From Subdivision plan if applicable or "None"
Street Location	Address of outfall
Relative Location	Location of outfall relative to the address above i.e. (behind, right, left, across street etc.) this will assist field personnel in locating the outfall.
Location Type	Residential, commercial, school, as applicable based on the drainage area to the outfall
Latitude	From GIS mapping system or field GPS information
Longitude	From GIS mapping system or field GPS information
Drainage Area	From design plans
Outfall Owner	Based on location on design plans, in right of way (VDOT), in County easement (County), outside of ROW or easement (Private)
Drainage Type	Pipe/Ditch
Ditch Material	Grass, Concrete, Asphalt from existing condition or design plan
Ditch Size	From existing condition or design plan
Pipe Material	Concrete, CMP, HDPE from existing condition or design plan
Pipe Size	From existing condition or design plan

Outfall Inspection Data – Outfall inspection data will be obtained at the first outfall inspection and will consist of the observations below. In addition, if flow is present, obtain readings for the temperature, pH, specific conductivity, and the total dissolved salt from a sample obtained at the outfall.

Inspection Data	Information Source
Stains	Discoloration of concrete or surrounding riprap at the outfall due to minerals, such as iron, or others substances that permanently discolored surrounding material
Growths	Bacteria or fungi that is growing around the outfall area
Petroleum	Presence of oil in the water or an oily residue on concrete, riprap or vegetation around the outfall
Debris	Brush, leaves, fallen trees that have covered, obscured, or blocked the outfall itself or the water channel
Deposits	Any substance or item that has collected at the outfall site that is not classified as sediment, floatables, or debris
Floatables	Floatable trash that has collected at the outfall
Sediment	Sediment that has been deposited in front of or around the outfall opening
Turbid	Opaque, murky water
Sheens	Slightly reflective sheen present on top of water – not due to petroleum
Odors	Abnormal odors of the water itself, not the surrounding area
Vegetation	Dense vegetation that partially or fully obscures or blocks the outfall
Damage	Damage of the outfall due to large amounts of water, and/or design failure
Color	Related to the characteristic of stains – represents abnormal coloring of the water or of the area surrounding the outfall

Flow Estimate – If there is flow at the outfall during the inspection, estimate the flow. A garden hose size flow is between 2 and 3 gallons/minute. Flow in a pipe or channel can be obtained by obtaining the depth of flow and calculating the flow in the ditch or pipe using Manning's formula for open channel flow.

Illicit Discharge Identification - Outfalls with flow that exhibits stains, growths, petroleum, deposits, turbidity, sheens, odor, color or with a pH less than 5 or greater than 6.5, or with a specific conductivity > 200 or with and TDS > 100 may be a potential illicit discharge.

Illicit Discharge Follow-up

Any illicit discharge that is suspected of being sanitary sewer will immediately be coordinated with the Public Utilities Department for expeditious resolution. Otherwise, illicit discharge will be tracked back thru the storm sewer system by observing flow thru the system upstream of the outfall to determine if the source of the discharge can be located. Additional samples can be taken following the first observed discharge to determine if the discharge is continuous or intermittent. If within six months of the beginning of the investigation neither the source nor the same non-stormwater discharge has been identified, the incident will be documented as follows at a minimum:

- the date(s) that the illicit discharge was observed and reported;
- the results of the investigation;
- any follow-up of the investigation;
- resolution of the investigation; and
- the date that the investigation was closed.

If the observed discharge is intermittent, a minimum of three separate investigations will be made in an attempt to observe the discharge when it was flowing. If these attempts are unsuccessful the above information will be documented.

If a source of the discharge is located, measures will be taken to stop the discharge consistent with applicable ordinances and legal authorities.

Legal Authorities for Illicit Discharge

Section 10-74 Discharges to storm sewer system - Identifies authorized discharges to the storm sewer system and prohibits illicit discharge to the storm sewer system.

Section 10-75 Inspection and monitoring - Allows for inspection for unauthorized discharges and allows for the director to specify pollution prevention plans where illicit discharge exists.

Section 10-76 Enforcement of article; penalty - Provides for penalties and enforcement of illicit discharge measures.

Typically storm sewer is within a County easement which allows for access and inspection. Make sure to obtain appropriate authorization to access property if access is obtained from an area other than in an easement.

If the source of an illicit discharge is identified, follow-up actions can be taken according to procedures found in Illicit Discharge Tracking and Response, July 1, 2014.

Field Screening Outfalls for Illicit Discharge

Supporting Materials

Outfall General Information

Outfall ID Number:	G06-01-04
Subdivision Name:	Shady Grove Forest
Street Location:	7431 Mountain Lily Lane
Relative Location:	behind/right
Location Type:	Residential
Tributary:	Beaverdam Creek
DrainageType:	V-Shaped Ditch
Ditch Height (in):	12
Ditch Width (in):	36
Ditch Material:	Concrete
Ditch Bottom Width (in):	
Parabolic:	☐
Pipe Diameter (in inches):	
Pipe Material:	

Date:	
Inspector Initials:	
HUC Code:	G-06

Close Form | Enter Data

Inspection Observations

Stains:		Turbid:	
Deposits:		Damage:	
Sheens:		Color:	
Growths:		Other:	
Floatables:		Flow:	☐
Odors:		SC (Specific Conductivity):	
Petroleum:		pH:	
Sediments:		Temp (C):	
Vegetation:		TDS (ppm):	
Debris:		FollowUp Required ?	
Maintenance Required ?:		Picture...Note Time	

Remarks/Observations:	

Illicit Discharge Tracking and Response

(Minimum Control Measure 3)

Background

Dumping materials into storm drains and surface water bodies is not allowed under Virginia Law. In Hanover County, unauthorized dumping or the accidental spilling of materials must be reported to the Hanover County Department of Public Works (DPW) and the contamination must be cleaned up. This document provides Hanover County's procedures for responding to observations and reports of illicit discharges.

Definitions

According to 9 VAC 25-870 VSMP Program Regulations
"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to a separate VPDES or state permit (other than the state permit for discharges from the municipal separate storm sewer), discharges resulting from firefighting activities, and discharges identified by and in compliance with 9VAC25-870-400 D 2 c (3).

For the purposes of this document the discharge of materials including dumping, spilling or the cleaning of equipment (e.g. concrete trucks, hydro-seeders, asphalt equipment) or the dumping of left over products such as paint, solvents, cleaners and other materials will be reported in the following manner.

Reporting an Illicit Discharge Incident

To report an illicit discharge that constitutes an emergency situation or that occurs after regular business hours, or on weekends or holidays, contact emergency response officials by dialing 911. During regular business hours, non-emergency reports of illicit discharge can be made to the DPW. Upon receiving a report of an illicit discharge or spill:

1) Obtain the following information:
    - Location/street address of the incident
    - When the incident occurred including time and date
    - Material involved/description of incident
    - Water body or storm drain involved
    - Company involved description of individuals or vehicles involved
    - Person reporting the incident - Name and contact information

2) Contact the Hanover Fire Marshall and DEQ
    - For Emergency situations - (911) – Dangerous chemical or petroleum spills
    - Non-emergency situations - Hanover County Fire Marshall at 365-4850 - Spills or other discharge
    - General questions for the Hanover County Fire Marshall's Office Fire Marshall on duty
    - Also report spills or unauthorized discharges to the Virginia Department of Environmental Quality (DEQ) at 804-527-5042 (pollution response for DEQ Piedmont Regional Office)

3) Site Visit
   For non emergency situations, make arrangements to visit the site with the fire marshal and the pollution response representative for the DEQ Piedmont Regional Office

4) Illicit discharge incident tracking
   Log the incident and the associated pictures on a standard drainage complaint form and submit the form to Mike Dieter for follow-up and tracking.

   Include any recommended actions and summarize the actions undertaken by emergency responders such as the Fire Marshall's office on the drainage complaint form.

Follow-up Actions

1) Legal Action
   Criminal violations of Hanover County Ordinances or State law for discharge to surface waters are the purview of the Hanover County Fire Marshall's office.

   Violations of Hanover County Ordinances prohibiting illicit discharge are the responsibility of the DPW and the Office of the Hanover County Attorney.

2) Hanover County agencies such as the Sheriff's Department, and Fire or Emergency Response agencies that receive reports of illicit discharge or that respond to emergency situations that involve spills or other illicit discharge must report these incidents to the DPW. Hanover County's Municipal Separate Storm Sewer System (MS4) permit requires Hanover County to track and report illicit discharge incidents in an annual report to the Virginia Department of Environmental Quality (DEQ).

   Aside from tracking and reporting illicit discharge incidents, Hanover County is required to document the County's response to each incident including the actions taken by the County including cleanup and legal action associated with the illicit discharge. The DPW and Hanover County Emergency response agencies will share information regarding illicit discharge incidents in order to meet the requirements of the County's permit with DEQ.

   Other County agencies can report illicit discharge to DPW at 365-6181.

Appendix C – Construction Site Stormwater Run-off Control

Stormwater Management Progressive Compliance and Enforcement

(Minimum Control Measure 4)

The Department of Public Works (DPW) is authorized to issue land disturbance permits provided the applicant has submitted and obtained approval of an erosion and sediment control plan, provided the required security, and paid the permit fee, along with a completed permit application. For the construction of a single family residence, DPW may accept an agreement in lieu of a plan and land disturbance permit. DPW reserves the right to require a plan and permit for land disturbing activities associated with residential construction. A plan is required for disturbances of 1 acre and greater regardless of construction type. All plans are in accordance with the minimum standards identified in 9VAC25-840-40.

The permittee must notify DPW at least 48 hours prior to commencing the land disturbing activity. DPW may require a pre-construction conference depending on the proposed activity and its potential for E&S-related problems. Projects will be inspected during the initial phase of land disturbing activity and, thereafter, inspected in accordance with the County's inspection program guidelines; Hanover County Ordinance Chapter 10 - Article I.

When a building permit is issued for the construction of a single family residence, the Building Inspection Department is responsible for inspection and enforcement.

All Hanover County inspectors have obtained and maintain, at a minimum, an E&S Inspector Certification.

Activities with Land Disturbance Permits

Inspections

DPW is responsible for E&S inspections of land disturbing activities to ensure compliance with the approved plan and E&S regulations. DPW inspects sites, on average, once every 2 weeks. High priority sites or sites in critical phases (e.g., stream crossings, etc.) may receive more inspections, especially before and after (within 48 hours) rain events. Low priority sites are inspected less frequently as a matter of priority if necessary. Inspections are also conducted upon project completion, prior to releasing any associated performance bond.

The inspector shall notify the contact person, designated on the permit, of non-compliance by inspection report (i.e., Notice of Inspection). Inspection reports may be delivered on-site, faxed, e-mailed, or mailed. The report shall note the non-compliance, and the corrective actions or measures to be taken. Typical deadlines for corrective actions are 7 days for repairs/maintenance or installation of measures shown on the approved plans. Deadlines may be extended for implementing actions or measures not shown on the plan or where significant coordination is required (e.g., design and installation of a ST, SB, etc.). Amendments may be made to an approved plan with Director approval (Ref. Co. Ord. Sec. 10-10).

The inspector shall re-inspect the site following the deadline. Usually at two weeks unless scheduled earlier at the discretion of the inspector for enforcement purposes.

Upon finding continued noncompliance, the inspector shall notify the landowner via inspection report of the continued violation and initiate a Notice to Comply. Depending on the severity of the violation, the inspector may issue another completion deadline or refer the matter to the Environmental Compliance Manager for more aggressive action.

Violations involving imminent danger to waters or adjacent properties will receive expedited actions. Such violations shall be reported to the Environmental Compliance Manager for consideration of issuing of a Notice to Comply or Stop Work Order. (Ref. Co. Ord. Sec. 10-14(a); Va Code 10.1-566(c)).

Enforcement

Upon failure to comply with the inspection, the inspector shall refer the matter to the Environmental Compliance Manager for verification of the violation and noncompliance with the inspection report. The Environmental Compliance Manager shall determine the appropriate action(s) to bring the site into compliance. These actions shall include, but not limited to, personal communication, extension of deadlines, etc., or pursuance of enforcement actions as follows:

1. Request the issuance of a Notice to Comply (NTC) with specific corrective actions or measures and deadline(s).
2. Request the issuance of a Stop Work Order (SWO) if there is imminent danger to waters or adjacent properties.

The procedures for issuing a NTC and SWO are provided in the Hanover County Code, Section 10-13 and 10-14. The NTC or SWO shall contain notice that failure to comply may result in legal action, including civil penalties. A copy of the NTC or SWO will be sent to the landowner (if different from the contact person).

Utilization of the Security

Failure to comply with the requirements of the NTC or SWO may result in action by the County to install ground stabilization devices or material to remedy or reduce the impact of the violation(s). The costs of such actions by the County shall be at the owner's expense. A charge equal to the construction costs of the remedial action will be made against the bond or other security provided with the permit. *[Policy issue: Re: surety bonds: owner must provide enough cash or ILC to cover "ground stabilization devices" in worst case scenario. "Ground stabilization devices/measures" includes TS, PS, EC-2/3, maybe SF, CD and other measures that do not require grading, excavation, etc.]* In cases involving the issuance of a SWO, the SWO will continue to be in effect until (1) the corrective actions, as noted in the SWO, are completed; and (2) any additional security for the remainder of the proposed project has been provided (Ref. Co. Ord. Sec. 10-13(b) and 10-14; Va Code 10.1-565).

Civil Penalties and Civil Charges

Civil Charges

Failure to comply with the requirements of the Hanover County Erosion and Sediment Control Ordinance, Hanover County Code Sections 10-1 through 10-17 may result in the issuance of a Civil Charge. These charges will be assessed at the rate of $100/day for each violation. Each violation specified in the Notice of Violation will constitute a separate offense. (For example, failure to install/maintain SF at 3 locations for 5 days will result in penalties totaling $1500.) If the landowner or his designee consent and pay

these charges in lieu of civil penalties pursuant to Hanover County Code Section 10-15(h), they may avoid a summons and trial for collection of civil penalties.

The Director of Public Works shall determine whether or not the assessment of a civil charge is appropriate for each case.

Civil Charges may be issued in the following situations.

- If E&S measures are not installed at the start of a project according to the approved plan
- If E&S measures are not properly installed at the start of a project
- If E&S measures and not properly maintained and require a NTC or SWO to initiate the required maintenance
- If a landowner, his designee, or a company operating under the landowners consent, has multiple sites that exhibit lack of E&S control maintenance
- If a landowner, his designee, or a company operating under the landowners consent, exhibit a pattern of repeated (after the second NTC or SWO) necessity to issue a NTC or SWO to initiate the required maintenance of E&S controls

The above Civil Charges may be issued at the following points in the life of a project.

At a Notice of Inspection

- If E&S measures are not installed at the start of a project according to the approved plan
- If E&S measures are not properly installed at the start of a project
- If a landowner, his designee, or a company operating under the landowners consent, exhibit a pattern of repeated (after the second NTC or SWO) necessity to issue a NTC or SWO to initiate the required maintenance of E&S controls
- If a landowner, his designee, or a company operating under the landowners consent, has multiple sites that exhibit lack of E&S control maintenance

At a NTC or SWO

- If E&S measures and not properly maintained and require a NTC or SWO to initiate the required maintenance.
- If a landowner, his designee, or a company operating under the landowners consent, has multiple sites that exhibit lack of E&S control maintenance
- If a landowner, his designee, or a company operating under the landowners consent, exhibit a pattern of repeated (after the second NTC or SWO) necessity to issue a NTC or SWO to initiate the required maintenance of E&S controls

<u>Civil Penalties</u>

Failure to comply with the requirements of the NTC or SWO may result in civil penalties by the County. These penalties will be assessed at the rate of $100/day for each violation. Each violation specified in the NTC or SWO will constitute a separate offense.

(For example, failure to install/maintain SF at 3 locations for 5 days will result in penalties totaling $1500.) The number of days will be determined by the number of calendar days, beginning with the completion deadline date of the NTC or SWO. The landowner, or his designee, must contact DPW and request an inspection of the completed corrective measures. The ending date for assessing the penalty will be the day of the requested inspection by the landowner/designee, provided the subsequent inspection verifies the satisfactory completion of each of the required corrective measures. The SWO shall be lifted upon payment of the penalties. The maximum penalty is $2000 for each violation. (Ref. Co. Ord. Sec. 10-15; Va Code 10.1-562(J)).

The Director of Public Works shall determine whether or not the assessment of a civil penalty is appropriate for each case.

Injunctive Relief
The Environmental Compliance Manager will work with the County Attorney to seek injunctive relief from the circuit court.

Activities without plans or permit

Upon verification that a potential land disturbing activity exists, a SWO will be issued to the landowner. In situations in which the activity cannot be verified without entering the property and the landowner will not grant permission to enter the property, the Environmental Compliance Manager will work with the County Attorney to obtain access to the property, or, given sufficient evidence that a land disturbing activity is occurring, the Environmental Compliance Manager will issue the SWO and proceed as follows:

The SWO shall require that the owner:

- Cease all land disturbing activity immediately.
- Install appropriate (specified) E&S measures.
- Seed and mulch or otherwise satisfactorily stabilize all disturbed areas within 7 days.
- Complete an application for a land disturbing permit (or grant **right of entry** for purpose of inspecting site).
- Submit an approvable E&S plan.
- (At the discretion of the director,) either:
  (1) obtain a land disturbance permit, including an approved E&S plan, payment of all fees and security; or
  (2) satisfactorily stabilize (permanent) and restore all disturbed areas to its natural (pre-activity) condition.

The SWO shall include completion deadlines for each requirement. Typical deadlines would be 7 days for the installation of E&S controls and applying TS/PS, and 30 days for obtaining a land disturbing permit. The director may extend the deadlines if it is determined that the responsible party is making a good faith effort to meet the deadline(s).

Civil Penalty
Failure to comply with the SWO within the deadlines may result in the issuance of civil summons/penalty. The penalty for commencing a land disturbing activity without an approved plan or permit shall be $1000 for every day the violation is present, up to

$10,000 maximum. The site shall be re-inspected at a frequency consistent with the County's E&S inspection program. *(See Hanover County E&S Inspection Program, Inspection Types for description of site conditions, potential for off-site impacts, etc. and the inspection frequency).* The ending date for assessing the penalty will be the date of either, whichever is earlier, as follows: (1) the date of the requested inspection, by the landowner/designee, for inspection of the ground stabilization measures, provided the subsequent inspection verifies the satisfactory completion of the measures; or (2) obtaining a land disturbance permit. (Ref. Co. Ord. Sec. 10-14(a); Va Code 10.1-566(c)).

The Director of Public Works shall determine whether or not the issuance of a civil summons is appropriate for each case.

Injunctive Relief

For cases in which the owner is not obeying the SWO (e.g., continuing with the land disturbing activity, etc.) and/or there is imminent danger of harmful erosion and/or sediment damage, the Environmental Compliance Manager will work with the County Attorney to seek injunctive relief from the circuit court. This action may be pursued regardless of other enforcement actions.

Pollution Prevention

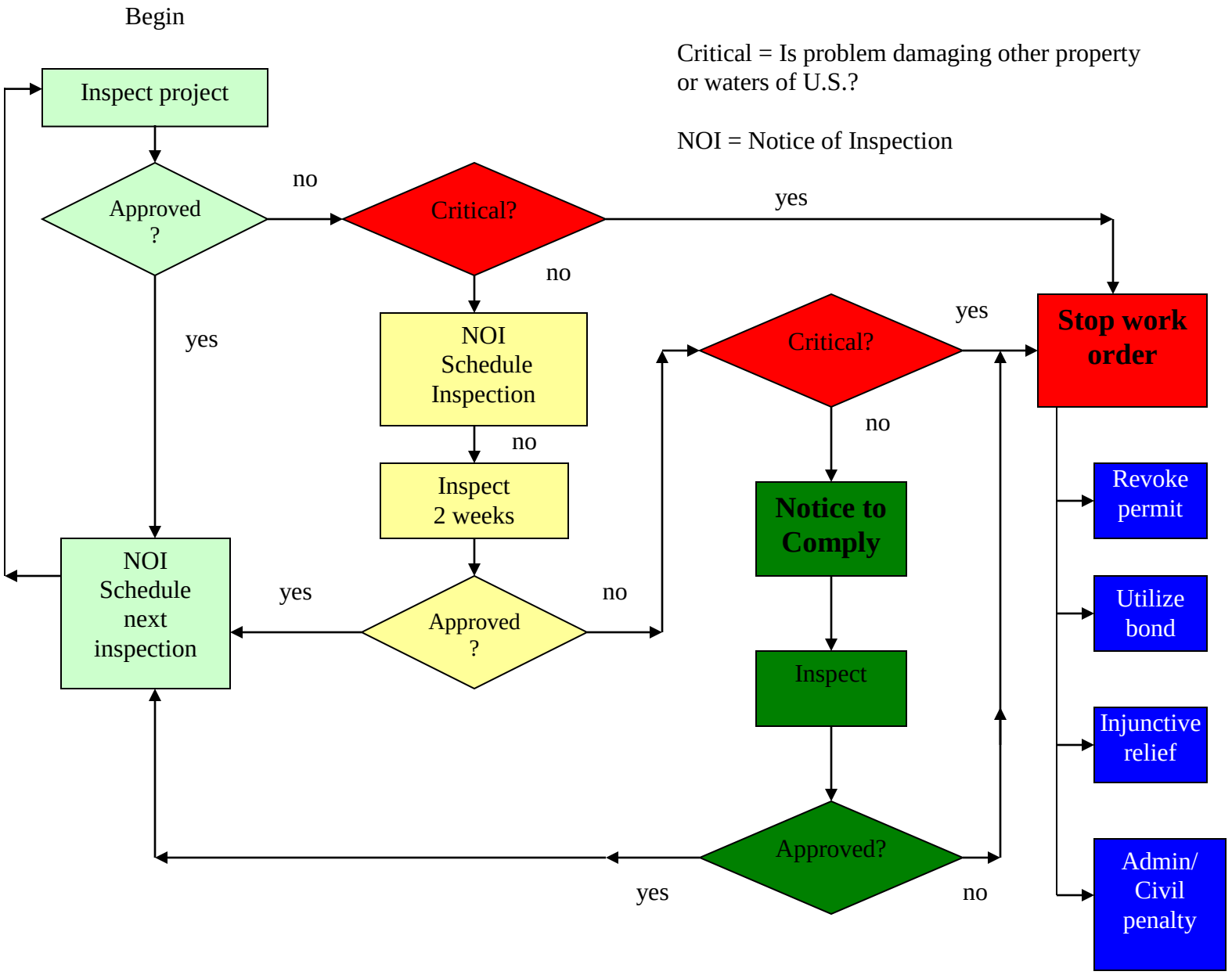
Hanover County has taken the appropriate measures to control non-stormwater discharges to the storm sewer system during land disturbing activities. Non-stormwater discharges can include wastewater, concrete washout, fuels and oils, etc. (Ref. Co. Ord. Sec. 10-83). Allowable non-stormwater discharges to the storm sewer system are described in County Ordinance Section 10-74.

Complaints

Upon receiving a complaint concerning a land disturbing activity, an eroding area, or sediment deposition onto adjacent properties or waters, the Environmental Compliance Manager, E&S inspector, or designated person will initiate an investigation within 2 working days. The complaint investigation and follow-up may be assigned to an E&S inspector, or designated person as deemed appropriate.

Generally, complaints concerning E&S involve (1) non-compliance with an existing plan, (2) land disturbing activities without a plan or permit, or (3) eroding lands and/or sediment deposition onto adjacent properties or waters in which there is no active land disturbing activity. The procedures for dealing with these situations have been described above.

Complaints can be directed to the Department of Public Works at 804-365-6181.



Inspections that reveal:

1. **Critical problems** shall be recorded as "Disapproved" and the appropriate enforcement action(s) will be initiated immediately.

2. **Non-critical problems** shall be recorded as "Approved with exception" and given a correction deadline. The follow-up inspection must show that previously noted problem(s) have been satisfactorily corrected and recorded as an "Approved."

3. **Previously cited problems** have not been corrected or conditions have changed such that the problems have become critical will be recorded as "Disapproved" and appropriate enforcement actions will be initiated immediately.

Hanover County

Application and Procedures for

SITE PLAN APPROVAL

**See Page 5 for Fee Submittal Procedure

County of Hanover Department of Planning
7516 County Complex Road
P.O. Box 470
Hanover, VA 23069
(804) 365-6171(p) (804) 365-6540(f)
www.hanovercounty.gov

TABLE OF CONTENTS

This application is for use by all applicants for site plan approval, including commercial, industrial, and multi-family residential. **Requests for amendments to approved site plans should also be made with this application.**

Because of the necessity for accurate boundaries, topography drawn to 2-foot contours, hydrological computations, and detailed locational information for improvements, **it may be required that the site plan be prepared by an appropriate professional (engineer, surveyor, architect, or landscape architect). (Please check with the Departments of Public Works and Public Utilities for professional requirements.)** You are also advised that any conveyance of a portion of the subject property may require subdivision review and approval.

Should you have any questions during the course of preparation of a site plan for submittal, please contact the Planning staff at 365-6171. The staff is available to assist you with any questions or problems.

Approval Process for Site Plan Applications

Pre-Application Meeting (Optional)

- These meetings are typically held on the 2nd and 4th Wednesdays of the month. (See Site Plan Review Schedule - http://www.co.hanover.va.us/planning/splanpro.htm) **These meetings are strongly encouraged** but not required.

↓

Submit Application for Approval

- Application deadlines are typically the second and fourth Tuesday of each month. (See Site Plan Review Schedule - http://www.co.hanover.va.us/planning/splanpro.htm)
- Submit application, checklists, and 11 sets of site plans and landscape plans. The required fees must be submitted within fourteen (14) days of the date of notification of acceptance.

↓

Agency Review of Complete Plans

- Applications are reviewed by all agencies for completeness the day after the submission deadline. Applications that are determined incomplete will be returned to the applicant. (For example, a site plan will be returned if a required landscaping plan or drainage calculations are not included in the submittal.)
- The Planning Department will circulate complete plans to all affected agencies for review and comment. A comment letter from each agency will be sent to the applicant's engineer based on the date of acceptance. (See Site Plan Review Schedule - http://www.co.hanover.va.us/planning/splanpro.htm)

↓

Staff/Applicant Meeting

- The Applicant or Engineer is encouraged to call or meet with individual departments prior to the staff/applicant plan meeting to ask questions and resolve issues.
- Date of meeting is determined by the date of submittal (See Site Plan Review Schedule - http://www.co.hanover.va.us/planning/splanpro.htm). The Applicant may choose to waive the meeting, if contact with individual review departments has addressed any outstanding concerns.
- Following the meeting, staff will determine whether the resubmittal will be handled as Routine or Complex.

↓

Resubmittal of Revised Plans by Applicant

- Includes resubmittal form, 14 sets of plans, written responses to comments, and marked-up set of plans
- If a plan is designated for Routine review, comments or approval will be issued within 7-10 calendar days
- If a plan is designated for Complex review, comments or approval will be issued within 15-20 calendar days

↙ ↘

Revisions Still Required

↓

Pre-3rd submittal meeting

- Applicant and engineer must have a meeting with agencies with outstanding comments prior to submission for a third review, unless waived by all departments.
- Meetings typically held the second and fourth Thursday of each month.

↓

Resubmittal of Revised Plans by Applicant

- Plans are routed to affected agencies and reviewed within 7-10 days.
- Comment Letter sent or applicant is notified that plans are approvable.

Approvable Site Plans

↓

Site Plan Approval

- The Deputy Director will sign 14 prints of the site plan upon approval. The County will return two copies to the Applicant. Applicant must keep one copy of the approved site plan on site during construction. If the Applicant would like more than two signed copies of the plan, additional copies should be provided by the Applicant.
- No work other than clearing, shall occur onsite before final site plan approval. **(Unless an early land disturbance permit has been issued by the Department of Public Works, grading and grubbing are not permitted before site plan approval.)**

Hanover County Planning Department Application

Request for SITE PLAN REVIEW – 1ST SUBMISSION

NEW ☐ AMENDMENT ☐

Please type or print using **black** ink. SPR-_____

NAME OF PROJECT: _____

SITE PLAN INFORMATION

Site Acreage: _____ Current Zoning: _____
Rezoning, CUP, & SE Case No.(s) (if applicable): _____
_____
Existing Square Footage of Structure(s): _____
Proposed Square Footage of Structure(s): _____

GPIN(s): _____
_____
Location: _____
Name of subdivision (if applicable): _____
Magisterial District: _____

ATTACHMENTS - For ALL REQUESTS you must submit the following:

☐ **a)** Completed Site Plan Checklist
☐ **b)** Eleven (11) sets of plans, folded no larger than 9" x 12" and one (1) 8 ½" x 11" reduction
For residential site plans, submit thirty (30) sets of plans
☐ **c)** Eleven (11) copies of landscape plan, if required
☐ **d)** Verification of submittal of FAA Form 7460 (if applicable). (FAA at Richmond Airport 804-222-7494)
☐ **e)** Department of Public Works Project Information and Tracking Sheet
☐ **f)** Acknowledgement of Application Fee Payment Procedure

APPLICANT INFORMATION

As owner, I hereby authorize submission of this site plan.
Property Owner _____
Address _____
_____
Signature _____

Telephone No. _____
Fax No. _____
Email Address _____
_____

Developer _____
Contact Name_____
Address _____
_____
Signature _____

Telephone No. _____
Fax No. _____
Email Address _____
_____

Engineer_____
Contact Name_____
Address _____
_____

Telephone No. _____
Fax No. _____
Email Address _____
_____

PLEASE DIRECT CORRESPONDENCE/ QUESTIONS TO: Owner ☐ Developer ☐ Surveyor/Engineer ☐

As owner/developer/surveyor/engineer of this property, I hereby authorize submission of this site plan and certify that this application is complete and accurate to the best of my knowledge.

Name (Print): _____
Signature: _____ Date: _____

STAFF USE ONLY:

Accepted by: _____ Fee Amount Due: _____ Date: _____ HTE#: _____

ACKNOWLEDGEMENT OF APPLICATION FEE PAYMENT PROCEDURE

I hereby acknowledge that this application is not complete until the payment for all applicable application fees has been received by the Hanover County Planning Department. The Hanover County Planning Department shall notify me by mail (at the address listed below) of the applicable fee(s) at such time that they determine that the application is complete and acceptable. I acknowledge that I am responsible for ensuring that such fees are received by the Hanover County Planning Department within fourteen (14) days of the date of the notification letter. Non-payment of the fee will result in disapproval of the plan. No further submittals of plans will be accepted, and no plans will be approved until the fee is paid.

Should my application be accepted, my fee payment will be due by _____. (To be filled in by a Planning Staff member.)

Signature of applicant/authorized agent _____ Date _____

Print Name _____

Signature of applicant/authorized agent _____ Date _____

Print Name _____

Address to which notification letter is to be sent:

_____

_____

_____

FEES

- ☐ Commercial/ Industrial Site Plan - $1100
- ☐ Residential - $1000 + $10/unit
- ☐ Amendment (after final approval) - $100 + $50/acre
- ☐ Landscaping Plan - $50/acre

FOR STAFF USE ONLY:

Fees:

Base Fee _____

Acreage Fee _____

Landscaping Fee _____

TOTAL _____

Hanover County Planning Department Application

Request for SITE PLAN APPROVAL - RESUBMISSION

Submittal: 2nd ☐ 3rd ☐ 4th ☐ 5th ☐ Other ☐

CASE #: _____

NAME OF SITE:	_____

SITE PLAN INFORMATION

Site Acreage: _____ Rezoning, CUP, & SE Case No.(s) (if applicable): _____ 3rd Submittal Meeting Date (Required):_____	GPIN(s): _____ Location: _____

APPLICANT INFORMATION

Property Owner _____ Address _____ _____	Telephone No. _____ Fax No. _____ Email Address _____
Developer _____ Contact Name_____ Address _____ _____	Telephone No. _____ Fax No. _____ Email Address _____ _____
Engineer_____ Contact Name_____ Address _____ _____	Telephone No. _____ Fax No. _____ Email Address _____ _____

PLEASE DIRECT CORRESPONDENCE/ QUESTIONS TO: Owner Developer Surveyor/Engineer

As owner/developer/surveyor/engineer of this property, I hereby certify that this application is complete and accurate to the best of my knowledge.

Name (Print): _____

Signature: _____ Date: _____

ATTACHMENTS – For ALL REQUESTS you must submit the following:

☐ a) Fourteen (14) copies of the final site plan, folded no larger than 9" x 12 "

☐ b) Fourteen (14) copies of landscape plan and two (2) lighting plans, if required

☐ c) Provide written responses which address each review comment and where on the site plan it has been addressed. In such instances that the comment is not or cannot be addressed, please acknowledge so, and indicate the reason. These response remarks may be "redlined" on the review letter and submitted with the revised plan, or typed below the original review comments if staff has provided comments to you by email. Alternatively, the response remarks may appear in a separate letter with reference to the review comment numbers to which the remarks are in response.

☐ d) Return planning marked copy of site plan from previous submittal

☐ e) Return site plan sign

☐ f) Applicable fee: 3rd Submittal - $250 4th Submittal - $350 Subsequent Submittals - $450

STAFF USE ONLY: Accepted by: _____ Date: _____ HTE#: _____

SITE PLAN CHECKLIST – DEPARTMENT OF PLANNING

Department of Planning Checklist – Use this checklist to prepare the required Plan.

Yes	No	Staff:	Yes	No
		1. General Notes to be located on cover sheet, and to include the following information:		
☐	☐	a) Name of Site plan.	☐	☐
☐	☐	b) Magisterial District, County and State.	☐	☐
☐	☐	c) Name(s) and address(es)of owner(s) and developer.	☐	☐
☐	☐	d) Name of surveyor or engineer who prepared the plat.	☐	☐
☐	☐	e) Date of completion of the plan and any subsequent revisions.	☐	☐
☐	☐	f) Number of sheets and match lines.	☐	☐
☐	☐	g) Site Plan number and HTE Project # (ex: SPR-1-13 HTE Project #13-30000001)	☐	☐
		2. Located in the bottom right hand corner Information block, to include the following information:		
☐	☐	a) Geographic Parcel Identification Number (GPIN)	☐	☐
☐	☐	b) Zoning of Property	☐	☐
☐	☐	c) Case numbers for any associated rezoning, CUP, SE, Variance, etc.	☐	☐
☐	☐	d) Use of property	☐	☐
☐	☐	e) Total site acreage	☐	☐
☐	☐	f) Building square footage existing/proposed.	☐	☐
☐	☐	g) Parking required and provided	☐	☐
☐	☐	h) Loading Space required and provided	☐	☐
☐	☐	i) Traffic Zone	☐	☐
☐	☐	j) List any applicable Overlay districts for this property	☐	☐
		3. A site tabulation chart showing the following:		
		Buildings _____ sq. ft. _____ % of site		
		Impervious surfaces (parking and drives) _____ sq. ft. _____ % of site		
		Open Space _____ sq. ft. _____ % of site		
		Total _____ sq. ft.		
☐	☐	4. Approval letters for any zoning, CUP, SE, variance, etc. shall be added to the plans.	☐	☐
☐	☐	5. True North arrow on each sheet of plans.	☐	☐
		6. The scale of the site plan shall be as follows:		
☐	☐	a) For projects containing more than 200 acres: not more than 200':1".	☐	☐
☐	☐	b) For projects containing 50 to 200 acres: not more than 100':1".	☐	☐
☐	☐	c) For projects containing 10 acres to 50 acres: not more than 50':1'.	☐	☐
☐	☐	d) For projects containing 10 acres or less: not more than 30':1".	☐	☐

☐ ☐	7. A location map, at a scale no greater than 1":2000'.	☐ ☐
☐ ☐	8. All information required for compliance with Chapter 10, Article II, Hanover County Code: Chesapeake Bay Preservation (Certification or Water Quality Impact Assessment)	☐ ☐
☐ ☐	9. The boundaries of the property involved; County and/or town boundaries; property lines with bearings and distances; existing easements with recordation reference, streets with r/w width and Route number, buildings, and/or waterways; areas affected by Chesapeake Bay preservation requirements; burial sites or cemeteries; and major tree masses.	☐ ☐
☐ ☐	10. Zoning district boundaries.	☐ ☐
☐ ☐	11. Provide the owners' names, GPINs, and zoning for all adjacent properties.	☐ ☐
☐ ☐	12. Topography, at intervals of two (2) feet, unless waived or requested at a greater interval by the Director.	☐ ☐
☐ ☐	13. Location and dimensions of all off-street parking and loading areas	☐ ☐
☐ ☐	14. The general location and character of construction of proposed streets, alleys, driveways, curb cuts, entrances, and exits, existing and proposed.	☐ ☐
☐ ☐	15. Show distance(s) from the centerline(s) of driveway(s) in either direction from the subject site and site boundary lines.	☐ ☐
☐ ☐	16. Location and method of screening for all outdoor waste receptacles on site. Dumpsters must be screened on all four sides. Provide a detail of the fence enclosure and gate on the plans.	☐ ☐
☐ ☐	17. The approximate location(s) and size(s) of sanitary and storm sewers, water mains, culverts, and other underground structures, both existing and planned, in or near the project.	☐ ☐
☐ ☐	18. All existing easements must reference recordation information.	☐ ☐
☐ ☐	19. Sanitary facilities, if private, including the locations of primary and secondary drainfields.	☐ ☐
☐ ☐	20. Show all existing electric, telephone, and cable lines.	☐ ☐
☐ ☐	21. General location of all internal landscape areas.	☐ ☐
☐ ☐	22. General location, height, and material for all fences, walls, screen plantings, berms, and peripheral landscaping. The dimensions of required perimeter and front buffer(s), if any, shall be shown. (See also Landscape Plan checklist)	☐ ☐
☐ ☐	23. All requirements of the Department of Public Works, according to the attached checklist.	☐ ☐
☐ ☐	24. All requirements of the Department of Public Utilities. For the requirements of the Department of Public Utilities, please refer to the Hanover County Water and Sanitary Sewer Standards which are available from the Department of Public Utilities.	☐ ☐
☐ ☐	25. All requirements of the Virginia Department of Transportation, according to the attached checklist.	☐ ☐
☐ ☐	26. Proposed location of all non-residential uses, accessory or main. (ex: accessory structures, retaining walls, wells, pedestrian bridges, etc.)	☐ ☐
☐ ☐	27. Proposed locations and orientation of all proposed detached, free-standing signs, if known.	☐ ☐

	Additional requirements for residential site plans:	
☐ ☐	1. The general location of proposed lots, setback lines, and easements, and proposed reservations for parks, parkways, playgrounds, school sites, and open space.	☐ ☐
☐ ☐	2. A tabulation of the total number of dwelling units of various types in the project, and the overall project density in dwelling units per acre, gross or net, as required by district regulations.	☐ ☐
	Landscaping Plan	
☐ ☐	1. Location of existing and proposed landscaping.	☐ ☐
	2. Plant Schedule indicating:	
☐ ☐	a. Latin and common name	☐ ☐
☐ ☐	b. Number of plants	☐ ☐
☐ ☐	c. Caliper and/or spread	☐ ☐
☐ ☐	d. Individual canopy coverage	☐ ☐
☐ ☐	e. Total canopy coverage	☐ ☐
☐ ☐	f. Staking plan	☐ ☐
☐ ☐	3. Thoroughfare Buffer calculations in accordance with Sec. 26-264	☐ ☐
☐ ☐	4. Greenspace Calculations in accordance with Sec. 26-192, if applicable.	☐ ☐
☐ ☐	5. Canopy calculations in accordance with Sec. 26-192, if applicable.	☐ ☐
☐ ☐	6. Detail of required landscape screening and/or berm, if applicable.	☐ ☐
☐ ☐	7. 25’ sight triangles at entrances, measured from the edge of right-of-way.	☐ ☐
	Lighting Plan (Required if site is utilized during the hours of darkness)	
☐ ☐	1. Location of all existing and proposed exterior light fixtures (building and freestanding) in accordance with Sec. 26-267 through 26-271.	☐ ☐
☐ ☐	2. Photometric diagram showing illumination levels in all parking areas and at all property lines in accordance with Sec. 26-267 through 26-271.	☐ ☐
☐ ☐	3. Two (2) copies of fixture cutsheets for each proposed fixture.	☐ ☐
☐ ☐	4. Light Uniformity Ratio	☐ ☐

SITE PLAN CHECKLIST – VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT Checklist – Use this checklist to prepare the required Plan.

Yes	No	Staff:	Yes	No
		1. At proposed entrances or streets the following is shown:		
☐	☐	a) Typical Sections	☐	☐
☐	☐	b) Sight Distance	☐	☐
☐	☐	c) Entrance width at end of radius	☐	☐
☐	☐	d) Entrance radius	☐	☐
☐	☐	e) Type curbing/entrance standards	☐	☐
☐	☐	f) Distance to nearest intersection State Route	☐	☐
☐	☐	g) Lengths of any required left and right turn lanes, tapers and transitions	☐	☐
		2. For existing state routes the following is shown:		
☐	☐	a) Route Number	☐	☐
☐	☐	b) Street Name	☐	☐
☐	☐	c) Pavement Width	☐	☐
☐	☐	d) Right of Way Width	☐	☐
☐	☐	e) Speed Limit	☐	☐
☐	☐	3. VDOT checklist for Subdivision Streets has been completed and is attached if there are streets being constructed for acceptance into the State Secondary System.	☐	☐
		NOTE: Contact the Development Review Section at VDOT at 752-5513 for checklist and general notes, if necessary, before submitting site plan.		
☐	☐	a) All drainage information requested on the Public Works Checklist has been provided, including complete drainage calculations for all affected existing structures within VDOT right of way.	☐	☐
☐	☐	b) All existing and proposed utilities, if within limits of proposed right of way are shown, with details as to location and typical sections.	☐	☐
☐	☐	c) Where security lighting is proposed, indicate the following if lighting will be on VDOT right of way or will affect the traveling public:	☐	☐
☐	☐	d) Distance of pole from edge of pavement and proposed right of way.	☐	☐
☐	☐	e) Distance from pole to center of luminaire.	☐	☐
☐	☐	f) Height of luminaire above centerline of roadway.	☐	☐
☐	☐	g) Level of illumination.	☐	☐
		TRAFFIC ENGINEERING		
		(This Section not applicable if site plan proposal will not generate additional traffic.)		
		MAJOR DEVELOPMENTS:		
☐	☐	• Proposed developments with a significant impact on the existing road network will require a traffic impact analysis. VDOT will make the determination if a traffic impact analysis is needed at rezoning or initial submittal.	☐	☐
☐	☐	• If a traffic analysis is required, further reviews will not be made until the analysis has been submitted.	☐	☐
☐	☐	• All improvements required by the traffic impact analysis to obtain a minimum level of service"D" are shown on the site plan.	☐	☐

ALL OTHER SITE PLANS:

1. If no traffic impact analysis was required, complete the following:

- ☐ ☐ a) Total Acreage
- ☐ ☐ b) Proposed Use
- ☐ ☐ c) Size of Building in Sq. Ft.
- ☐ ☐ d) Estimated Projected Traffic for Site
- ☐ ☐ e) Average Daily Traffic on Adjacent State Route
- ☐ ☐ f) On-site circulation patterns shown for potential impact on existing roadway.
- ☐ ☐ g) All roadway improvements to accommodate traffic generated by proposed development are shown.
- ☐ ☐ h) Existing and proposed traffic control devices are shown, such as pavement marking and signs, if affected.
- ☐ ☐ i) Any proposed right of way dedication shown on site plan.
- ☐ ☐ j) Adjacent property information shown on plan:
  - ☐ ☐ 1. Name of Owner
  - ☐ ☐ 2. Location
  - ☐ ☐ 3. Current Zoning
  - ☐ ☐ 4. Current Use
  - ☐ ☐ 5. Total Acreage of Each Adjacent Property

GENERAL NOTES:

Site plans and subdivision plans shall be designed in accordance with the appropriate manuals of the Virginia Department of Transportation:

- ☐ ☐ a) ”Minimum Standards of Entrances to State Highways”-Traffic Engineering Division.
- ☐ ☐ b) “Subdivision Street Requirements”-Secondary Road Division.
- ☐ ☐ c) ”Road and Bridge Specifications”
- ☐ ☐ d) ”Drainage Manual”–Location and Design Division.
- ☐ ☐ e) ”Land Use Permit Manual”–Maintenance Division.
- ☐ ☐ f) ”Guidelines for Lighting by Permit on State Right of Way”- Maintenance Division.
- ☐ ☐ g) ”Road and Bridge Standards”–Location and Design Division.

These design standards are considered minimal. In keeping with its mission to provide a safe, efficient, and effective ground transportation system, VDOT is obligated to make recommendations that exceed these standards where it is deemed necessary and in VDOT’s best interest.

Where a county has adopted standards higher than VDOT standards, the higher standards of the county will prevail.

SITE PLAN CHECKLIST – DEPARTMENT OF PUBLIC WORKS

Department of Public Works Checklist – Use this checklist to prepare the required Plan.

Yes	No	Staff:	Yes	No
		General Information		
☐	☐	1. Provide engineers/surveyors/landscape architects name, address, telephone number, and registration seal.	☐	☐
☐	☐	2. Provide the owners and/or developers name, address, and telephone number.	☐	☐
☐	☐	3. Provide a vicinity map.	☐	☐
☐	☐	4. Provide the original plan dates and all revision dates with a brief description of the items revised.	☐	☐
☐	☐	5. Provide titles and numbering for all sheets.	☐	☐
☐	☐	6. Show the location, width, and recordation information for all existing drainage easements. All proposed easements need to be a minimum of 20 feet.	☐	☐
☐	☐	7. Provide all information required for compliance with Chapter 10, Article II, Chesapeake Bay Preservation, Code of Hanover.	☐	☐
☐	☐	8. Provide topography of the parcel(s) and surrounding vicinity, showing existing and proposed contour intervals of two feet or less. Reference source and date of all topography.	☐	☐
☐	☐	9. Provide the location and description of all existing and proposed drainage structures, pipes, roof drains, swales, ditches, curbs, and channels and the direction of flow in each.	☐	☐
☐	☐	10. Show the approximate limits of the 100-year floodplain and provide the FIRM Community-Panel Number.	☐	☐
☐	☐	11. Provide an erosion and sediment control plan in accordance with the Virginia Erosion and Sediment Control Law, Title 10, Chapter 5, Article 4 of the Code of Virginia; VR 625-02-00, Virginia's Erosion and Sediment Control Regulations; and the Erosion and Sediment Control Ordinance of the Code of Hanover (see additional checklist).	☐	☐
☐	☐	12. Show the limits of all land disturbance associated with the proposed project.	☐	☐
☐	☐	13. If wetlands or hydric soils as per the Hanover County Soil Survey are present, provide a wetlands delineation and verification of the delineation from the Corps of Engineers. Also provide approval from the Corps for your plan if it affects the wetlands.	☐	☐
☐	☐	14. Provide a drainage plan and analysis in accordance with the Hanover County Drainage Design Handbook, Chapter 12 of the Code of Hanover (Floodplain and Drainage Control), VDOT Drainage Manual, and the Erosion and Sediment Control Regulations (see additional checklist).	☐	☐
☐	☐	15. Lot grading plans may be required on flagged residential lots during review of the subdivision construction plans or the building permits.	☐	☐

Drainage Plan and Analysis Checklist

☐ ☐	1. Provide the drainage area in acres (supported by outlined contour map).	☐ ☐
☐ ☐	2. Provide runoff coefficients for the pre-developed and post-developed drainage areas. They must reflect the conditions of ultimate development.	☐ ☐
☐ ☐	3. Provide supporting calculations for the computation of Q2, Q10, and Q100, both pre-developed and post-developed where required.	☐ ☐
☐ ☐	4. Provide supporting calculations for all channels, existing and proposed, natural and man-made, including the following:	☐ ☐
☐ ☐	a) Depth	☐ ☐
☐ ☐	b) Type of Lining	☐ ☐
☐ ☐	c) Mannings “n” Value	☐ ☐
☐ ☐	d) Typical Channel Cross Section	☐ ☐
☐ ☐	e) Side Slope Ratios	☐ ☐
☐ ☐	f) Q2, Q10, Q100, V2, D10	☐ ☐
☐ ☐	g) Longitudinal Slope	☐ ☐
☐ ☐	h) Linings Described by Stations	☐ ☐
☐ ☐	i) Contributing Drainage Areas	☐ ☐
☐ ☐	j) Flow arrows	☐ ☐
☐ ☐	5. Provide Additional Information As Required on VDOT Standard Form Attached	☐ ☐
	6. Provide for all detention/retention basins the following:	
☐ ☐	a) Construction Details for the Basin and Outlet Devices.	☐ ☐
☐ ☐	b) Storm Routing for the 2, 10, and 100 Year Storms.	☐ ☐
☐ ☐	c) All basins must have a maintenance agreement. (see attached) This agreement must be approved by DPW and then executed. Before the plans will be approved the deed book and page number must be referenced on the plan.	☐ ☐
☐ ☐	d) Delineate the Approximate 100-Year Storm Elevation.	☐ ☐
☐ ☐	e) Contributing Drainage areas.	☐ ☐
☐ ☐	f) Compliance With All Requirements of Attached Requirement List.	☐ ☐
	7. Provide for all culverts the following:	
☐ ☐	a) Inverts	☐ ☐
☐ ☐	b) Length	☐ ☐
☐ ☐	c) Type, RCP class III or Bit. Coated CMP(RCP class III only in County easements)	☐ ☐
☐ ☐	d) Headwater Depth	☐ ☐
☐ ☐	e) Discharge protection	☐ ☐
☐ ☐	f) Outlet Velocity	☐ ☐
☐ ☐	g) Diameter	☐ ☐
☐ ☐	h) Design Cover	☐ ☐
☐ ☐	i) Provide Additional Information as Required on VDOT Standard Form Attached	☐ ☐

8. Provide for all curb and gutter/storm sewer systems the following:

- ☐ ☐ a) Depth and Spread in Gutter
- ☐ ☐ b) Length of Throats and Placements of Inlets
- ☐ ☐ c) Type of Material
- ☐ ☐ d) Diameter (Minimum of 15 inches)
- ☐ ☐ e) Velocity (Minimum Allowable of 3 FPS Maintained)
- ☐ ☐ f) Capacity (Based on 10-year Storm Event)
- ☐ ☐ g) Hydraulic Grade Line Computations Noting Elevations at Key Points (Drop Inlets, Manholes, etc.)
- ☐ ☐ h) Concrete Flume Transition Details from Curb to Ditch
- ☐ ☐ i) Details of VDOT Standard Structures (Drop Inlets, Curb/Gutter, etc.)
- ☐ ☐ j) Provide the profile for the storm sewer in conjunction with any road profiles or other utilities
- ☐ ☐ k) Provide Additional Information As Required on VDOT Standard Form Attached

☐ ☐ 9. Provide details of all special design structures (flumes, basin outlets, energy dissipators, etc.)

Erosion and Sediment Control Plan Checklist

☐ ☐ 1. Provide a narrative report which includes the following:

☐ ☐ 2. A brief project description of the nature and purpose of the land disturbing activity, and the amount of grading involved.

- ☐ ☐ b) A description of the existing topography, vegetation, and drainage.
- ☐ ☐ c) A description of neighboring areas such as streams, lakes, residential areas, roads, etc., which might be affected by the land disturbance.
- ☐ ☐ d) A brief description of the soils on the site giving such information as soil, name, mapping unit, erodibility, permeability, depth, texture, and soil structure.
- ☐ ☐ e) A description of areas on the site which have potentially serious erosion problems.
- ☐ ☐ f) A description of the methods which will be used to control erosion and sedimentation on the site.
- ☐ ☐ g) A brief description, including specifications, of how the site will be stabilized after construction is completed.
- ☐ ☐ h) A brief summary of storm water management considerations of downstream receiving channels and their condition and adequacy.
- ☐ ☐ i) A schedule of regular inspection and repair of erosion and sediment control structures should be set forth.
- ☐ ☐ j) Any calculations for the design of such items such as sediment traps, sediment basins, diversions, etc.

☐ ☐	3. Provide a vicinity map on the plan.	☐ ☐
☐ ☐	4. Provide the existing topography of the site on the plan.	☐ ☐
☐ ☐	5. Show the existing tree lines, grassy areas, or unique vegetation on the plan.	☐ ☐
☐ ☐	6. Show the boundaries of different soil types on the plan.	☐ ☐
☐ ☐	7. Provide a North arrow on the plan.	☐ ☐
☐ ☐	8. Show the areas with potentially serious erosion problems on the plan.	☐ ☐
☐ ☐	9. Provide the drainage breaks and the direction of flow within the drainage areas on the plan.	☐ ☐
☐ ☐	10. Provide the proposed topographical changes.	☐ ☐
☐ ☐	11. Delineate the limits of all clearing and grubbing associated with the proposed project.	☐ ☐
☐ ☐	12. Show the locations of the erosion and sediment control measures to be used on the site.	☐ ☐
☐ ☐	13. Provide detail drawings of structural practices used to control erosion and sedimentation.	☐ ☐
☐ ☐	14. Provide a seeding schedule on the plan. (see attached)	☐ ☐
☐ ☐	15. Provide Erosion and Sediment Control Notes on the plan. (see attached approved notes)	☐ ☐
☐ ☐	16. Provide the name of the Certified Responsible Land Disturber (RLD) on the plans. See website: http://www.dcr.virginia.gov/stormwater_management/es_rld.shtml	☐ ☐

Hanover County Department of Public Works
Project Information and Tracking Sheet

Project Information

1. Name of Project:_____
2. Site Plan #: _____
3. GPIN #'s:_____
4. Total Area (acres): _____
5. Total Amount of Disturbed Area (acres): _____
6. Total Amount of Existing Impervious Area (ft^2): _____
7. Total Amount of Proposed Impervious Area (ft^2) _____
8. Total Amount of Impervious Area on site (ft^2): _____
9. % Imperviousness of site:_____
10. Hydrologic Unit Code: _____
11. Is Area within a Chesapeake Bay Act Area (RMA)? ☐ Yes ☐ No
12. Does project contain Resource Protection Area? ☐ Yes ☐ No
    - If yes, is there any encroachment in this buffer? ☐ Yes ☐ No
    - If yes, what is the amount of area (ft^2)? _____
13. Does project contain wetlands? ☐ Yes ☐ No
    - If yes, will there be any wetlands impacts? ☐ Yes ☐ No
    - If yes, what is the amount of impact (ft^2)? _____
14. Does the project currently contain stormwater basins? ☐ Yes ☐ No
    - If yes, provide the Deed Book/Page # of Maintenance Agreement: Deed Book _____ Page #_____
    - If yes, what type of basin is it? ☐ Regional ☐ Private
    - If Regional, what is the Basin ID? _____
15. Will this project require a basin? ☐ Yes ☐ No
    - If yes, what kind of basin will it be? ☐ Regional ☐ Private
    - If the basin is Regional, what is its Basin ID? _____
    - If private, the basin will need to have a Maintenance Agreement recorded prior to plan approval

Owner/Developer/Engineer Information

Owner's Name and Address: _____

_____

_____

Phone #: _____ Fax #:_____

Email address: _____

Engineer's Name and Address:_____

_____

_____

Phone #: _____ Fax #:_____

Email address: _____

Developer's Name and Address: _____

_____

_____

Phone#: _____ Fax #:_____

Email address: _____

Please go to the following links to find forms to be completed and submitted with this application:

http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/2002%20Drainage%20Manual/pdf/drain-manual-chapter-07.pdf

see Page 3

http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/2002%20Drainage%20Manual/pdf/drain-manual-app-08.pdf

see page 5, Appendix A

http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/2002%20Drainage%20Manual/pdf/drain-manual-chapter-09.pdf

see Appendix 9B-1, 2, and 3

You may also call the Hanover County Planning Department (804-365-6171) or Public Works Department (804-365-6181) to obtain copies of these forms.

The following is a link to a map of Virginia's 6th Order NWBD Hydrologic Units (VAHU6) for Hanover:

http://www.co.hanover.va.us/works/envirmnt_nwbd6-map.pdf

The following is a link to the Water Quality Impact Assessment form:

http://www.co.hanover.va.us/PW/Water_Quality_Impact_Assessment_Form.pdf

Department of Public Works

Standard Erosion and Sediment Control & Pollution Prevention Plan Notes

1. Prior to commencement of any land disturbance activities, a land disturbance permit must be issued by the Department of Public Works. An approved Erosion and Sediment Control Plan and bonding of the erosion and sediment control measures is required for permit issuance.

2. A separate land disturbance permit or an ESC plan amendment to this plan must be submitted to, and approved by Hanover County DPW prior to any off-site land disturbance (borrow / filling / disposal activities) associated with this project. If the off-site portion of the project is located within Hanover County, additional E&S inspection fees will be required.

3. Contact the Department of Public Works' Environmental Compliance Manager, 365-6181, a minimum of 48 hours prior to commencement of land disturbance activities. A pre-construction meeting is required unless it is waived by the Environmental Compliance Manager.

4. No work may occur outside the limits of disturbance shown on the approved plans. Working outside of the limits of disturbance shown on the approved plans will result in a Stop Work Order being issued with the potential for fines being levied.

5. Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site.
6. Temporary soil stabilization shall be applied within seven (7) days to denuded areas that may not be at final grade but will remain dormant for longer than thirty (30) days.
7. During construction of the project, soil stock piles shall be stabilized or protected with sediment trapping measures.
8. Stabilization measures shall be applied to earthen structures such as dams, dikes, and diversions immediately after installation.
9. Erosion and sediment control measures shall be constructed and installed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place. Initial clearing must be the minimum required to install erosion and sediment control measures and devices. Should either the Erosion and Sediment Control Narrative or Sequence of Construction conflict with this requirement, the conflicting portions of either will be determined to be invalid.
10. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that, in the opinion of the County Engineer or his designated agent, is uniform mature enough to survive and will inhibit erosion.
11. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
    a. No more than 500 linear feet of trench may be opened at one time
    b. Excavated material shall be placed on the uphill side of trenches
    c. Effluent from dewatering operations shall be trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
    d. Restabilization shall be in accordance with the above Notes.

12. All applicable federal, state, and local regulations pertaining to working in or crossing live watercourses shall be met.

13. Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by tracking onto the paved surface. Where sediment is transported onto a public road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a disposal area.

14. It shall be the owner's responsibility to inspect erosion control devices periodically and after every erodible rainfall. Any necessary repairs or clean up to maintain the effectiveness of the erosion control devices shall be made immediately.

15. Additional erosion and sediment control measures and devices may be required by the Director of Public Works or his designated agent if deemed necessary.
16. The owner shall install additional erosion and sediment control devices and measures if the Registered Land Disturber determines that such additional devices and measures are necessary.

17. All erosion control devices shall be in place and functional at all times and if removed for construction progress, shall be replaced by the close of each workday.

18. Final removal of erosion control devices shall not occur until the Director of Public Works or his designated agent deems the site stabilized.

19. Permanent seeding is to be in accordance with the accompanying seeding schedule.

20. Construction site operators are required to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

21. Construction site operators are required to control the transport of dust and other wind born contaminants as a result of land-disturbing, demolition and construction activities. The operator shall prevent the surface and air movement of airborne substances in accordance with STD and SPEC 3.39 of the Virginia Erosion and Sediment Control Handbook or as approved by the Director of Public Works or his designated agent.

ORGANIC MULCH MATERIALS AND APPLICATION RATES			
	RATES		
MULCHES	**Per Acre**	**Per 1000 sq. ft**	**NOTES**
Straw or Hay	1 ½ - 2 tons (Minimum 2 tons for over winter cover)	70-90 lbs.	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry
Corn Stalks	4-6- tons	185-275 lbs	Cut or shredded in 4-6" lengths. Air- dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood Chips	4-6 tons	185- 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
Bark Chips Or Shredded Bark	50-70 cu. Yds.	1-2 cu. Yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. Or 45 lbs./1000 sq ft.			

LIMING REQUIREMENTS FOR TEMPORARY SITES	
pH Test	**Recommended Application of Agricultural Limestone**
Below 4.2	3 tons per acre
4.2 to 5.2	2 tons per acre
5.2 to 6	1 ton per acre

Source: VA DSWC

SEEDING MIXTURES, RATES, AND DATES: SOUTHERN PIEDMONT AND COASTAL PLAIN

SITE CONDITIONS	SEEDING MIXTURES	RATES		DATES		
		PER ACRE	PER 1000 ft^2	3/1 to 4/15	4/15 to 8/1	8/1 to 10/15
High Maintenance Lawns	1. Tall fescue - 90% Kentucky bluegrass -10%	250 lbs	6 lbs	X	no	X
Low Maintenance General Use	2. Tall fescue - 50% Ladino clover - 10% Red clover - 10% Korean lespedeza - 15% Annual ryegrass - 15%	80 lbs	2 lbs	X	(a,b) X	X
	3. Tall fescue - 50% Sericea lespedeza - 30% Annual ryegrass - 20%	70 lbs	1 ½ lbs	X	(a) X	X
Droughty Areas, Sandy Soils	4. Tall fescue - 50% Sericea lespedeza - 20% Korean lespedeza - 15% Annual ryegrass - 15%	80 lbs	2 lbs	X	(a,b) X	X
Poorly Drained Areas	5. Tall fescue - 65% Korean lespedeza - 20% Annual ryegrass - 10% Redtop - 5%	80 lbs	2 lbs	X	(a,b) X	X

a) After May 1, use 10 Ib/A german millet or 2 lb/A weeping lovegrass in place of annual ryegrass.
b) After May 1, Korean lespedeza will not reseed itself. You may increase the amount of other legumes accordingly.

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS
"QUICK REFERENCE FOR ALL REGIONS"

Planting Dates	Species	Rate (lbs./acre)
Sept. 1 – Feb. 15	50/50 Mix of Annual Ryegrass (Lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100
Feb. 16 – Apr. 30	Annual Ryegrass (Lolium multi-florum)	60 – 100
May 1 – Aug. 31	German Millet (Setaria italica)	50

Source: VA SWCC

HANOVER COUNTY PUBLIC WORKS DEPARTMENT
Telephone #(804) 365-6181Fax #(804) 365-6233

SPR #_____E&S File #_____
P/Z H.T.E. #_____
B/P H.T.E. #_____

Date of Filing_____

APPLICATION FOR LAND DISTURBANCE PERMIT

Filing of this application with required fees, approved plans and required security at the office of the Department of Public Works is necessary to constitute an application for a Land Disturbance Permit.

Application to be completed by the Applicant

Contact Person _____ Phone _____ Fax_____
(First Name) (M.I.) (Last Name)

Email_____ Address _____
(Street and / or P.O. Box) (City) (State) (Zip)

Landowner _____ Phone_____ Fax_____

Email_____ Address _____
(Street and / or P.O. Box) (City) (State) (Zip)

PROJECT TITLE_____

GPIN(S) #_____ Acreage of Land Disturbance_____

Owner's Certification

The undersigned owner certifies that he/she is responsible for complying with the Hanover County Erosion and Sediment Control Program, Ch. 10, Art. 1 of the Hanover County Code, and for complying with the County approved Erosions and Sediment Control Plan for this project. The undersigned owner grants permission for access to the subject property, to Hanover County, its employees and/or agents for the purpose of inspecting and/or completing erosion and sediment control measures. I understand that a final inspection by the Department of Public Works must be requested and all land disturbance found to be in compliance, in order for the security to be released.

_____ _____
Signature of Land Owner Printed Name and Title of Land Owner

Responsible Land Disturber's Certification

The undersigned certifies that he/she is the Responsible Land Disturber for this Project.

_____ *Date*_____
(Signature)

*Printed Name*_____ *Certificate #*_____

*Address*_____

*Phone*_____ *Fax*_____ *Email*_____

PERMIT

(To be completed by the Department of Public Works)

Project Title_____ VSMP Construction Permit: ___Yes ___Not Required

Erosion and Sediment Control Plan Approval Date_____ Plan Prepared By_____

Bond Type _____ Bond Number _____ Bond Amount _____

Approved By _____ Date _____
(Director of Public Works or Designee)

Permit Duration_____ **Permit Expiration Date**_____

THIS PERMIT MUST BE KEPT ON THE WORK SITE AND SHOWN WHEN REQUESTED

Inspection history can be obtained by calling (804) 365-6036 or visiting us on the web at https://www.hanovercountyvirginia.org/Click2GovBP/Index.jsp DPW 11/08/11

HANOVER COUNTY TREE CANOPY CHART
December 23, 1992

Tree Species	Projected Tree Coverage @ 10 Years (Square feet)		
Deciduous Trees	**2" caliper**	**2 ½"**	**3"**
Acer campestre (Hedge Maple)	110	150	175
A. ginnala (Amur Maple)	110	150	175
A. palmatum (Japanese Maple)	110	150	175
A. platanoides (Norway Maple)	175	200	250
A. rubrum (Red Maple)	175	200	250
A. saccharum (Sugar Maple)	175	200	250
Aesculus hippocastanum (Horsechestnut)	125	150	175
Amelanchier arborea (Downey Serviceberry)	100	110	125
A. laevis (Allegheny Serviceberry)	100	110	125
Betula nigra (River Birch)	150	175	200
Carpinus caroloiniana (American Hornbeam)	100	110	125
Carya illinoiensis (Pecan)	175	200	250
C. ovata (Shagbark Hickory)	125	150	175
Castanea mollisima (Chinese Chestnut)	125	150	175
Celtis occidentalis (Hackberry)	125	150	175
Cercis canadensis (Redbud)	100	110	125
Cercidiphyllum japonicum (Katsuratree)	110	150	175
Chioanthus virginicus (Fringetree)	50	60	75
Cornus florida (Flowering Dogwood)	50	60	75
C. kousa (Kousa Dogwood)	100	110	125
Cotinus coggygria (Smoketree)	50	60	75
Diospyros virginiana (Persimmon)	100	150	175
Elaegnus angustifolia (Russian Olive)	100	110	125
Fagus grandifolia (American Beech)	150	200	200
F. sylvatica (European Beech)	150	200	250
Fraxinus americana (White Ash)	150	200	250
F. pennsylvanica (Green Ash)			
' Marshall's seedless	140	200	250
'Patmore	140	200	250
'Summit	140	200	250
Gingko biloba (Gingko/Maidenhair Tree)	75	100	125
Gleditsia triancanthus inermis			
(Thornless Honeylocust)			
"Imperial"	175	200	250
'Skyline'	175	200	250
'Shademaster'	175	200	250
Gymnocladus dioicus (Kentucky Coffeetree)	110	150	175
Juglans nigra (Black Walnut)	125	150	175
Koelreuteria paniculata (Golden Raintree)	75	100	125

Larix decidua (European Larch)	125	150	175
Liquidamber styraciflua (Sweetgum)	125	150	175
Liriodendron tulipfera (Tulip Tree)	175	200	250
Magnolia acuminata (Cucumber Tree)	150	200	250
M. soulangiana (Saucer Magnolia)	75	100	125
M. virginiana (Sweetbay Magnolia)	50	75	100
Malus spp. (Crabapples)	110	150	175
Metasquoia glyptostroboides (Dawn Redwood)	100	150	175
Nyssa sylvatica (Black Gum)	100	150	175
Oxydendron arboreum (Sourwood)	50	60	75
Phellodendron amurense (Armur Corktree)	150	200	250
Platanus acerfolia (London Planetree)	175	200	250
P. Occidentalis (Sycamore)	175	200	250
Prunus cerasifera (Flowering Plum)	50	60	75
P. sargentii (Sargent Cherry)	100	110	125
P. serotina (Black Cherry)	110	150	175
P. serrulata ‘Kwanzan’ (Kwanzan Cherry)	140	200	250
P. subhirtella (Weeping Japanese Cherry)	110	150	175
P. yedoensis (Yoshino Chery	110	150	175
Pyrus calleryana (Callery Pear)			
‘Aristocrat’	150	200	250
‘Autumn Blaze’	150	200	250
‘Bradford’	150	200	250
‘Chanticleer’	100	110	125
‘Redspire’	100	150	175
‘Whitehouse’	100	110	125
Quercus acutissima (Sawtooth Oak)	140	200	250
Q. alba (White Oak)	110	150	175
Q. bicolor (Swamp White Oak)	140	200	250
Q. coccinea (Scarlet Oak)	140	200	250
Q. imbricaria (Shingle Oak	125	150	175
Q. palustris (Pin Oak)	150	200	250
Q. phellos (Willow Oak)	140	200	250
Q. robur ‘Fastigiata” (Columnar English Oak)	110	150	175
Q. rubra (Red Oak)	150	200	250
Sophora japonica (Japanese Pagoda Tree)	110	150	175
Stewartia koreana (Korean Stewartia)	50	60	75
S. ovata (Mountain Stewartia)	50	60	75
S. pseudocamellia (Japanese Stewartia)	50	60	75
Styrax japonicus (Japanese Snowball)	50	60	75
Sytinga reticulata (Japanese Tree Lilac	50	60	75

Tilia americana (American Linden/Basswood)	125	150	175
'Legend'	125	150	175
'Redmond'	125	150	175
T. cordata (Littleleaf Linden)	140	200	250
'Glenleven'	140	200	250
'Greenspire'	140	200	250
Ulmus hollandica 'Groenveldt' (Groenveldt Elm)	150	200	250
U. parvifolia (Lacebark Elm)	140	200	250
Zelkova serrata (Zelkova)	140	200	250

Tree Species	**Projected Tree coverage @ 10 Years (Square Feet)**	
Evergreen Trees	**6' – 8' height when planted**	**8' –10' height when planted**
Cedrus atlantica (Atlas Cedar)	150	200
C. deodora (Deodar Cedar)	100	125
Cryptomeria japonica (Japanese Cryptomeria)	100	125
Cupressocyparis leylandi (Leyland Cypress)	100	125
Magnolia grandiflora (Southern Magnaolia)	175	250
Picea abies (Norway Spruce)	150	175
P. glauca (White Spruce)	100	125
P. pugens (Colorado Blue Spruce)	100	125
Pinus bungeana (Lace Bark Pine)	150	175
P. echinata (Shortleaf Pine)	150	175
P. nigra (Austrian Pine)	150	175
P. rigida (Pitch Pine)	200	250
P. Strobus (White Pine)	200	250
P. sylvestris (Scotch Pine)	200	250
P. taeda (Loblolly Pine)	200	250
P. thunbergiana (Japanese Black Pine)	150	175
Pseudotsuga menziesii (Douglas Fir)	100	125
Tsuga canadensis (Canadian Hemlock)	100	125
T. caroliana (Caroline Hemlock)	100	125

Sources: Henrico County Landscape Manual
Virginia Polytechnic Institute & State University, Hampton Roads Agricultural Experimental Station
Virginia Nurserymen's Association

Adopted 1/7/93

TREES NOT RECOMMENDED FOR USE AS LANDSCAPING

Certain species of trees are less suitable than others in suburban environments due to undesirable characteristics. Although these species may be retained on site in natural setting and may be used to partially satisfy planting requirements, the following species are not recommended for use within the required internal or peripheral landscaping areas:

Acer negundo	box elder
Acer saccharinum	silver maple
Ailanthus altissima	tree of heaven
Albizia julibrissin	mimosa
Betula pendula	white birch
Gingko biloba	gingko (female only)
Maclura pomifera	osage-orange (female only)
Morus species	mulberries
Paulownia tomentosa	empress tree
Populus species	poplars
Salix species	willows
Ulmus Americana	American elm
Ulmus pumila	Siberian elm

Appendix D – Post-Construction Stormwater Management

Hanover County Stormwater Basin
Inspection and Maintenance Requirements
2014

Introduction

Overview

The purpose of this guidance is to provide general information for the inspection and maintenance of both public and private stormwater basins located in Hanover County. This guidance is intended to meet the requirements of Hanover County's Municipal Separate Storm Sewer (MS4) permit with the Department of Environmental Quality (DEQ). Under the provisions of the permit, the County is required to ensure the proper operation and maintenance of stormwater basins.

Publically Owned Stormwater Basin Inspections

Publicly owned and operated stormwater facilities are inspected by the Hanover County Department of Public Works (DPW). Inspections for publicly operated Regional Stormwater Management basins will be performed semi-annually. Inspections for other publicly owned stormwater basins that serve a specific County owned property will be performed annually. Inspections will document the proper operation and structural stability of the facilities and also identify any required maintenance.

Privately Owned Stormwater Basin Inspections

Inspections of privately owned basins are the responsibility of the facility owner or operator. When privately owned stormwater facilities are constructed, a maintenance agreement for the basin is recorded with Hanover County utilizing our standard forms (See Appendix B for historic agreements). All forms require maintenance of the facility to ensure proper working condition. The current Maintenance and Easement Agreement form requires an inspection of stormwater facilities within the first year of operation and at least once every five (5) years thereafter by a "qualified professional".

A qualified professional is an individual holding an appropriate professional certification from the Virginia Department of Professional and Occupational Regulation. Inspection reports certified by a qualified professional are required to be submitted to the County within 30 days of the inspection date. Inspection reports must address the items included on the Private Stormwater Facility Certification Inspection Form for Consultants (Appendix A). If maintenance is required the consultant may identify the required repairs on page 4 of the form. Once the maintenance is completed the consultant will re-inspect the site, and resubmit page 4 of the form certifying that the repairs are complete and that the facility is functioning in accordance with the approved plans. A guidance document titled "Stormwater Facility Inspection Guidance Document" explains the use of the form (Appendix A).

The County maintains a database of all private stormwater facilities in Hanover County that have recorded maintenance agreements. This database includes general information about the facility as well as information about the current inspection status. Inspection records that have been submitted for all private facilities are also maintained by the County.

Basin inspections focus on two critical areas, the condition of the embankment and the condition of the spillways (principal and emergency). Embankment inspections include examining the embankment for signs of erosion, animal trails and burrows, settlement in the top of dam, sink-holes, trees or brush growing on the dam, and seepage.

Spillway inspections include examining the spillways for any obstructions and evaluating the condition of the primary and emergency spillways. Concrete structures will be inspected for cracks, spalling, and breakage. Metal structures will be evaluated for corrosion, misalignment and their general condition.

Alternative Inspection Program

The Stormwater Regulations in 9VAC 25-890 require annual inspections or an alternative inspection program for all stormwater management facilities. Hanover County conducts inspection of all county owned facilities at least annually. The inspections of privately owned basins are the responsibility of the facility owner. Submission of the private facility inspection form to the County for review is recommended and/or required based on the recorded maintenance agreement. The County recommends annual inspections by the facility owner and has created a Private Stormwater Facility Inspection Form for Owners to assist with this responsibility. We have also developed a Stormwater Facility Inspection Guidance Document for Facility Owners to assist in filling out the inspection form by defining terms and structural components of the facility. All of these forms are attached in Appendix A.

Hanover County will notify owners, by mail, of their certification inspection deadline as defined in our database. This notification will occur in a timely fashion as to provide owners adequate time for completion. Once the certification inspections are received the database is updated and an approval letter is generated reflecting the next 3 year inspection due date. When certifications are not received we verify ownership and further measures are taken to contact the facility owner, such as phone calls and/or site visits. The highest priority will be given to structures where public safety is a factor. Subsequent prioritization will be based on regulated structures, quantity facilities that protect downstream features, and quality facilities that drain directly to impaired waters to minimize impacts.

General Maintenance Guidance

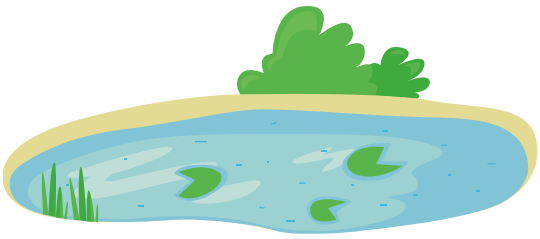
Maintenance for County owned/operated stormwater facilities is performed by the Department of Public Works or by the responsible County Department. Maintenance of private stormwater facilities is the responsibility of the facility owner and must be based on the results of the most recent facility inspection.

Embankments of county owned facilities will be mowed annually to view the structure, with a maximum cut grass height of 6” to 8”. A grass cover will be maintained over the entire embankment for stabilization and it will be free from brush and woody vegetation. All rills, gullies and denuded areas will be backfilled with topsoil, and reseeded. Animal burrows will be backfilled and compacted as well. All trees, woody vegetation, and underbrush will be removed from the embankment. Clearing will extend 10’ beyond the toe of dam and along the edges of the abutment at the discretion of the engineer as property lines and easements permit. Trees and woody vegetation are not allowed on the dam embankment because their root systems may damage the structural integrity of the embankment.

Spillway maintenance includes the removal of obstructions that could potentially limit flow through the principal or secondary spillway, or clog any type of drainage structure. Metal, concrete or plastic structures, pipes, and trash racks will be repaired or replaced, if necessary, so they function in accordance with the approved design. Grass lined emergency spillways will be maintained similar to the basin embankment including repair of erosion and maintenance of the grass.

Privately-Owned Stormwater Basin Inspection Criteria

Supporting Materials



Private BMP Inspection Program Procedures

As required by State and Federal agencies Hanover County Public Works maintains a database of private BMP facilities that have recorded maintenance agreements located within the County. Most of these agreements require the stormwater facilities to be inspected every five years by a Qualified Professional. All maintenance agreements require the property owner to keep the facility functioning in accordance with the approved plans. The steps in our program for monitoring and enforcing maintenance of the facilities are described below.

New Facilities:

1. When a plan is approved proposing a BMP, the plan review engineer shall notify the stormwater engineer via e-mail with the plan name and/or numbers. A hard copy of the owner's letter recommending plan approval will be forwarded to the stormwater engineer to create the basin file. **(to be completed by plan review engineer)**

2. The stormwater engineer creates a basin file that includes: the project information tracking (PIT) sheet, a copy of the recorded maintenance agreement (on left side of file), a copy of the plan sections showing the grading, cross section, and details of the facility, and any pertinent calculations or summary charts such as the pre versus post-development flows and/or water quality calculations or VRRM spreadsheets.

   - The stormwater engineer shall create a GIS BMP datasheet for future entry into the GIS system and place it in the basin file (on the left side). **(to be completed by BMP engineer)**

3. The stormwater engineer adds it to the private BMP database on tab "Proposed BMPs (new)" found on the S:\ drive at the following link:

   ..\Hanover County BMP Inventory List 2015 Active DB - Update 5-yr.xlsx

   (to be completed by BMP engineer)

4. For subdivisions prior to recommending acceptance of the roads into the VDOT system the plan review engineer shall request a Certification Inspection and construction record drawing of the facility. Once it is received the project information will be moved from the "Proposed BMP's (new)" tab of the Private BMP Inspection spreadsheet to the "Private Basin Master Sheet" tab and various filtered tabs as appropriate. The 5 year inspection due date shall be entered as 5 years from the first certification inspection in the spreadsheet. **(Subdivision certification request completed by plan review engineer, database work completed by BMP engineer)**

5. For site plans, at the E&S bond release the project will be moved from the "Proposed BMPs (new)" tab of the Private BMP Inspection spreadsheet to the "Private Basin Master Sheet" tab and various filtered tabs as appropriate. Prior to E&S bond release a professional certification and construction record drawing shall be provided to the plan review engineer. **(Site plan certification request completed by plan review engineer, database work completed by BMP engineer)**

Existing Facilities:

1. Public Works will send Certification Inspection request letters to the private owner at the beginning of the month of the 5 year due date (i.e. if the inspection due date is April 21, a letter will be sent on the first business day of April). There are two types of sites, properties with an approved inspection that are in compliance, and properties that require maintenance and did not follow-up and are in non-compliance. The template letter can be found on the S:\ drive at the following link:

   S:\Stormwater Basins\Forms\Certification Request Forms\BasinAP3YrCertReq2011.docx

   for sites in compliance and

   S:\Stormwater Basins\Forms\Certification Request Forms\BasinMaint3YrCertReq2011.docx

   for sites in non-compliance. **(to be completed by BMP engineer)**

2. For properties that submit a Certification Inspection by a "Qualified Professional" the database shall be updated to reflect the "Last Inspection Date" as what was listed on the Certification Statement of the Stormwater Facility Inspection Form. A template letter will be sent out saying that we have received and approved the certification and sets the next required Qualified Professional certification inspection date 5 years from the date of the inspection. The template letter can be found on the S:\ drive at the following link:

   S:\Stormwater Basins\Forms\Certification Request Forms\BasinPECertAP 2011.docx

3. For properties that submit a Certification Inspection by a "Qualified Professional" with required maintenance listed on the fourth page of the Inspection Form, a letter will be sent asking for a schedule for repairs, or enforcement action will proceed. The template letter can be found on the S:\ drive at the following link:

S:\Stormwater Basins\Forms\Certification Request Forms\BasinMaintRepairsSchedReq2011.docx

   The Comment area on the database will reflect the date of the report and note that repairs were required. Once the maintenance is complete the professional shall perform a site inspection, as deemed necessary, and sign sheet 4 of the inspection form that certifies that all repairs are complete and in conformance with the plans. At that time the "Last Inspection" date field in the Private BMP Inventory List will be updated with the maintenance completion date and the new inspection due date projected 5 years out.

   (to be completed by BMP engineer)

4. For non-compliant properties that require maintenance, if there is no response to the initial letter or the request for a maintenance schedule a second letter shall be sent out via certified and First Class Mail using the following template:

   S:\Stormwater Basins\Forms\Certification Request Forms\Basin3YrCert2NDReq2011.docx

   The package shall include copies of the original letter, recorded maintenance agreement, and pertinent plan sections.

   (to be completed by BMP engineer)

Private Stormwater Facility Certification Inspection Form for Consultants

Hanover County

GENERAL INFORMATION

Facility Information

Facility Name	GPIN	Basin Type
Latitude (N)	Longitude (W)	Watershed

Professional's Information

Name & Address	Phone	Professional's Seal
	Fax	
I certify that I am a qualified licensed professional in the Commonwealth of Virginia and that to the best of my knowledge, having completed an inspection, the facility referenced below is in conformance with the approved plans titled _____ and dated _____. except as noted.		
(signature) (date)		

Owner's Information

Name & Address	Phone
	Fax

FACILITY CONDITIONS

ITEM	YES	NO	N/A	REMARKS
1. General Dam Condition				
A. Any alterations to dam?				
B. Inadequate grass cover?				
C. Settlements, irregularities or cracks?				
D. Recent high water marks?				
2. Upstream Impoundment Slope				
A. Erosion?				
B. Trees?				
C. Rodent holes?				
D. Cracks, settlements or bulges?				
E. Inadequate or displaced riprap?				

ITEM	YES	NO	N/A	REMARKS
3. Downstream Impoundment Slope				
A. Erosion?				
B. Trees?				
C. Rodent holes?				
D. Cracks, settlements or bulges?				
E. Drains or wells flowing?				
F. Seepage or boils?				
4. Abutment Contact				
A. Erosion, cracks or slides?				
B. Seepage?				
5. Control Structure				Type & Size:
Concrete _____ Metal _____ Other Material _____				
A. Spalling, Cracking or Scaling?				
B. Exposed reinforcement?				
C. Corrosion present?				
D. Misalignment?				
E. Leakage?				
F. Trash rack damaged (or inadequate)?				
G. Obstacles to inlet?				
H. Drawdown inoperative?				Open _____ Closed_____
6. Outlet Structure (Principal Spillway or Barrel Pipe)				Type & Size:
Concrete _____ Metal _____ Other Material _____				
A. Spalling, cracking or scaling?				
B. Exposed reinforcement?				
C. Joints displaced or offset?				
D. Leakage?				
E. Conduit misaligned?				

ITEM	YES	NO	N/A	REMARKS
7. Emergency Spillway (Earthen) ?				
Lining: Grass _____ Riprap _____ Other Material _____				
A. Obstructions?				
B. Erosion?				
C. Rodent holes?				
D. Inadequate or displaced riprap?				
8. Emergency Spillway (Concrete) ?				
A. Spalling, cracking or scaling?				
B. Exposed reinforcement?				
C. Joints displaced or offset?				
D. Leakage?				
9. Outlet Channel & Protection				
A. Inadequate/displaced outlet protection?				
B. Outlet protection impaired?				
C. Outlet protection contains debris?				
D. Outlet channel erosion?				
E. Outlet channel obstruction?				
10. Forebay?				
A. Excessive sediment accumulation?				
B. Unstable/eroding overflow into basin?				
11. Aquatic Landscaping?				
A. Needs maintenance to match the design?				
12. Basin Area				
A. Erosion?				
B. Rodent holes?				
C. Inadequate grass cover?				
D. Inflow obstructions?				
E. Excessive sediment accumulation?				
F. Floating or accumulated debris?				
G. Recent high water marks?				
H. Obstructions to storage volume?				

Project/Facility Name:	Project # (SPR#, E&S#, or GPIN):

RECOMMENDED MAINTENANCE

I certify that all recommended maintenance is complete and the facility is generally consistent with the approved plans titled .

Professional's Signature Date

Please fax and/or mail this form to:

Hanover County Department of Public Works, P.O. Box 470, Hanover, VA 23069

Phone: (804)-365-6181 Fax: (804)-365-6233

Private Stormwater Facility Inspection Form
for Owners
Hanover County
GENERAL INFORMATION
Facility Information

Plan Name		GPIN #
Associated Plan # (SPR #, E&S#)	Plan AP date	Basin Type
Latitude (N)	Longitude (W)	HUC Code

Owner's Information

Name & Address	Phone
	Fax

FACILITY CONDITIONS

ITEM	YES	NO	N/A	REMARKS
1. General Dam Condition				
A. Any alterations to the dam?				
B. Inadequate Vegetated cover?				
C. Settlements, irregularities, or cracks?				
D. Recent high water marks?				
2. Upstream Impoundment Slope				
A. Erosion?				
B. Trees?				
C. Rodent holes?				
D. Cracks, settlements or bulges?				
E. Inadequate or displaced riprap?				
3. Downstream Impoundment Slope				
A. Erosion?				
B. Trees?				
C. Rodent holes?				
D. Cracks, settlements, or bulges?				
E. Drains or wells flowing?				
F. Seepage or boils?				
4. Abutment Contact				
A. Erosion, cracks, or slides?				
B. Seepage?				

ITEM	YES	NO	N/A	REMARKS
5. Control Structure				Type & Size:
Concrete _____ Metal _____ Other Material _____				
A. Spalling, Cracking, Scaling?				
B. Exposed reinforcement?				
C. Corrosion present?				
D. Misalignment?				
E. Leakage?				
F. Trash rack damaged (or inadequate)?				
G. Obstacles to inlet?				
H. Drawdown inoperative?				Open _____ Closed_____
6. Outlet Structure (Principal Spillway or Barrel Pipe)				Type & Size:
Concrete _____ Metal _____ Other Material _____				
A. Spalling, cracking, scaling?				
B. Exposed reinforcement?				
C. Joints displaced or offset?				
D. Leakage?				
E. Outlet misaligned?				
7. Emergency Spillway (Earthen) ?				
Lining: Grass _____ Riprap _____ Other Material _____				
A. Obstructions?				
B. Erosion?				
C. Rodent holes?				
D. Inadequate or displaced riprap?				
8. Emergency Spillway (Concrete) ?				
A. Spalling, cracking, scaling?				
B. Exposed reinforcement?				
C. Joints displaced or offset?				
D. Leakage?				
9. Outlet Channel & Protection				
A. Inadequate/displaced outlet protection?				
B. Outlet protection impaired?				
C. Outlet Protection contains debris?				
D. Outlet channel erosion?				
E. Outlet channel obstruction?				

ITEM	YES	NO	N/A	REMARKS
10. Sediment Forebay ?				
A. Excessive sediment accumulation?				
B. Unstable/eroding overflow into basin?				
11. Aquatic Landscaping ?				
A. Needs maintenance to match the design?				
12. Basin Area				
A. Erosion?				
B. Rodent holes?				
C. Inadequate Vegetated cover?				
D. Inflow obstructions?				
E. Excessive sediment accumulation?				
F. Floating or accumulated debris?				
G. Recent high water marks?				
H. Obstructions to storage volume?				

Project/Facility Name:	Project # (SPR#, E&S#, or GPIN#):

Recommended Maintenance:

I certify that all recommended maintenance is complete and the facility is generally consistent with the approved plans.

Owner's Signature Date

If you have questions please contact:

Hanover County Department of Public Works, P.O. Box 470, Hanover, VA 23069

Phone: (804)-365-6181 Fax: (804)-365-6233

Stormwater Facility Inspection Guidance Document For Facility Owners

This is a supplement to the Stormwater Facility Inspection Form developed by Hanover County. This document defines and clarifies the intent of each section on the Inspection Form. Many of the items being inspected appear multiple times on the form but under different headings. To simplify we have included a definitions section for repeated items at the end of this document.

General Information

Facility Information:

"Facility Name" should be the project name from the plans on which the facility was originally approved.

"GPIN #" should be the GPIN or GPINs of the parcel(s) on which the facility is currently located. This is a 10 digit number unique for each property, and is available online from the county's GIS site at: http://www.hanovercountygis.org/cdnr/ and is also shown on tax bills.

"Basin Type" is the type of facility, e.g. Extended Detention, Bioretention Basin, etc., and should be taken from the original approved plans when available. If this information is not on the approved plans it should be determined using professional judgment.

"Latitude (N)" is the GPS latitude reading of the top of the dam at or above the principal spillway.

"Longitude (W)" is the GPS longitude reading at the top of the dam at or above the principal spillway.

"Watershed" is the Virginia's 6th Order Hydraulic Unit Code that the facility is located in, e.g. YO27, which represents the watershed area. The HUC codes are available from maps maintained by the Department of Public Works or on Hanover County's website at the following link: http://www.co.hanover.va.us/works/envirmnt_ImpairedStrmsImpactMap.pdf

Owner's Information:

"Name and Address" Please provide the name and address information of the Owner of the facility or the entity responsible for maintenance of the facility.

"Phone" Please provide the phone number for the Owner of the facility or the entity responsible for maintenance of the facility.

"Fax" Please provide the fax number for the Owner of the facility or the entity responsible for maintenance of the facility.

Facility Conditions

This part of the form is designed so that individual components of the stormwater facility are inspected for specific issues. Each numbered heading is a different component of the facility. The lettered items list the issues specific to that component of the facility to inspect for. Facilities will not have all components listed. If a facility does not have a component listed, enter N/A in the remarks section of the Inspection Form for that component.

1. **General Dam Condition:** The general conditions section examines the dam as a whole. "Any Alterations to the dam" refers to any changes in the dam surface, such as grading, the addition of structures, sidewalks, flag poles and the like. Anything different or added since the last inspection should be noted here and needs to be removed if it interferes with the operation of the facility or creates additional hazards. Items B through D are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

2. **Upstream Impoundment Slope:** This section focuses on the face of the dam, which is the side that interacts with the water level. Items A through D are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

3. **Downstream Impoundment Slope:** This section focuses on the back of the dam, from the top to the bottom where the embankment meets the natural grades (called the "toe" of the slope) and slightly beyond. "Drains or wells flowing" typically refers to small plastic pipes that will direct water from problem areas to a viable outlet, such as an end wall or riprap section. They are usually present under concrete structures like large spillways and pipes that have stone bedding. Rather than letting the drainage travel through the stone below the structure and potentially erode it, it is directed into a drain and piped to a controlled location. Flow from these pipes is a good indicator of the saturation level in the dam and basin. "Seepage or boils" are springs that pop up out of the soil and actively flow and churn away embankment material. Other items are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

4. **Abutment Contact:** The abutment contacts are where the ends (left and right) of the earthen dam structure meet the natural ground. Check this area for visible signs of slides where larger amounts of material slough off or move down a slope, usually due to differences in soil conditions or materials. Other items are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

5. **Control Structure:** The control structure is the outlet structure that normally controls the flow of stormwater through the facility. It can take many forms. Two of the most typical types of control structures are a metal or concrete riser with a barrel pipe though the dam, or a concrete weir structure that the water flows over. Check the appropriate material type for the outlet control structure and note the type and size of the control structure in the remarks area. "Trash rack damaged (or inadequate)" refers to the structure that prevents debris and trash from entering the control structure and blocking flow. Cleaning trash racks should be a part of frequent and routine maintenance to ensure the facility functions properly. "Obstacles to inlet" are anything that would slow or block the flow of water entering the control structure, such as excessive vegetation, debris, or trash. "Drawdown inoperative" refers to a mechanism that controls which outlet is operational, and is only present on some facilities. If present, check to see that the drawdown mechanism is functional. If it is rarely used it can become immobile.

Other items are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

6. **Outlet Structure (Principal Spillway or Barrel Pipe):** The outlet structure is the part of the facility that conveys drainage from the control structure to an outlet beyond the back of dam. Check the appropriate material type for the outlet structure and note the type and size of the outlet structure in the remarks area. For "Outlet Misaligned" check to see that the outlet structure properly functions and is not leaking because the sections don't line up properly. Other items are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

7. **Emergency Spillway (Earthen):** An emergency spillway is a channel that conveys stormwater during large storm events from the basin to an outlet located at the toe of the embankment. It prevents the dam from overtopping during the design storm event. Not all facilities have an emergency spillway. Earthen spillways include channels that are not concrete lined which can be lined with grass, rip-rap or erosion control fabric. If the facility's emergency spillway is earthen, this section of the inspection form should be utilized, if not please mark "NA" and proceed to #8 on the form. Identify the lining type for the spillway as discussed above. Items A through D are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

8. **Emergency Spillway (Concrete):** An emergency spillway is a channel that conveys stormwater from large storm events from the basin to an outlet located at the toe of the embankment. It prevents the dam from overtopping during the design storm event. Not all facilities have an emergency spillway. If the facility's emergency spillway is concrete lined this section of the inspection form should be utilized, if not please mark "NA" and proceed down the form. Items A through D are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

9. **Outlet Protection:** The outlet channel is the receiving channel for the discharge from the stormwater facility. Outlet protection is a non-erodible rough surfaced material, usually riprap, designed to control erosion in the outlet channel by slowing the outflow. Impaired outlet protection refers to riprap that is not properly functioning. This can be caused by various issues such as the riprap surface being filled in with sediment or vegetation that smoothes out the impact surface or if the outflow drainage bypasses the outlet protection altogether. If the outlet protection is missing or damaged, then erosion of the outlet channel can occur. Debris that collects in the outlet protection should be cleaned out as a part of periodic routine maintenance. Items A through E are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

10. **Forebay:** A sediment forebay is a marshy shallow area constructed at the inflow point to the basin to increase the sediment trapping efficiency of the facility or to facilitate the routine removal of sediment from the facility. Because this area will accumulate sediment faster than the basin itself, it requires regular maintenance to ensure proper functioning. The forebay will have an overflow section on the outlet side to direct stormwater flows into the main area of the basin. Inspect the overflow area for erosion routinely.

11. **Aquatic Landscaping:** Root systems of plants store nitrogen and phosphorus, so adding them to a BMP design increases the pollutant removal efficiency of the facility. Typically they would be present on an

aquatic bench around the perimeter of the pond or in the sediment forebay. Verify that the correct number and type of plants are present per the design on the plans.

12. **Basin Area:** This section pertains to all areas of the basin not addressed in the sections above. "Inflow obstructions" refer to the structures routing water into the basin from off-site drainage areas. Examples of inflow obstructions are sediment or vegetative growth in pipes, end sections, or riprap outlet protection as drainage enters the basin. "Obstructions to storage volume" are things that take up the required storage space in the basin needed during storm events. Obstructions to storage volume can be excessive growth in the bottom of the basin, or sediment build up, as compared to the elevations on the design plans. For example if the cattails have grown so thick their root mat is flush with the orifice hole, but the plans show 1' of storage below the orifice hole then they are an obstruction to volume, because the 1' of designed storage volume is not available to hold runoff. Verify that the vegetation was part of the design, in which case it may need thinning, and if not removal may be appropriate. Other items are defined in the definitions section. If the answer is "Yes" to any item, make an appropriate note in the remarks area explaining the observation(s).

Recommended Maintenance

The purpose of this section is to list any maintenance items that should be addressed for the facility to properly function in accordance with the plans. The inspection form should be filled out with maintenance items listed here, and submitted to Hanover County unsigned at the bottom. Once the maintenance items are complete, the consultant engineer should inspect the repairs, and if appropriate sign and date the certification on the bottom of page 4 of the inspection form. The signed page 4 should be submitted to the County.

Timing for the next inspection begins from the date the professional engineer certifies that the basin is functioning according to approved plans, or that the required repairs are complete. Typically certifications are due every three years, please see your recorded Maintenance Agreement for more information.

Definitions

Adequate Vegetated Cover: is a well established vegetated cover which minimizes the potential for erosion.

Bulges: are swollen areas that are indicative of material eroding or moving inside the dam.

Corrosion: is the decomposition of metal, and presents as rust that decreases the functional area of the structure. Most metal structures have a protective coating to prevent corrosion, but if metal is in contact with water chemical decay is unavoidable.

Crack: a split in the surface that creates a void. It can be as small as a hairline crack or large enough to see into the void below/beyond the original surface. Cracks may represent a weakness in the material and create a pathway for water and other unwanted materials to enter or exit the structure.

Erosion: is the wearing away of the land surface by water, wind, or ice. The best defense against erosion is stabilization with vegetation because the root structure holds the soil in place and the plant structure above ground slows down the flows.

High water marks: are visible indicators of high water levels once the pool has receded back to the normal elevation. Lines of debris may be visible along the face of the dam or in a spillway indicating how high the water rose during a storm event and how the facility performed.

Inlet: is the entrance or opening of a drainage structure.

Joints: are the interfaces where two pipes or sections of channel meet. If these structures are not properly connected they are prone to leaks or separation in this area.

Leakage: is flow improperly leaving a drainage structure, such as through a crack or unsealed joint in the pipe.

Misalignment/Irregularities: describes changes in the topographic surface of a structure.

Obstacles and Obstructions: are any type of blockage to the flow, usually caused by debris accumulating.

Outlet Channel: is the receiving channel where the basin discharges, natural or manmade.

Reinforcement: is the steel added to concrete for additional strength, usually as round bars or grid wire.

Riprap: is large rocks used to slow flows and prevent erosion. Riprap classes (e.g. Class I, Class II), are differentiated by size and weight. The size and footprint dimensions of the riprap in a given application will typically be shown on the design plans. If the placement details are not provided on the approved plans, riprap should be designed and repaired based on the requirements of the 1992 Virginia Erosion and Sediment Control Handbook (VESCH). If the riprap is displaced then the class of stone and/or footprint size is inadequate for the flows it is receiving.

Rodent Holes: are typically from beavers or muskrats and can usually be found along the waterline by walking and feeling for soft areas (burrows) or visually inspecting for fresh displaced soil. Their burrows can be quite extensive and create large voids in the dam. To repair we recommend backfilling with a non-erodible material such as concrete or grout.

Scaling: is when metal flakes off a metal surface.

Sediment accumulation or sedimentation: is the accumulation of silt in the bottom of a facility, which can impact the storage volume. While some sediment accumulation over time is expected, excessive sedimentation occurs from lack of maintenance or inadequate stabilization of upstream areas and must be removed for the facility to properly function.

Seepage: can present as a trickle flow out of the back of the dam, or more simply as an isolated area that remains wet. It is indicative of water finding a path through the dam. Seepage should be monitored to make sure dam material is not being lost. Seepage typically presents low on the back of the dam, well below the normal pool level.

Settlement: Soil can become more consolidated in response to weather conditions or its own weight over time. Settlement is a change in the vertical surface of dam, and can be isolated to one area or to the dam as a whole.

Spalling: is when concrete material flakes off a concrete surface.

Storage Volume: is the amount of water that the facility was designed to hold. If the bottom of the facility has filled in with sediment or extremely dense vegetation the storage volume may be reduced and the facility would not meet applicable design requirements. Most facilities are designed to hold a certain amount of drainage over a defined time period to achieve the outflow goals or nutrient removal.

Trees: are a type of woody vegetation with a more significant root structure than grass. Trees and other woody vegetation should never be present on dams because the root structure weakens the embankment. Additionally

the roots can die off and create a cavity in the dam and go unnoticed for years until it becomes a significant hazard.

Individual Residential Lot Special Criteria

(Minimum Control Measure 5)

As stated in Hanover Ordinance 13-12 Article V section 10-86, Long Term Maintenance of Permanent Stormwater Facilities, at the discretion of the Director, a recorded maintenance agreement need not be required for stormwater management facilities designed to treat stormwater runoff primarily from an individual residential lot on which they are located, provided it is demonstrated to the satisfaction of the Director that future maintenance of such facilities will be addressed through an enforceable mechanism at the discretion of the Director.

For individual residential lots, we intend to ensure long term care and maintenance through the use of a maintenance agreement, or with the combination of a drainage easement and a maintenance agreement.

Supporting Materials

Individual Residential Lot Special Criteria

Maintenance Agreement

The County's current maintenance agreement is recorded with the developer as the owner and obligates future owners under the agreement.

The Agreement:

- Requires proper installation operation and maintenance of the facilities
- Obligates 5 year inspection and certification of the BMP
- Provides access across land to the BMP from public ROW
- Allows for County access and maintenance if the facilities are not maintained properly

BMPs are placed in common area or within a drainage easement.

Individual Residential Lot Special Criteria

As stated in Hanover Ordinance 13-12 Article V section 10-86, Long Term Maintenance of Permanent Stormwater Facilities, at the discretion of the Director, a recorded maintenance agreement need not be required for stormwater management facilities designed to treat stormwater runoff primarily from an individual residential lot on which they are located, provided it is demonstrated to the satisfaction of the Director that future maintenance of such facilities will be addressed through an enforceable mechanism at the discretion of the Director.

For individual residential lots, we intend to ensure long term care and maintenance through the use of a maintenance agreement, or with the combination of a drainage easement and a maintenance agreement.

The subdivision plan will identify the individual lot BMPs and provide the location and type of each of the BMPs within the subdivision. The maintenance agreement will be recorded identifying the BMPs on the plan as being subject to the agreement in the same way these agreements are recorded currently.

BMPs include, but are not limited to the following:

Non-proprietary BMPs

1. Vegetated Roof (Version 2.3, March 1, 2011);
2. Rooftop Disconnection (Version 1.9, March 1, 2011);
3. Rainwater Harvesting (Version 1.9.5, March 1, 2011);
4. Soil Amendments (Version 1.8, March 1, 2011);
5. Permeable Pavement (Version 1.8, March 1, 2011);
6. Grass Channel (Version 1.9, March 1, 2011);
7. Bioretention (Version 1.9, March 1, 2011);
8. Infiltration (Version 1.9, March 1, 2011);
9. Dry Swale (Version 1.9, March 1, 2011);
10. Wet Swale (Version 1.9, March 1, 2011);
11. Sheet Flow to Filter/Open Space (Version 1.9, March 1, 2011);
12. Extended Detention Pond (Version 1.9, March 1, 2011);
13. Filtering Practice (Version 1.8, March 1, 2011);

14. Constructed Wetland (Version 1.9, March 1, 2011); and
15. Wet Pond (Version 1.9, March 1, 2011).

Proprietary BMPs are of two types

1. Curb inlet systems
2. Box filtration/wetland systems

BMP Locations:

- Common Areas
- Individual Lots
- Multiple individual lots
- Multiple individual lots and in common areas

<u>All Question are for individual BMPs on residential lots:</u>

**Should a drainage easement accompany these BMPs or will a maintenance agreement referencing the subdivision plan be sufficient?

**When the subdivision plat is prepared do the BMPs need to be reflected on the plat?

**Should the subdivision plat identify the Maintenance Agreement for the BMPs and the plan associated with the maintenance agreement to close the loop? Currently the maintenance agreement and the drainage easements are referenced on the subdivision plat by number.

Who is responsible for BMP inspections and reports to the County as required by the maintenance agreement?

- The Subdivision or HOA
- The individual lot owner
- HOA and individual lot owner

Through the maintenance agreement, it appears we have access to BMPs across all lots within the subdivision from the public ROW to the BMP. Is this correct?

Scenario 1 – BMP controlled exclusively by individual

Example: Rooftop disconnection, permeable pavement on driveway, rainwater harvesting

An individual disconnects a BMP on his lot such that it is non-functional. To enforce the maintenance agreement do we approach the individual or the HOA.

Scenario 2 – BMP impacted by individual

Example: Grass channel through multiple lots, bioretention on multiple lots.

An individual interferes with the functionality of a BMP

Prepared by Hanover County

GPIN(S): _____ **Consideration: $0**

MAINTENANCE AGREEMENT
FOR DRAINAGE AND STORMWATER MANAGEMENT FACILITIES

THIS MAINTENANCE AGREEMENT (this "Agreement") is entered into as of _____ 20___, by _____, owner of the property which is the subject of this Agreement, for itself and its successors in title, including purchasers of subdivided lots or parcels, (the "Owner") and **HANOVER COUNTY**, a political subdivision of the Commonwealth of Virginia (the "County").

RECITALS

1. _____ is the Owner of the _____ acre parcel of land located in Hanover County, Virginia, designated GPIN _____ in the County's tax records, having acquired the property by deed recorded in the Hanover County Circuit Court Clerk's Office in Deed Book _____ page _____ (the " Property"), and

2. A drainage or stormwater management plan prepared by _____ dated _____, 20___ , titled _____" (all components and pages of which shall herein be termed the "Plan") has been approved by the County; and

3. The Plan provides for permanent drainage, stormwater management, best management practices, erosion and sediment control facilities or other techniques designed to manage the quality and quantity of stormwater runoff (collectively herein termed the "Facilities"); and

4. Pursuant to the Federal Clean Water Act, the Virginia Chesapeake Bay Preservation Act, Erosion and Sediment Control Law, the Stormwater Management Act, and regulations adopted

by the Environmental Protection Agency, the Soil and Water Conservation Board, the State Water Control Board and Department of Environmental Quality, as they may be amended or superseded from time to time, or supplemented by additional regulation or legislation, as applicable, the County requires that the Facilities as shown on the Plan be constructed, operated, and adequately maintained by the Owner, whether located on the Property or elsewhere. Throughout this Agreement, maintenance of the Facilities includes repair and replacement, as necessary to meet the requirements of the Plan.

In consideration of the requirements of state and federal law and the approval of site or subdivision plans sought by the Owner, the parties agree as follows:

AGREEMENT

The Owner warrants that it is the owner of fee simple title to the Property and that there are no exceptions or restrictions which would interfere with or adversely affect the County's rights pursuant to this Agreement, or which would adversely affect the Owner's authority to enter into this Agreement.

The parties further agree as follows:

1. The Owner shall ensure the proper construction, operation, and maintenance of the Facilities depicted on the Plan and submit a construction record drawing for the Facilities to the County upon completion and prior to release of any surety and termination of any temporary permit. The construction record drawing shall be appropriately sealed and signed by a professional registered in the Commonwealth of Virginia, certifying that the Facilities have been constructed in accordance with the Plan.

2. The Owner shall maintain the Facilities depicted on the Plan as needed to ensure that the Facilities, are and remain in proper working condition in accordance with the Plan, including any associated maintenance plans or instructions and with applicable design standards and applicable

laws. The Owner shall also perform any maintenance and other actions identified in the periodic inspection reports required in Paragraph 3(b).

3. The Owner shall cause inspections of the Facilities to be conducted as follows:

a. The Owner agrees to cause inspections of the Facilities to be conducted by a person licensed as a professional engineer, architect, landscape architect, or land surveyor pursuant to Article I (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia; a person who works under the direction and oversight of the licensed professional engineer, architect, landscape architect, or land surveyor; or a person who holds an appropriate certificate of competence from the State of Virginia. ("the Inspector"). The Inspector shall be retained by the Owner at the Owner's expense. Inspections shall take place at least once every five (5) years after completion of the Facilities.

b. The Owner shall submit a written inspection report to the County within thirty (30) days after completion of each such inspection. . The inspection shall be in a form consistent with the standards of practice for inspecting similar stormwater facilities, and shall include, at a minimum:

i. The date of inspection;

ii. The name, address and professional classification of the Inspector;

iii. The condition of vegetation, fences, spillways (principal and emergency), embankments, reservoir areas, inlet and outlet channels, underground drainage structures, sediment loads, gates and valves, and any other item that could affect the proper functioning of the Facilities and conformance to the Plan; and

iv. A description of all maintenance or other actions that the Inspector deems necessary in order to ensure that the Facilities continue to function in accordance with the Plan and applicable laws.

4. The Owner conveys to the County and other appropriate governmental parties a Right of Access over the Property from public rights-of-way to the Facilities as shown on the Plan or as reasonably necessary for the purpose of ensuring the proper construction, operation and maintenance of the Facilities.

5. If the Owner fails to conduct and report the required inspections, the inspections are incomplete or improper, or the Owner fails to properly maintain the Facilities, the County may take enforcement actions pursuant to this Agreement and as provided for by County ordinances and state statutes and regulations.

6. After a judgment adverse to the Owner in any criminal or civil proceeding arising from an alleged failure to construct, operate and maintain the Facilities in accordance with the Plan or comply with this Agreement, if the Owner fails to correct the conditions demonstrated by the County in the legal proceeding within 30 days after entry of judgment, the County may enter onto the Property and take all measures reasonably necessary to bring the Facilities into compliance with the provisions of the Plan. Promptly after entry of a judgment adverse to the Owner, the County will provide notice to the Owner of the availability of this remedy.

7. In the event of an emergency in which there is imminent danger that the condition of the Facilities may permit or cause a public nuisance or unreasonable degradation of other properties, water quality, stream channels and other natural resources, as determined by the Director of Public Works, designee or other County employee, who shall be a licensed professional engineer, the County, its employees or agents, at its option, may enter immediately upon the Property or other properties where Facilities are located and take whatever steps it reasonably

determines to be necessary to correct or ameliorate the conditions causing the emergency. To the extent reasonable under the circumstances, the County shall provide the Owner with notice and an opportunity to correct the conditions. "Public nuisance" and "unreasonable degradation of other properties" shall include, but are not limited to, infestation of mosquitoes or vermin, foul odors, accumulation of debris, excessive growth of vegetation not specified in the Plan and which presents a threat to public health, flooding or imminent threat of flooding, ponding of water or erosion caused by failure to maintain the Facilities in accordance with the Plan.

7. The Owner shall not be entitled to compensation from the County for the use or occupancy of the property during the exercise of the County's Right Of Access onto the Property for the purposes identified in this Agreement.

8. In the event that, pursuant to this Agreement, County performs work or expends any funds reasonably necessary for the maintenance, repair or replacement of the Facilities, necessitated by the unmaintained, non-compliant, or otherwise defective condition of the Facilities, including labor, equipment, supplies and materials, the Owner shall reimburse the County within thirty (30) days after Owner's receipt of written notice of such expenditures from the County.

9. In the event the Owner disputes the assessment of costs incurred by the County pursuant to this Agreement, the Owner may appeal the amount of the assessed costs to the County Administrator by filing written notice of appeal within fourteen (14) days of the date of notice of the assessment. The County Administrator shall consider the appeal by the Owner promptly and shall provide the Owner with reasonable notice and an opportunity to be heard and no amounts shall be due during the pendency of the appeal to the County Administrator. The assessed costs, less any adjustments, shall be due and payable within thirty (30) days after the decision of the County Administrator which shall be in writing and dated. The assessment of costs under this

Agreement may be challenged pursuant to the provisions of the Code of Virginia governing the submission of claims against counties, Va. Code Section 15.2-1243, et seq., as they may be amended from time to time, but the pendency of a judicial challenge to the decision of the County Administrator shall not postpone the date that payment of assessed costs is due.

10. Any amounts owed by the Owner to the County and not paid within thirty (30) days after receipt of such notification of amounts due, or within thirty (30) days of the date of the County Administrator's decision on appeal shall be the obligation of the Owner. Upon recordation of a memorandum of lien, the full amount owed to the County by the Owner pursuant to this Agreement shall be a lien on the Property that runs with the land and an obligation of the Owner, and all successors or assigns, jointly and severally, as of the date of such recordation. In addition, the County may pursue any legal remedies for enforcement of the lien and collection of the amount owed.

11. Notice required by this Agreement shall be effective if given by certified mail to the Owner at the address listed in the County's tax records, unless the Owner has specifically requested in writing that notice be sent to a different address. Any notice to the County shall be given to the County Administrator, P. O. Box 470, Hanover, Virginia 23069-0470.

12. The responsibilities and obligations of the Owner shall constitute a covenant running with the land, and shall be binding upon all subsequent owners, their administrators, executors, assigns, heirs and any other successors in interest so long as they own the Property or any portion thereof served by the Facilities. Notwithstanding the foregoing, it is understood and agreed that any liability arising during the period of time when any such Owner owns the Property, or any portion thereof, shall remain a personal liability of such Owner

13. In no event shall any provision of this Agreement be interpreted to place any obligations upon the County, its officials, employees or agents, except as specifically described in this

Agreement. In no event shall any provision of this Agreement be interpreted to modify or waive the requirements of any federal, state or local law or regulation or the terms of any other agreements between the parties. This Agreement does not modify the statutory or common law duties of County officials, employees or agents in implementing the County's rights under this Agreement.

14. The laws of the Commonwealth of Virginia shall govern the construction of this Agreement and all claims and actions related to this Agreement shall be filed in the Hanover County General District Court or the Hanover County Circuit Court.

15. Words importing the singular number shall include the plural number and vice versa.

16. This Agreement shall be recorded among the land records in the Clerk's Office of the Hanover County Circuit Court.

[Signatures on Following Page]

The signatures and seals of the parties or of their authorized representatives are set out below in acknowledgment of this Agreement.

OWNER

_____,

By: _____ (SEAL)
Name: _____
Title: _____

CITY/COUNTY OF _____,
STATE/ COMMONWEALTH OF_____,

The foregoing instrument was acknowledged before me _____, 20___, by _____, _____ {title}, on behalf of _____, Owner.

My commission expires: _____
Notary registration number: _____

_____
Notary Public

Approved as to substance:

_____
Name: J. Michael Flagg, P.E.
Director of Public Works

HANOVER COUNTY, a political subdivision of the Commonwealth of Virginia,

Date: _____ By: _____ (SEAL)
Name:
Deputy County Administrator

COUNTY OF HANOVER,
COMMONWEALTH OF VIRGINIA,

The foregoing instrument was acknowledged before me _____, 20___, by _____, Deputy County Administrator, on behalf of Hanover County, a political subdivision of the Commonwealth of Virginia.

My commission expires: _____
Notary registration number: _____

_____
Notary Public

Appendix E – Pollution Prevention/Good Housekeeping

Training Schedule and Program

(Minimum Control Measure 6)

Employee Training Requirements

The County's MS4 permit is required to include a training component with the goal of preventing or reducing pollutant runoff from municipal operations including such activities as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. The County's training will review the County's established policies for responding to illicit discharge, materials management, vehicle washing, construction management, and new policies required in Section II B 6 a of the MS4 General Permit (e.g. parking lot and equipment maintenance, fertilizer application etc.).

Applicable Employees:
Departments of Parks and Recreation, Fleet Management, Facilities Management, Public Works, Fire and Emergency Services, Communications, Purchasing, Community Services Board, Public Utilities, School Board, and County Attorney's Office

(1) *The operator shall provide biennial training to applicable field personnel in the recognition and reporting of illicit discharges.*

- Presentation covering recognition and reporting of illicit discharges. (Year 3)
- Staff can review/sign off the County's *Illicit Discharge Guidance Document & Field Screening Procedures* (Year 5)
- Applicable Documents:
    - Illicit Discharge Tracking and Response, March 2006
    - Hanover County Illicit Discharge Guidance Document, May 2012

(2) *The operator shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed during road, street, and parking lot maintenance.*

- Presentation covering pollution prevention for parking lot maintenance. (Year 3)
- Review with staff/ sign off the *Parking Lot Maintenance SOP & Car Washing Guidance* (Year 5)
- VDOT is responsible for road and street maintenance
- Applicable Documents:
    - Informational Bulletin No. 6 Vehicle Washing Guidance Document

(3) *The operator shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around maintenance and public works facilities.*

- Presentation covering pollution prevention around maintenance and public works facilities. (Year 3)

- Include discussion of requirement for facilities with potential to pollute to have SWPPP plans. *Mechanicsville Solid Waste Convenience Center SWPPP* is required to contain procedures designed to reduce and prevent pollutant discharge (Years 3 and 5)
- Review with staff/ sign off the pollution prevention plan (Year 5)

(4) *The operator shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified in accordance with the Virginia Pesticide Control Act (§ 3.2-3900 et seq. of the Code of Virginia).*

- Verify pesticide operators are certified through the Virginia Department of Agriculture and Consumer Services (VDACS)
- VDACS website contains list of certified applicators. http://www.vdacs.virginia.gov/pesticides/

(5) *The operator shall ensure that employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators obtain the appropriate certifications as required under the Virginia Erosion and Sediment Control Law and its attendant regulations.*

- New applicable staff will obtain certification as soon as possible.
- Staff keep their E&S certifications current
- Staff will re-new their certification every 3 years
- Contractors serving as construction site operators will have current E&S certification

(6) *The operator shall ensure that applicable employees obtain the appropriate certifications as required under the Virginia Erosion and Sediment Control Law and its attendant regulations.*

- All personnel involved in sediment and erosion control plan review, inspections and program administration will be appropriately certified.

(7) *The operators shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around recreational facilities.*

- Detailed training on pollution prevention around recreational facilities. (Year 3)
- Review with staff/ sign off the pollution prevention plan (Year 5)

(8) *The appropriate emergency response employees shall have training in spill responses. A summary of the training or certification program provided to emergency response employees shall be included in the first annual report.*

- Summary of spill response training program

  In Hanover County, all first responders are trained in hazardous materials response and take the following initial training:

  Hazardous Materials First Responder - Operations/32 Hours
  Available through: VDEM, VDFP
  This course is designed for individuals who must respond to a release of hazardous materials and perform defensive operations. The program includes information taught in the HMFR Awareness course. The course is designed to meet the recommendations of

NFPA 472 and OSHA 1910.120 (q)(6)(ii). The course teaches first responders incident stabilization techniques such as incident profiling, hazardous materials behavior modeling, incident planning and the Incident Command System. In addition to incident stabilization techniques, first responders learn defensive tactical control skills including damming, diking, diversion and retention of products, and decontamination of personnel.
Recertification: Students must recertify/demonstrate competencies at this level annually or complete the Hazardous Materials Incident Management or Hazardous Materials Technician course.

First responders conduct annual spill response hands on training drills.

(9) *The operator shall keep documentation on each training event including the training date, the number of employees attending the training, and the objective of the training event for a period of three years after each training event.*

- Create spreadsheet for record keeping or update existing one
- Track training activities

Daily Good Housekeeping Procedures (Pollutant Discharge Prevention)

Road, street and parking lot maintenance

Road and parking lot maintenance includes pothole repair, pavement marking, sealing, sweeping, and re-paving.

VDOT owns the public right-of-way and is responsible for road and street maintenance in Hanover County. These procedures will be for activities performed on Hanover County owned parking areas and travel ways.

- Paving activities will be conducted only on dry days
- Asphalt and other materials for paving or pavement marking activities will be unloaded in areas away from storm sewer inlets
- Storm sewer inlets will be blocked if there is potential for any paving, pavement marking, grinding or cleaning materials from reaching inlets. Any accumulated materials resulting from blocking inlets will be properly disposed
- If concrete work is performed, a concrete washout area with appropriate signage will be located away from any storm sewer inlets
- Any sweeping from parking lot cleaning activities must be disposed
- Sweep paved areas when necessary
- Pick up trash regularly
- Dispose of any waste generated through sweeping and trash pickup in the normal trash

Equipment maintenance

- Prevent pollutant discharge from leaking automobiles and equipment
- Regularly maintain and inspect equipment for service problems. Properly maintaining equipment will help to avoid leaking fluids. When performing maintenance make sure to dispose the used liquids at the proper facility.
- Equipment maintenance will be performed in enclosed areas intended for that purpose, eliminating the potential to discharge materials to the storm sewer system. In the event of a spill indoors, absorbent materials will be available to facilitate clean up. Clean up materials will be disposed of properly.
- If equipment is leaking, prior to repair, drip pans will be placed under the leak and repair will be completed as soon as possible. Drip pans will not be used long term due to the potential to discharge during rain events. Leaky vehicles will be stored under cover if they are stored for more than a day or two prior to repair.
- Any spills or leaks should be cleaned up immediately, with dry methods. Clean up materials must be disposed of properly. Stock spill response materials in case a spill or leak occurs.

The application, storage, transport, and disposal of pesticides, herbicides, and fertilizers

In most cases pesticides and herbicides will not be used by Hanover County. If pesticides or herbicides must be used, departments should consider engaging a qualified company to manage the application of these materials.

- Application

    - Avoid applying on impervious surfaces
    - Do not apply in windy conditions
    - Schedule application for dry weather.
    - Do not apply to eroding soil
    - Do not apply near surface waters or wells
    - Group application sites in order to minimize waste of products between jobs
    - Apply according to manufacturer's recommendations
- Storage
    - Minimize pollutant in stormwater runoff from bulk storage areas
    - Inspect containment areas regularly
    - Store materials in their original packaging
    - Store materials indoors and in areas that are not subject to the effects of rainfall and stormwater runoff
    - Store materials according to ***Hanover County's Materials Management Policy***
- Transport
    - Materials will be loaded, unloaded and transferred in areas away from storm sewer inlets
    - In most cases Hanover County will not use pesticides or herbicides. If pesticides or herbicides are to be used, they will only be transported in quantities less than those allowed under applicable materials of trade (MOT) exemptions under DOT requirements. Typically, pesticides designed for home use will meet these exemptions. MOT exemptions are summarized in Appendix 1 of this document.
- Disposal
    - Use the materials for their intended purpose and avoid disposal
    - Any container containing a pesticide or herbicide should be triple rinsed while in the process of mixing the batch of material. The rinsed container can then be disposed in the regular trash.
    - If products must be disposed for any reason consult the manufacturer for recycling alternatives and the MSDS for proper disposal options

<u>Disposal of Waste Materials Including Landscape Waste</u>

Landscaping wastes, debris wastes and land clearing wastes such as trees, brush, grass and clean woody materials are recycled into mulch and compost by Hanover County. These materials will be taken to an appropriate processing site at one of six convenience centers to be recycled.

<u>Municipal Vehicle Wash Water</u>

Municipal vehicles will be washed according to the ***Hanover County Vehicle Washing Guidance Document***, Informational Bulletin #6. No discharge to the MS4 is permitted.

<u>Prevent</u> Wastewater Discharge without Appropriate VPDES permit

Pumped Water from Utility Construction and Maintenance

Dewatering of groundwater or rainwater infiltration of trenches during construction will be consistent with erosion and sediment control regulations.

In the case of the discharge of contaminated water. In this case cleanup will be consistent with the policies of the Department of Public Utilities that oversees these operations. Any discharge of contaminated water or sewage will be collected, or otherwise routed to the sanitary sewer system or will be tanked and taken to a sewage treatment plant.

When de-watering a trench excavation for utility line construction or maintenance, a Dewatering Structure in accordance with the Virginia Erosion & Sediment Control Handbook is used. The Department of Public Utilities' maintenance crews have a dewatering pit located at the Ashland WWTP.

Appendix 1
DOT Hazardous Material Transportation under the Materials of Trade Exemption

"Even though I transport pesticides classified as hazardous materials, could I be exempt from the DOT regulations?

The DOT regulations are written for the transportation industry. Many companies routinely transport pesticides and fuels for support of their operation. Businesses that transport small quantities of certain hazardous materials may be exempt. This exemption is known as a Material of Trade (MOT) provision. Check for the following concerning the products you are using:

There should be a diamond-shaped DOT label on the packaging; if there is no DOT label, then the product is not considered hazardous and doesn't have to be listed.

If you see the diamond-shaped DOT label, make note of the hazard classification number at the bottom of the diamond.

Check the capacity of the containers that you transport.

If the DOT diamond-shaped label is present, look for the packing group number in the center of the diamond. It will be either:

- PG I = material poses great danger;
- PG II = material poses medium danger;
- PG III = material poses minor danger.

If this information is not on the diamond found on the packaging, it can likely be found on the MSDS, shipping papers provided, the supplier or product manufacturer should know.

Determine the total weight of the product being transported. Under DOT regulations, a 50-pound bag of product represents 50 pounds regardless of whether the actual amount of active ingredient is much less. Some laws regulate by the amount of active ingredient, not the total weight; this isnt the case with the DOT.

Based on the information you obtained from the items listed above, MOT meets any one of the following and is exempt:

Class 3, 8, 9, Division 4.1, 5.1, 6.1, or other regulated materials, contained in one package with a capacity of no more than:

- 1 pound or 1 pint for a PG I material;
- 66 pounds or 8 gallons for a PG II, PG III, or other regulated materials; or
- 400 gallons of a diluted mixture not to exceed a 2 percent concentration of a class 9 material;

- 220 pounds of a Division 2.1 or 2.2 material in a cylinder; and
- A one-ounce package (or less) of a Division 4.3, PG II, or PG III material.

No more than 440 pounds of any hazardous material not specified above may be transported. If all the DOT hazardous materials that you transport fit the previous exceptions, they are considered MOTs and you are exempt from the requirements if the following are also met:

Packaging must be leak-proof for liquids and gases, sift-proof for solids.

Packages must be securely closed, secured against movement, and protected against damage.

Gasoline must be contained in containers approved by DOT or the Occupational Safety and Health Administration (OSHA).

Cylinders and pressure vessels must be marked with the proper shipping name and must have the identification number and DOT label attached.

A non-bulk package other than a cylinder (including receptacles transported without outer packaging) must be marked with a common name to identify the contents, including the letters "RQ" if it contains a Reportable Quantity of a hazardous substance.

A tank that contains a diluted mixture (not more than 2 percent concentration) of a Class 9 material must be marked on two opposite sides with the 4-digit United Nations (UN) or North America (NA) identification number.

The operator of a motor vehicle that contains MOT must be informed of the presence and amount of the hazardous material."[1]

[1] From PI-161, one of a series of the Agronomy Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences,University of Florida. Original publication date January 2008. Reviewed March 2011. http://edis.ifas.ufl.edu.

Good Housekeeping Policies
Supporting Materials

Hanover County Materials Management Guidance Document

MS4 Permit Requirement:

BMP 6.d. – Materials management notification

Notify all Hanover County storage yards, fleet or maintenance shops, outdoor storage areas, rest areas, waste transfer stations, and other municipal facilities of the requirements for managing wastes, soluble/erodible materials and chemicals with the potential to pollute. Provide policy document to these facilities.

Guidance:

This guidance addresses the management of solid and granular materials that are soluble and/or erodible, and liquid materials. Appropriate management of common materials such as fertilizers, solvents, paints, cleaners, and automotive products, can reduce the potential for polluted runoff. Proper materials management entails the selection of the individual product, the correct use and storage of the product, and the responsible disposal of associated waste(s).

Material Storage - General

- Materials should be stored and managed in accordance with the manufacturer's instructions.
- If several different materials are stored together, steps should be taken to insure that the mixed materials are compatible for storage. A product's MSD sheet can be consulted for guidance on storage, compatibility, reactivity and stability.

Liquid Storage not requiring special plans (e.g. Spill Prevention Control and Countermeasures for Petroleum Products) and Solid and Granular Material Storage will be:

- Stored inside where possible. When it is not possible to store materials inside, they should be stored in a covered area with sufficient overhanging cover to prevent rainfall from normally coming in contact with the stored material or be stored under weather resistant covers or tarps, on a solid surface, such as asphalt or concrete, or a raised surface, such as a pallet. Cover tarps should be weather resistant and secured.
- Outside storage areas should be located in areas not normally subject to concentrated run-off such as ditches, swales, or other stormwater conveyance structures, not normally subject to flooding, and should not be located in areas where run-off from a roof, roof downspout, or other overhead structure can come in contact with the stored material.

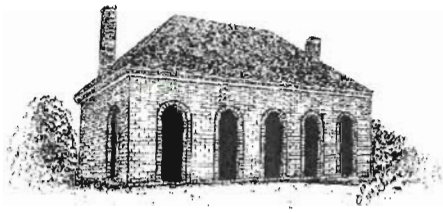
Liquid Material Storage – requiring Spill Prevention Control and Countermeasures (SPCC) or other Plans must be managed in accordance with the provisions of the applicable plans.

Spill Material Clean-up

- Only clean-up a spill if properly trained to clean it up. Contact your supervisor if you are uncertain how to clean-up a spill.
- In an emergency, call 911 to request assistance with cleaning up a spill.
- Always wear appropriate personal protective equipment.
- In general, when provided, follow manufacturer instructions when cleaning up a spill.
- In general, spills involving dry or solid materials should be cleaned up immediately by dry sweeping or shoveling. Whenever possible recovered materials should be used for the original purpose intended. If this is not possible, they should be properly disposed of. All contaminated cleaning equipment, clothes, and absorbent materials should be properly treated and/or disposed of.
- Liquid spills should be cleaned up immediately. Typically large amounts of liquid materials are cleaned by pumping to a new container and using absorbent materials to remove whatever liquid remains. Small spills may be cleaned up by the use of absorbent materials only. Whenever possible recovered materials should be used for the original purpose intended. If this is not possible, recovered materials should be properly disposed of. All contaminated cleaning equipment, clothes, and absorbent materials should be properly treated and/or disposed of.

Waste Management

- Materials should be fully utilized whenever possible to minimize the amount of waste generated.
- Manage empty or partially full empty containers and any waste materials according to manufacturer's instructions or county policies, whichever is more stringent.
- Special wastes such as aerosols, batteries, fluorescent light bulbs, car batteries, oil, oil filters, antifreeze, absorbents, button batteries, and paint should be managed in accordance with Hanover County's "Environmental Compliance Plan for Universal Wastes and Exempt Small Quantities" dated September 14, 2009. *(attached)*



HANOVER COURTHOUSE

HANOVER COUNTY

ESTABLISHED IN 1720

September 14, 2009

P.O. BOX 470, HANOVER, VA 23069
WWW.CO.HANOVER.VA.US

PHONE: 804-365-6005
FAX: 804-365-6234

Hanover Employees:

Hanover County is responsible for complying with environmental regulations and mandates from both the State and Federal governments. Various County agencies are working diligently to respond to these directives. In addition, each County employee has a role in helping the County achieve its environmental goals.

Currently, we are addressing regulations regarding special wastes. Special wastes are any waste material which, because of its physical characteristics, chemical makeup or biological nature, requires either special handling procedures, permitting, or poses an unusual threat to human health, equipment, property, or the environment.

One of the roles of each employee is to simply be aware of the chemicals and potential special wastes that are located in your department and how to properly store, maintain and dispose of these wastes. Although you may think of these wastes as normal household products, they must be handled as special waste by the County. It is imperative that waste be disposed of properly and not allowed to accumulate in an unapproved area. Purchases of materials that are hazardous in nature should be limited. Material Safety Data Sheets (MSDS) must be kept on file in the office on all hazardous chemicals.

In addition to awareness, because we are employees of Hanover County, it is all of our responsibility to ensure the County is following applicable regulations and that we do our part to ensure compliance. Some of these procedures may affect you and others not. Be sure to review all the special waste programs available. These guidelines, along with the assistance of every employee, will ensure our local government's response is appropriate and adequate by today's standards.

If you have any questions or needs, please contact the Department of Public Works at ext. 6181. I hope the attached special waste form and FAQ's will be useful in identifying special wastes and the proper disposal of these wastes.

In closing, I want to thank every County employee for your role in our environmental stewardship and compliance efforts.

Sincerely,

Cecil R. Harris, Jr.
County Administrator

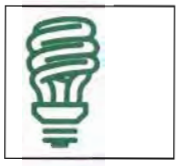
CRHJr/dkc

Enclosures

Environmental Compliance Plan for Universal Wastes and Exempt Small Quantities

Disposal of Aerosols

- In most instances, unspent aerosol products will be classified as hazardous waste due to the remaining or flammable residual propellant in the can. Departments should contract Facilities Management for a disposal location as the need arises for "in process". (In process simply means that the employee that used the aerosol, will dispose of it promptly after all has been used, not collect any other employees' cans, and not accumulate the special waste.)
- Agencies will work to reduce/eliminate the use of aerosols where ever practical and can purchase pump sprays or sprays with a non-flammable property as an alternative.
- All other Flammable aerosols, which are considered hazardous wastes (most products) due to the residue remaining in the container, **must have the spray cap removed and the spray stem covered with tape.**



Tube Fluorescent and Other Light Bulbs

- Tubes and compact fluorescent bulbs are "Universal Wastes" and will be collected by Facilities Management from all County facilities.

Recycling of Car Batteries, Oil, Oil Filters, Oil rags, Antifreeze and Absorbent

- Fleet Services will continue to manage these "Universal Wastes". It is not anticipated that other agencies will generate these waste materials. However, Fleet Services and DPW 301 Transfer Station are available if occasional materials of this class are generated.

Rechargeable Batteries and Button Batteries

- **Batteries must have terminal points covered with electrical tape prior to placement in the recycling container.**
- Facilities Management will provide a central location for rechargeable batteries and button batteries recycling. Fleet Services will also have a location for rechargeable batteries. There will be an additional button battery recycling location at the reception desk in the Administration Building.
- Small quantities can be sent to Facilities through interoffice mail.
- Rechargeable "Lithium Ion" batteries are recyclable and are part of the special waste program. "Lithium" batteries, (frequently used in cameras) are not recyclable and should be disposed of as trash.
- Alkaline batteries may be disposed of as trash.

E-Waste Recycling

- E-waste associated with computers will be managed by the Information Technology Department (ITD) and the Public Works Department.
- Other electronic waste (anything with a plug) can be delivered by County agencies to the DPW 301 Transfer Station for recycling.

Paints

- Unless approved by the Department Head, no oil based paints will be used by County personnel.
- If contractors use oil based paints, they will be required to remove any left-over paint containers.
- Latex paints can be dried and placed in normal trash. The Public Works Department can provide drying agents if needed.

Frequently Asked Questions
Special Waste

1. What is Special Waste?
   Special Waste is defined as any waste material which because of its physical characteristics, chemical makeup, or biological nature requires either special handling procedures, permitting or poses an unusual threat to human health, equipment, property or the environment. Some example of special waste include oil based paints and flammable aerosols.

2. What is Universal Waste?
   Universal Wastes include items like rechargeable and button batteries, mercury containing equipment such as bulbs (lamps), car batteries, oil, oil filters, antifreeze, and electronic waste items. Regulations on universal wastes reduce the quantity of these wastes going to the landfills or combustors. In addition the regulations ensure that the wastes will go to the appropriate recycling facilities.

3. Why do I have to be involved?
   As an employee of Hanover County it is part of our responsibility to assist in complying with environmental regulations and mandates issued from state and federal governments.

4. How can you find out if a material is hazardous waste?
   If you look on the product label, materials that include statements like "flammable" or "explosion hazard" are potentially hazardous. If these products are in aerosol cans then the empty can becomes a hazardous waste (in the commercial or business environment) and should be disposed of accordingly. As a home owner or residential user of that chemical in many instances it is exempt from hazardous waste disposal requirements, but not at work.

5. Where in the office can I find information on potential hazardous waste?
   As part of the special waste requirement, all departments will have Material Safety Data Sheets (MSDS) on file in the office. You can look for a specific item in the file to find information on ingredients in the product, stability and reactivity of the product and special handling and storage procedures, and first aid to name a few. If you have a product in the office that does not have an MSDS sheet on file, one should be put in there immediately.

6. Are MSDS's required for all chemicals, even the bottle of hand sanitizer I have on my desk?
   Material Safety Data Sheets are required for all hazardous chemicals. A hazardous chemical is any chemical that is a physical or health hazard. If the chemical has a precautionary statement on the container it is a hazardous chemical. An exception applies to MSDS's, as they are not required for chemicals that can be purchased by the general public in a quantity that would typically be used in the home. For example, a bottle of Windex to occasionally clean an office window does not require an MSDS but a case of Windex to be used by an employee whose job it is to clean windows would require an MSDS. Additionally, if a hazardous chemical is not available to the general public and has to be ordered through a chemical supplier it requires an MSDS regardless of the quantity. You must still dispose of an empty aerosol can appropriately if it is considered hazardous waste even if it did not require an MSDS. Lastly, MSDS's, if required, must be maintained for 30 years and be readily available.

7. I keep Static Guard in my desk, is this considered hazardous waste?
   Items brought to work, like static guard, are considered personal use items and should be disposed of as personal items.

8. What happens if my department is not following the guidelines?
   If the County is found to be non-compliant with Special Waste regulations, the County could be subject to sanctions and fines. Individuals may also be liable for their actions under these rules.

9. What can I do to reduce special wastes?
   To reduce special wastes consider purchasing pump sprays instead of aerosols, items that are non-flammable, water based paints instead of oil based paints and other natural products.

10. Who can I contact if I have more questions?
    You can contact Steve Chidsey, Chief of Public Works Operations at 365-6181.

Hanover County Illicit Discharge Guidance Document

MS4 Permit Requirements

BMP 6.c. – Illicit discharge

Notify all Hanover County storage yards, fleet or maintenance shops, outdoor storage areas, rest areas, waste transfer stations, and other municipal facilities the sources of illicit discharges and the potential to pollute. Provide policy documents to these facilities.

This Guidance Document

This guidance document defines what an illicit discharge is, outlines illicit discharge reporting procedures, and outlines strategies to prevent illicit discharges.

Definition of Illicit Discharge

Illicit discharge means any discharge to a storm sewer that is not composed entirely of stormwater, except discharges pursuant to a VSMP permit or other state permit, discharges resulting from firefighting activities, and discharges identified in applicable state regulations as not being significant contributors of pollutants.

Reporting an Illicit Discharge

Emergency situations requiring immediate assistance:

Report emergency situations by dialing 911. The following information should be reported if available:

1) The nature of the emergency situation, such as immediate danger to persons, property or the environment;
2) The type of material that was spilled;
3) The quantity of material that was spilled;
4) Any other conditions that responders should be aware of to appropriately respond to the situation such as injuries or hazards associated with the spilled material;
5) The location of the discharge;
6) A contact person and a contact phone number, if available, at the site.

Non-Emergency Situations:

Non-emergency situations should be controlled and cleaned up as appropriate by the responsible County department. After the situation is controlled, the illicit discharge should be reported to the Hanover County Department of Public Works during normal business hours at (804)365-6181. The following information should be reported to the Department of Public Works:

1) The type of material involved with the illicit discharge;
2) The quantity of material involved with the illicit discharge;
3) The location of the illicit discharge;
4) The date of the illicit discharge;
5) A contact person and a contact phone number if additional information is required.

Discharges of hazardous materials, hazardous wastes and petroleum products should also be reported to the Hanover County Fire Marshall at (804)365-6195.

Illicit Discharge Prevention

The potential for illicit discharges to enter surface waters or storm sewer systems can be minimized by identifying the areas of a facility that may be prone to illicit discharges, identifying the potential flow paths from these areas, implementing appropriate proactive procedures, and having spill control and remediation equipment, and clean-up procedures appropriate for the types of discharges that could potentially occur.

Vehicle Washing

Vehicles should be washed in a manner preventing discharge of pollutants to the storm sewer system or to a surface water. Vehicle washing will be in accordance with the County's Informational Bulletin 6, Vehicle Washing Guidelines dated September 14, 2009 *(attached)*.

Spill Prevention

For facilities with Spill Control, Containment and Countermeasure (SPCC) or Stormwater Pollution Prevention Plans (SWPPP) comply with the site specific requirements of the SPCC or SWPPP.

For sites with specific operating procedures addressing spills follow the specific operating procedures.

General Procedures for minimizing the potential for spills and leaks to cause and illicit discharge applicable to all facilities are as follows:

- Conduct maintenance work where fluids may be spilled in a contained area or with containment pans so any spilled fluids will be contained.
- Parked vehicles should be monitored for leaks. Pans should be placed under any leaking vehicles to collect the leaking fluid for proper disposal until the equipment can be repaired.
- Provide appropriate waste storage facilities for all used/waste fluids requiring special handling expected to be generated at a facility.
- Do not pour liquid waste down toilets or sinks unless disposal of the liquid in a sanitary sewer or septic system is appropriate.
- Do not pour liquid waste down floor drains or storm drain inlets under any condition.

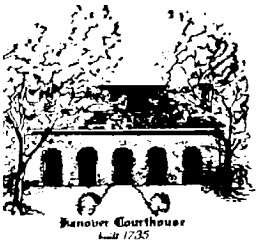
- Use drain mats or other available materials to cover drains in the event of a spill to prevent or minimize the amount of material entering the drain.
- Follow manufacturer's recommendations for disposal and clean-up of fluids.

Spill Clean-up

- If safe to do so and properly trained, take appropriate measures to contain the spill to the smallest area possible.
- If safe to do so and properly trained, prevent spilled fluids from entering drains, creeks and waterways.
- Determine what material has been spilled so that proper clean-up procedures can be implemented.
- Only clean-up a spill if properly trained. Specialty contractors may be required to respond depending on the nature of the spill. Fire/EMS personnel should be consulted if proper clean-up procedures are unknown by the person/department discovering the spill.
- Wear appropriate personal protective equipment when cleaning a spill.
- Use dry methods to clean up spills and leaks whenever possible.
- If water must be used, use as little water as possible. Depending on the nature of the spill, the water utilized in clean-up may have to be absorbed and handled as a special waste material.
- Properly dispose of all materials cleaned up and all materials utilized to clean-up the spill. Depending on the nature of the spilled material, special handling of the used clean-up materials may be required.

General Clean-up:

- Soap, water and a mop can be used for general cleanup. Mop water from general clean-up should be disposed of in a sink or toilet for treatment at a wastewater treatment plant of septic system and not dumped outside where is can become an illicit discharge.



Vehicle Washing Guidance Document
Informational Bulletin No. 6
Phase II (MS4) Stormwater Program
Hanover County, Virginia

Water from vehicle washing can make its way across a hard surfaced parking lot and enter the storm drainage system. From there, wash water may enter our creeks and rivers potentially harming fish and other aquatic life. Water from vehicle washing may contain contaminants such as nutrients and hydrocarbons and should not discharge to the storm drainage system, creeks or streams.

Areas for Vehicle Washing

The following are recommendations for vehicle washing:

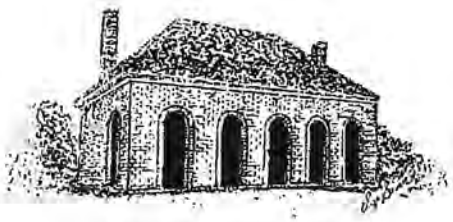
- Use a commercial car wash where wastewater is properly treated.
- Wash vehicles in an area designed for vehicle washing where the water is discharged to the sanitary sewer system for treatment.
- If vehicle washing will be done outside, designate an area for on-site vehicle washing that discharges to gravel, grass, or other permeable surfaces allowing no discharge of washwater from the site.
- Use hoses with nozzles that automatically turn off when left unattended.
- Spills should be immediately contained and treated.

Cleaning Products

- Use products labeled “non-toxic,” “phosphate free,” and “biodegradable.” These products can be purchased at most large retail outlets. Note that even biodegradable and nontoxic soaps can be harmful to aquatic life and water quality, and must be kept out of the storm drain system.
- Do not use acid-based wheel cleaners or engine degreasers unless the waste can be properly disposed of.
- Reduce the amount of soap used by using a bucket of soapy water to re-soap rags or sponges rather than adding more soap directly to rags or sponges.

Private Vehicles

- Private vehicles may not be washed on county property.



HANOVER COURTHOUSE

HANOVER COUNTY

ESTABLISHED IN 1720

WWW.CO.HANOVER.VA.US
P.O. BOX 470, HANOVER, VA 23069
7516 COUNTY COMPLEX ROAD, HANOVER, VA 23069
PHONE: 804-365-6005
FAX: 804-365-6234

MEMORANDUM

TO: Department Heads, Constitutional Officers, Dr. Jamelle Wilson Superintendent of Schools

FROM: Cecil R. Harris, Jr., County Administrator

DATE: June 29, 2012

RE: Environmental Compliance – Department and Organizational Responsibilities

Hanover County Government and Schools operate under a variety of environmental regulations administered primarily by the Department of Conservation and Recreation (DCR) and the Department of Environmental Quality (DEQ). Organizational leaders and Department heads with facilities and operations subject to these regulations are responsible for complying with the applicable permitting, inspection and reporting requirements. Increasingly, the Environmental Protection Agency (EPA) is intervening in the state and conducting independent inspections and audits of local governments for their adherence to permit requirements. The EPA has also been very aggressive in issuing various enforcement actions including significant civil fines for alleged violations.

The County's MS4 Permit requires the County to implement measures in all County operations to prevent pollution and therefore reduce or eliminate our financial liabilities and exposure to environmental compliance audits under state and/or federal authority. The attached document identifies the responsibilities of individual departments and organizations. Please review the document and ensure the appropriate staff in your agencies are familiar with the environmental requirements and fulfill the requirements for their facilities. The Department of Public Works will continue to support the environmental compliance efforts of the agency heads by conducting periodic inspections and audits, and serving as a centralized information resource. If you have any questions regarding the content of this memorandum please contact Mike Flagg at 365-6179.

Small Municipal Separate Storm Sewer System (MS4) Responsibilities Guidance Document (June 2012)

Purpose: This guidance is intended to clarify pollution prevention and good housekeeping requirements and to establish a clear chain of authority.

Background: Hanover County, as required by state and federal law, has filed a registration statement for general permit coverage as a Small Municipal Separate Storm Sewer System (MS4). This general permit is very broad in scope and covers County Government and Schools. The permit is administered at the state level by the Department of Conservation and Recreation (DCR) but is also subject to review by the Environmental Protection Agency (EPA). The Hanover County Department of Public Works is responsible for administering the permit on the County's behalf. All Hanover County department heads, Constitutional Officers and Schools (Memorandum of Understanding approved 5/25/11, Agreement between Hanover County and Hanover County School Board) are responsible for ensuring their facilities comply with the County's MS4 permit where applicable.

Local Government responsibilities include identifying, implementing, evaluating and modifying best management practices (BMPs) to meet pollution prevention and good housekeeping measurable goals. The requirements include the following:

- *Operation and maintenance programs including activities, schedules, and inspection procedures shall include provisions and controls to reduce pollutant discharges into storm sewers and receiving surface waters*
- *Operations shall be managed to assure elimination from storage yards, fleet or maintenance shops, outdoor storage areas, rest areas, waste transfer stations, and other municipal facilities of any discharges to the storm sewer and receiving surface waters that are not composed entirely of storm water (Illicit Discharges)*
- *Waste materials shall be disposed of properly*
- *Materials that are soluble or erodible shall be protected from exposure to rainfall*
- *Materials, including but not limited to fertilizers and pesticides, that have the potential to pollute receiving surface waters shall be applied according to manufacturer's recommendations*

Details regarding the County's MS4 Program, including the Program Management Plan and annual reports, can be obtained through the County's website:

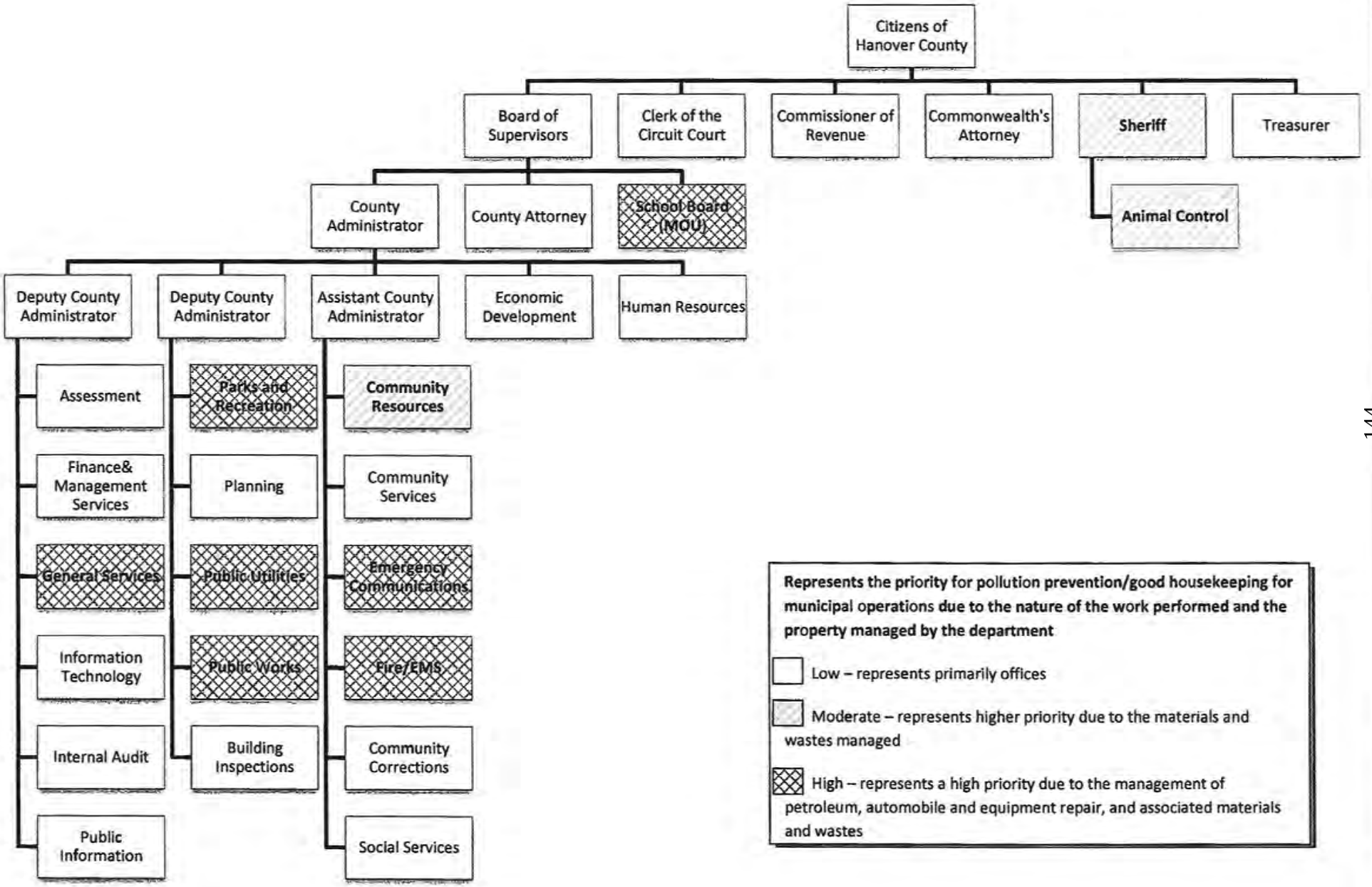
http://www.co.hanover.va.us/works/envirmnt.htm#County.

The attached organization chart highlights each County agency's level of risk in relation to environmental compliance. Specific guidance documents applicable to Hanover County Departments and Schools that addresses activities which can potentially cause pollution can be found at: (T:\County Policies\Environmental). These include:

- Illicit Discharge Guidance Document
- Materials Management Guidance Document
- Universal Waste and Exempt Small Quantities Guidance Document
- Vehicle Washing Guidance Document

These guidance documents are intended to address the requirements of the MS4 permit and reduce pollutants from County owned and operated areas. These requirements are in addition to other applicable regulations for Storm Water Pollution Prevent Plans (SWPPP) or Spill Prevention and Counter Control Measures (SPCC) that are applicable to certain County operations. Agency Heads are responsible for implementation of this guidance if it is applicable to their operations.

Hanover County Priorities for Pollution Prevention/Good Housekeeping



High Priority Facility Identification

[Section II.B.6.b(1) of the MS4 General Permit]

In the fall of 2013, in order to meet the requirements of the County's MS4 permit, meetings were held with all Hanover County departments that operated facility's that could potentially meet the criteria for a high priority facility. 100% of Hanover owned facilities were screened for potential stormwater impacts. Meetings were held with a number of Hanover County Departments including the following agencies: Fire and EMS, Public Utilities, Public Works, and the Hanover County School Board. In order to prepare for the meetings, the requirements for identifying high priority facilities, and a list of potential facilities were provided to these departments before the meeting. This information is provided as an attachment to this document. At each meeting the requirements for high priority facilities were discussed to determine if any of the facilities operated by the department were potential high priority facilities. In addition, for all facilities operated by the Hanover County School Board, site inspections were conducted in order to identify any stormwater pollutant potential. Recommendations were provided to the school board to eliminate some potential pollutant sources.

During discussions, with Fire and EMS, Public Utilities and the Hanover County School Board, no high priority facilities or practices that could potentially pollute stormwater were identified. Discussions with Hanover Public Works identified the Mechanicsville Solid Waste Service Convenience Center, at 7427 Verdi Lane in Mechanicsville as a potential source of stormwater pollutants. Therefore, under the requirements of the MS4 permit an SWPPP plan will be developed for this facility by July 1, 2017.

Notes:

[1] Meeting dates were as follows: Fire & EMS (September 4, 2013), Public Utilities (September 6, 2013), Schools (Oct 1, 2013)

Attachments

1) High Priority Site Identification
2) List of Potential High Priority sites in the MS4

High Priority Facility Identification

Supporting Materials

High Priority Site Identification

Under the County's new MS4 permit by June 30 2014 the County must:

Identify Municipal High-Priority Facilities. These high-priority facilities shall include

(i) composting facilities
(ii) equipment storage and maintenance facilities
(iii) materials storage yards
(iv) pesticide storage facilities
(v) public works yards
(vi) recycling facilities
(vii) salt storage facilities
(viii) solid waste handling and transfer facilities
(ix) vehicle storage and maintenance yards.

After we identify these facilities we must determine which of the municipal high-priority facilities have a high potential of discharging pollutants. This is where Public Works will need the help of each department to determine if the facilities that we have identified meet any of the criteria below.

We have attached a list of non-office facilities that may meet the criteria above. These must be facilities within the MS4 /Urbanized area of the County. There are some facilities that are not on the list for that reason.

If a department believes that any of the facilities what we have identified in the attached facility list meet this criteria or if they are aware of other facilities that meet this criteria, they should contact Mike Dieter in Public Works to discuss.

Municipal high-priority facilities will be considered to have a high potential for discharging pollutants if those facilities identified are not covered under a separate VPDES permit and have any of the following materials or activities occur that are expected to have exposure to stormwater resulting from rain, snow, snowmelt, or runoff:

(a) Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;
(b) Materials or residuals on the ground or in stormwater inlets from spill[s] or leaks;
(c) Material handling equipment (except adequately maintained vehicles);
(d) Materials or products [that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g., rock, salt, fill dirt);
(e) Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants)
(f) Materials or products that would be expected to be mobilized in stormwater runoff contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;
(g) Waste material except waste in covered, non-leaking containers (e.g., dumpsters);
(h) Application or disposal of process wastewater (unless otherwise permitted); or,
(i) Particulate matter or visible deposits of residuals from roof stacks, vents or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.

Contact: Fire-EMS

Facility: Ashcake Volunteer Rescue Squad, Station #13 Fac# 9

GPIN 8707-22-6722 Facility: Ashcake Rescue Squad

HUC Code: YO30 In MS4 ? Y Acres: 5.73

Site Priority: High

Address: 8375 NEW ASHCAKE ROAD

Facility: Ashland Volunteer Fire Station 1 Fac# 10

GPIN 7880-05-3861 Facility: Ashland Fire Station

HUC Code: YO27 In MS4 ? Y Acres: 2.432

Site Priority: High

Address: 501 ARCHIE CANNON DRIVE

Facility: East Hanover Volunteer Rescue Squad, Station #14 Fac# 16

GPIN 8735-02-4048 Facility: East Hanover Rescue Sq

HUC Code: JL19 In MS4 ? Y Acres: 4.775

Site Priority: High

Address: 8105 WALNUT GROVE ROAD

Facility: Henry Volunteer Fire Station #6 Fac# 20

GPIN 8706-67-3972 Facility: Henry Fire Station

HUC Code: YO30 In MS4 ? Y Acres: 1.99

Site Priority: High

Address: 9634 CHAMBERLAYNE ROAD

Facility: Mechanicsville Volunteer Fire Station #7 Fac# 21

GPIN 8704-93-6197 Facility: Mechanicsville Fire Stati

HUC Code: JL19 In MS4 ? Y Acres: 2.62

Site Priority: High

Address: 7161 STONEWALL PARKWAY

Contact: Public Utilities

Facility: Ashland WWTP Fac# 49

GPIN 7870-87-0491 Facility: Ashland WWTP

HUC Code: YO11 In MS4 ? Y Acres: 5

Site Priority: High

Address: 0

GPIN 7870-87-0970 Facility: Ashland WWTP

HUC Code: YO11 In MS4 ? Y Acres: 23.974

Site Priority: High

Address: 106 WEST VAUGHAN ROAD

Facility: Atlee Road Storage Tank & PS - HSWS Fac# 86

GPIN 8706-11-5021 Facility: Water Tank

HUC Code: JL17 In MS4 ? Y Acres: 0.45

Site Priority: High

Address: 9113 ATLEE ROAD

Facility: Avondale PS Fac# 65

GPIN 8706-54-9540 Facility: Lift Station

HUC Code: YO30 In MS4 ? Y Acres: 0.064

Site Priority: High

Address: 9236 SHADY GROVE ROAD

Facility: Beaverdam Creek PS Fac# 64

GPIN 8714-30-5606 Facility: Lift Station

HUC Code: JL19 In MS4 ? Y Acres: 0

Site Priority: High

Address: 7040 SENN WAY

Facility: Crump Creek PS Fac# 57

GPIN 8707-63-2288 Facility: Lift Station

HUC Code: YO28 In MS4 ? Y Acres: 0.5

Site Priority: High

Address: 10174 GEORGIE DRIVE

Facility: Future Lower Opossum Creek PS Site Fac# 75

GPIN 8706-87-9377 Facility: Pump Station

HUC Code: YO30 In MS4 ? Y Acres: 0.858

Site Priority: High

Address: 0

Facility: Hardees PS Fac# 55

Facility: Hardees PS Fac# 55

GPIN 7870-91-9558 Facility: Lift Station

HUC Code: YO27 In MS4 ? Y Acres: 0.014

Site Priority: High

Address: 507 COLLEGE AVENUE

Facility: Harris Court Well, Storage Tank & PS - HSWS Fac# 94

GPIN 8714-99-5206 Facility: Well House

HUC Code: JL19 In MS4 ? Y Acres: 0.243

Site Priority: High

Address: 7014 CALMAR DRIVE

Facility: High Point Farms PS #3 (Poteet) Fac# 54

GPIN 8714-80-2959 Facility: Lift Station

HUC Code: JL19 In MS4 ? Y Acres: 0.069

Site Priority: High

Address: 7087 BROOKING WAY

Facility: Jackson Ave Storage Office Bldg - HSWS Fac# 89

GPIN 8704-85-8882 Facility: Water Tank

HUC Code: JL19 In MS4 ? Y Acres: 0

Site Priority: High

Address: 7296 JACKSON AVENUE

Facility: LeReve Manor PS Fac# 59

GPIN 8724-52-0484 Facility: Lift Station

HUC Code: JL19 In MS4 ? Y Acres: 0.194

Site Priority: High

Address: 7128 HARVER WAY

Facility: Lockwood Pump Station - HSWS Fac# 85

GPIN 7795-86-6529 Facility: Water Pump Facility

HUC Code: JL17 In MS4 ? Y Acres: 10.166

Site Priority: High

Address: 8310 RICHFOOD ROAD

Facility: Mechumps Creek PS Fac# 67

GPIN 7880-20-8879 Facility: Lift Station

HUC Code: YO27 In MS4 ? Y Acres: 0.036

Site Priority: High

Address: 101 SOUTH CARTER ROAD

Facility: Pleasant Street Storage Tank & PS - HSWS Fac# 91

Facility: Pleasant Street Storage Tank & PS - HSWS Fac# 91

GPIN 7779-98-7815 Facility: Water Tank

HUC Code: YO27 In MS4 ? Y Acres: 0.42

Site Priority: High

Address: 751 SOUTH TAYLOR STREET

Facility: Presidential Business Center PS Fac# 80

GPIN 7789-27-5417 Facility: Pump Station

HUC Code: JL17 In MS4 ? Y Acres: 0.057

Site Priority: High

Address: 315 HILL CARTER PARKWAY

Facility: Pump Station Fac# 77

GPIN 8724-21-7535 Facility: Pump Station

HUC Code: JL19 In MS4 ? Y Acres: 0.345

Site Priority: High

Address: 0

Facility: Quarles Road Storage Tank & PS - HSWS Fac# 63

GPIN 7880-25-8104 Facility: Lift Station

HUC Code: YO27 In MS4 ? Y Acres: 0.037

Site Priority: High

Address: 305 QUARLES ROAD

GPIN 7880-25-7127 Facility: Lift Station

HUC Code: YO27 In MS4 ? Y Acres: 0.513

Site Priority: High

Address: 303 QUARLES ROAD

Facility: Shelton Pointe PS Fac# 83

GPIN 8716-83-3495 Facility: Pump Station

HUC Code: YO30 In MS4 ? Y Acres: 0

Site Priority: High

Address: 9167 SHELTON POINTE DRIVE

Facility: Sledd Run PS #1 Fac# 56

GPIN 8723-28-0975 Facility: Lift Station

HUC Code: JL19 In MS4 ? Y Acres: 0.091

Site Priority: High

Address: 6460 FREEL TRACE

Facility: Smithtown PS Fac# 66

Facility: Smithtown PS Fac# 66

GPIN 7880-14-4138 Facility: Lift Station

HUC Code: YO27 In MS4 ? Y Acres: 0.184

Site Priority: High

Address: 119 SMITHTOWN ROAD

Facility: Snead Street PS Fac# 70

GPIN 7870-51-2870 Facility: Lift Station

HUC Code: JL17 In MS4 ? Y Acres: 0.065

Site Priority: High

Address: 229 THOMPSON STREET

Facility: South Center Street PS Fac# 68

GPIN 7779-67-2150 Facility: Lift Station

HUC Code: JL17 In MS4 ? Y Acres: 0.12

Site Priority: High

Address: 1020 SOUTH CENTER STREET

Facility: Strawhorn Well, Storage Tank and PS - Rural Fac# 99

GPIN 8726-01-1516 Facility: Well House

HUC Code: YO30 In MS4 ? Y Acres: 0

Site Priority: High

Address: 6507 STRAWBANK DRIVE

Contact: Public Works

Facility: Highpoint Farms PS#4 (in utilities DB) Fac# 121

GPIN 8724-11-2446 Facility: Stormwater Basin

HUC Code: JL19 In MS4 ? Y Acres: 2.886

Site Priority: High

Address: 7069 LYNK LANE

Facility: Mechanicsville Solid Waste Convenience Center Fac# 110

GPIN 8716-31-9690 Facility: Mechanicsville SWCC

HUC Code: YO30 In MS4 ? Y Acres: 32.5

Site Priority: High

Address: 7427 VERDI LANE

Facility: Richfood Road PS (in utilities DB) Fac# 122

GPIN 7795-77-3659 Facility: Stormwater Basin

HUC Code: JL17 In MS4 ? Y Acres: 0.4

Site Priority: High

Address: 8410 RICHFOOD ROAD

Contact: School Board

Facility: Cold Harbor ES Fac# 128

GPIN 8724-51-0804 Facility: Cold Harbor ES

HUC Code: JL19 In MS4 ? Y Acres: 25.095

Site Priority: High

Address: 6740 COLD HARBOR ROAD

Facility: John Gandy ES Fac# 132

GPIN 7870-95-1310 Facility: John Gandy ES

HUC Code: YO11 In MS4 ? Y Acres: 1.29

Site Priority: High

Address: 0

GPIN 7870-95-1005 Facility: John Gandy ES

HUC Code: YO11 In MS4 ? Y Acres: 1.29

Site Priority: High

Address: 0

Facility: Lee Davis HS Fac# 135

GPIN 8714-89-7325 Facility: Lee Davis HS

HUC Code: JL19 In MS4 ? Y Acres: 23.5

Site Priority: High

Address: 7052 MECHANICSVILLE TURNPIKE

Facility: Stonewall Jackson MS Fac# 144

GPIN 8715-81-6200 Facility: Stonewall Jackson MS

HUC Code: JL19 In MS4 ? Y Acres: 2.07

Site Priority: High

Address: 8035 OLD HICKORY DRIVE

Nutrient Management Plan Locations

(Minimum Control Measure 6)

Requirement for Fertilizer Applicators under the County's MS4 Permit

On July 1 the regulations for Municipal Separate Storm Sewer System Operators become effective. Under these regulations, operators are required to:

- Within 12 months of the effective date, identify all lands where nutrients are applied to contiguous areas greater than one acre.
- Within 60 months of the effective date, implement turf and landscape nutrient management plans on these areas
- These plans must be developed by a certified turf and landscape nutrient management planner
- The plans must be developed according to the a fairly prescriptive schedule (see timeframes in regulations below)

Note: Please keep in mind that as of February 1, 2013, only certified fertilizer applicators can apply fertilizer for the County. These applications must be tracked by zip code. (see 4 VAC 405 for more information)

Applicable Regulations

9 VAC 25-890-40 Sect II.B.6.c(1)(a)
Within 12 months of state permit coverage, the operator shall identify all applicable lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude shall be provided for each such piece of land and **r**eported in the annual report.

9 VAC 25-890-40 Sect II.B.6.c(1)(b)
Within 60 months of state permit coverage, the operator shall implement turf and landscape nutrient management plans on all lands where nutrients are applied to a contiguous area of more than one acre. The following measurable outcomes are established for the implementation of turf and landscape nutrient management plans: (i) within 24 months of permit coverage, not less than 15% of all identified acres will be covered by turf and landscape nutrient management plans; (ii) within 36 months of permit coverage, not less than 40% of all identified acres will be covered by [turf and landscape] nutrient management plans; and (iii) within 48 months of permit coverage, not less than 75% of all identified acres will be covered by [turf and landscape] nutrient management plans. The operator shall not fail to meet the measurable goals for two consecutive years.

Implementation

On February 1, 2014, the County presented an annual report to VDACS with a summary of all fertilizer application performed by the County. Only two of the sites are within the 2000 urbanized area subject to MS4 requirements. Two more sites are within the 2010 urbanized area expansion. All of the subject sites are owned by the Hanover County School Board. Although only four school sites are subject to regulation under the MS4 requirements, there are

7 school sites that apply fertilizer in Hanover County and all sites where fertilizer is applied are over one acre. The Hanover County School Board has developed an Athletic Field Nutrient Management Plan prepared by a certified nutrient planner at this time. Although the Hanover County Parks department also applies fertilizer, none of the sites are within the MS4 area and therefore are not subject to MS4 requirements. Sites within the MS4 over 1 acre where nutrients are applied are as follows:

MS4 Sites Applying Fertilizer Over 1 Acre	GPS Coordinates Latitude/Longitude (Deg° Min' Sec")	Acres	HUC
Lee Davis High School 7052 Mechanicsville Turnpike Mechanicsville, VA 23111	N 37° 36' 52.14" W 77° 20' 20.22"	6.3	JL19
Stonewall Jackson Middle School 8021 Lee Davis Road Mechanicsville, VA 23111	N 37° 37' 4.3" W 77° 20' 27.19"	3.3	ML19

* Note that Atlee HS and Chickahominy MS (MS4 2010) apply an amount of 14.9 acres of fertilizer.